BEVERLY HILLS DENTAL CORP©
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SMILE WITH CONFIDENCE © COSMETIC FAMILY NUBRACE NOSNORE TRAUMA TMJ

435 NORTH ROXBURY DRIVE, SUITE 102, BEVERLY HILLS, CA 90210
PH: (310) 273-9485 FX: (844) 837-3544

Dear Honorable Judge:

Enclosed kindly find the following:

1. Dr. Tom Kalili's autobiography summary.
2. Comprehensive Curriculum Vitae (CV)
3. Protocol for preparation and appearance at trial as an expert witness are as follows:
    - **Preparation, research & deposition fee @ $1,500.00/hour min 2 hr.**
    - Court Appearance half day is $7,500, full day $10,000.00.
    - Flat round trip travel time, parking pass, & gas fee $500.00 per appearance.

Please note that fee is not dependent on the outcome of the case and payment is due 24 hours prior to the time of appearance. Cancellation policy requires a written notification one week prior to scheduled date; otherwise, there is a 2-hour minimum charge.

Thank you for your cooperation.

Respectfully,

Tom Tom Kalili, DMD
Tom Tom KALILI, DMD, QME

NuBrace Founder & CEO, FDA Clearance
Lecturer, 1990 –2011
Division of Advanced Prosthodontics, Biomaterials Science
And Hospital Dentistry, UCLA School of Dentistry

CONTENT

1. Summary autobiography.
2. Qualified Medical Examiner (QME).
3. Expert Witness hourly and court appearance fees.
4. UCLA Lectures, authorships and Research Publications.
5. American Dental Association (ADA) Update Publications.
6. American Association Dental Research (AADR) Publications.
7. International Association Dental Research (IADR) Publications.
8. Publication by other authors referenced publications of Dr. Tom Kalili.

SUMMARY AUTOBIOGRAPHY

Dr. Tom Kalili received his BS from UCLA, Doctorate in Medical Dentistry (DMD) from Boston U., Post-Doctoral Research under the supervision of Dr. Dan Nathanson, Professor Harvard School of Dentistry and Associate Dean Boston University School of Dental Medicine. Dr. Kalili was involved in over 62 research publications and international presentations during his 25 years as a lecturer, scientist and author at UCLA under Dr. Angelo Caputo, Professor & Chairman UCLA, Division of Advanced Prosthodontics, Biomaterials Science and pioneer in stress & strain Photoelastic stress analysis and World renown in Biological Materials Science with over 420 USA and International scientific research publications.

Dr. Kalili was awarded Honorary Captain at the US Coast Guard - Head & Neck Trauma Division. Dr. Kalili has been a Qualified Medical Examiner (QME) in med-legal cases related to head and neck trauma, dental fractures, and temporomandibular joint (TMJ) dysfunction. Dr. Kalili's UCLA involvement has concentrated on Research & Lectureship for over 25 years. His lectures to the freshman dental students have been on laboratory techniques in casting of precious materials, Polymers, Elastomeric impression materials, Abrasion techniques and Preparation Designs. His lectures to senior students have concentrated on Office Management, Biomechanical Considerations for Intracoronal Restorations and Preparation Designs, TMJ dysfunction with numerous publications on various forces involved in orthodontics.

Dr. Kalili has had numerous Publications in American & International Dental Research Meetings (AADR / IADR), Japanese Academy of Maxillofacial Prosthetics International Society for Maxillofacial Rehabilitation Award venues presentations include; Canada, Argentina, Singapore, Acapulco, Tokyo, Okinawa, Hawaii, San Diego, Las Vegas, Greece: Athens, Thessaloniki, Istanbul Turkey, Stockholm and Gothenburg Sweden, Amsterdam, Netherlands, Xian and Shenzhen China.

Areas of interest include fluoride absorption into tooth structure and associated benefits of fluoride and calcium for the prevention of dental decay and associated bone related disease, photoelastic stress analysis of various head and neck anatomical structures, orthodontic forces, temporomandibular joint (TMJ) analysis and treatment to include stem cell therapy. Dr. Kalili's interest toward developmental, cosmetic and traumatic reconstructive oral rehabilitation has led to investigations on porcelain attachment to tooth structure, biomechanical resistance and retentive forces, facial pain and temporomandibular joint (TMJ) dysfunction, fluoride absorption into tooth structure under various environmental conditions using a formulation, which is accredited to two US patents. Dr. Kalili's most recent series of research publications addressed biomechanical forces for orthodontic tooth movement utilizing techniques to reduce localized forces. These studies have led to NuBrace clear removable orthodontics, of which Dr. Kalili is founder and CEO. Dr. Kalili has been a member of the LAPD Martial Arts Advisory Panel - Medical Consultant, ADA, CDA, IADR and in private practice in Beverly Hills for over 30 years and has been designated as an expert medical examiner in over 2,000 med-legal related cases related to medical malpractice, personal injury related to assault and battery, automobile accidents and product liability cases. Dr. Kalili is a Double black belt: Tae kwon do and Black belt BJJ under the Legendary Rigan Machado and 2010 BJJ World champion.

ADEA | AMERICAN DENTAL EDUCATION ASSOCIATION | The Voice of Dental Education

Editor: L. Jackson Brown
EditorJDE@adea.org

December 20, 2011

Dear Reviewer for the *Journal of Dental Education:*

The editorial staff would like to take this opportunity to thank you for your support of the *Journal of Dental Education (JDE)* during 2011. Reviewers like you are the unsung heroes of the *Journal*. Without your time and expertise, the *Journal* could not be the success that it is. Your reviews are the bedrock on which the quality of the *JDE* is grounded. We know it takes time and effort to conduct good reviews. You have selflessly given back to your profession and the *JDE*. The *Journal* and the entire profession are grateful. As always, we welcome your comments and suggestions for how to improve the *Journal*, and we look forward to your continued support in 2012.

The *JDE* had a very good year. In 2011, we received over 700 manuscript submissions and published over 175 articles. We also had more international submissions than ever before and received manuscripts from 27 countries.

We have many things to look forward to in 2012, including the January issue, which celebrates the 75th anniversary of the *Journal of Dental Education*. We hope that you will be able to attend the *JDE* events at the ADEA Annual Session & Exhibition.

On a personal note, as I approach the end of my term as editor of the *Journal*, I extend my personal thanks to you for your support and contribution. I am confident that the next editor will continue the great tradition that has made the *JDE* one of the most respected journals of intellectual discourse in our profession. To maintain that long and illustrious tradition, the next editor will need your continued help. I leave with the comforting knowledge that she or he will receive it.

Sincerely,

L. Jackson Brown

L. Jackson Brown, D.D.S., M.Phil., Ph.D.
Editor, *Journal of Dental Education*

CURRICULUM VITAE

TOM K. KALILI, D.M.D., QME

PERSONAL HISTORY

EDUCATION

1992 - 1994	UCLA Pain	Management Lecture Series
1985 - 1986	Externship	United States Coast Guard Honorary Captain
1981 - 1985	D.M.D.	Boston University Dental Medicine
1975 - 1979	B.S.	UCLA (Psychobiology)

BOARD EXAMS

National Board, Parts I and II; Mean Score = 85%

California State Board; Mean Score = 85%

*Northeast Regional Boards (NERB): Clinical Score = 97.5%

*NERB Enables the practitioner to practice in 49 different jurisdictions, including the United States, Puerto Rico, US Virgin Islands, and Commonwealth of Jamaica.

POSITIONS

Beverly Hills Dental Corp
Co-Director

NuBrace Institute LLC, FDA 510 Medical Device Clearance
Founder & CEO

Ice50 Continuing Dental Education App, CDA, ADA CERP Approved
Founder & CEO

Private dental practice:
435 N. Roxbury Drive, Suite 102
Beverly Hills, CA 90210

Section of Biomaterials Sciences,
UCLA School of Dentistry:
Lecture for didactic and laboratory portion
Freshman and Senior Dental Students.
Research & Lectureship
Author

Section of Business & Administration,
UCLA School of Dentistry:
Lecture to seniors on Office Computerization.

LAPD Martial Arts Advisory Panel
Medical Consultant

AWARD AND HONORS

Aug. 8, 2010	Brazilian Jui Jitsu World Champion.
Oct. 6, 2002	Awarded in the "Japanese Academy of Maxillofacial Prosthetics and the International Society for Maxillofacial Rehabilitation" for Outstanding Poster Presentation 2002."
Aug. 2002	Sports Club LA Athlete of the year 2002.
1995 - 2005	LAPD Martial Arts Advisory Panel: Medical Consultant.
1994 Award	Qualified Medical Examiner (QME).
1985 - 1995	Karate: Black belt program Team Coach.
1985 - 1996	Certificate of 10-year volunteer service at UCLA.
1985 - 1986	United State Coast Guard Dental Clinic: Honorary Captain.
1983 - 1985	Boston University: fundraiser for muscular dystrophy.
1983 - 1985	Boston University Chess Team: Vice President.
1976 - 1980	UCLA Fraternity Philanthropist: fundraiser for the needy.
1980 (Summer)	United States Wrestling Olympic Trials.
1976 - 1978	UCLA Athletic Varsity Wrestling Team Scholarship.
1974 - 1978	U.S.A. Jr. National Wrestling Team.
1974 - 1975	UCLA: Physically Handicapped Tutorial Award.

LECTURES AND PRESENTATIONS:

11-19-03	Dental Finishing & Polishing	UCLA Fr. Students
3-2003	Biomechanical considerations for Preparation Design	UCLA Sr. Students
11-12-02	Tooth Cutting & Rotary Instruments	UCLA Fr. Students
3-2002	Tooth Cutting & Rotary Instruments	UCLA Fr. Students
8-99	Microsoft Office Management Software	Den Mat Corp.
9-98	Fluoridated water formulation	Proctor & Gamble
1988-94	Elastomeric Impression Materials	UCLA Fr. Students
1987-92	Synthetic Polymerization Reactions	UCLA Fr. Students
1988-91	Biomechanical considerations for Preparation Design	UCLA Sr. Students

US & Global Patents & Patent pending held by Dr. Tom Kalili are as follows:

November 1996	Chewing Gum Composition fluoride & citric acid	5585110.
December 1997	Chewing Gum Composition broadened	5698215.
February 2003	Fluoride based oral health products	Pending.

PROFESSIONAL ORGANIZATIONS

2002 – Present	International Society for Maxillofacial Rehabilitation
2001 – Present	American Dental Association
2001 – Present	Los Angeles Dental Association
1992 - Present	Executive Director: Beverly Hills Medical Suite
1988 - Present	International/American Association Dental Research
1988 - 1997	American Academy of Medical Studies
1987 - 1995	Academy of Sports Dentistry: Member
1988 - 1993	Foreign Collaborator: "Dental Advancement"

1988 - 1990	Executive Director: Craniofacial Pain Journal
1988 - 1988	American Dental Association Update: Publication
1986 - 1988	Western Dental Society: Member
1982 - 1984	American Dental Association: Student Member
1984 - 1985	Boston: Member of Geriatric Hospital Care Unit
1984 - 1988	American Dental Association: Member
1976 - 1979	Delta Sigma Phi Fraternity Honors Society
1978 - 1979	U.C.L.A. Tutorial Program: (Tutor for disadvantaged)
1974 - 1976	UCLA Academic Advancement Program:
	(Tutor for physically handicapped students Math/Chemistry)

<u>MAIN FIELDS OF INTEREST</u>

1. Fluoride absorption into tooth structure.
2. Dental Materials and Structures.
3. Porcelain attachment to tooth structure.
4. Stress and strain analysis of craniofacial anatomical structures.
5. Stress and strain analysis of associated materials.
6. Craniofacial Pain.
7. Temporomandibular Joint Dysfunction.
8. Atypical Facial Pain.
9. Viscoelastic and Rheological Material Behavior.

<u>FURTHER INVESTIGATIONS</u>

1. Fluoride and calcium absorption into tooth structure and bone respectively under various environmental conditions. Mediums tested include various oral products for improved dental and bone health.
2. Photoelastic stress analysis of bone-implant interface of various implant systems.
3. Stress distribution of Invisalign repositioning appliances.

COMMITTEES

1984 - 1985	Student Faculty Council (Elected); Admissions Committee, D.M.D. Program in Boston University School of Dentistry.
1979 - 1980	Faculty Council (Elected); Admissions Committee, B.S. Program in University of California, Santa Barbara.
1974 - 1975	Student Faculty Council (Elected); Admissions Committee, A.A. Program in Cypress College.

COMMUNITY ORGANIZATIONS

1993 - 1993	Treatment to the Homeless
1991 - 1993	Big Brother Foundation
1982 - 1985	Philanthropist for Muscular Dystrophy
1977 - 1980	UCLA: Fraternity member
1978 - 1979	Orange County, CA: Volunteer Fire Department
1976 - 1979	Orange County, CA: Member, "Big Brothers"

CLINICAL ACTIVITIES

1991 - Present	Dental Consultant: Beverly Hills Medical Suite
1991 - 1992	Dental Consultant: Blue Shield of CA
1985 - 1992	Laboratory Instructor: Freshman UCLA Dental School
1985 - 1989	UCLA Volunteer department: > 1,500 hours
1984 - 1985	United States Coast Guard, San Francisco: Externship
1982 - 1985	Project Concern Foundation (Dental Clinic for disadvantaged: Argentina)
1984 - 1983	University of California Project Concern Foundation (Dental Clinic for disadvantaged: Santa Barbara, CA)
1980 - 1983	University of California Project Concern Foundation (Dental Clinic: Mexico)
1978 - 1980	UCLA: Mobile Clinic Programs (750 volunteer hours)

RESEARCH AND CREATIVE ACTIVITY

Oct. 6, 2002	"Japanese Academy of Maxillofacial Prosthetics and the International Society for Maxillofacial Rehabilitation"
1995 - Present	Product Integration Microsoft Partner to develop custom Microsoft products.
1992	Speaker Hawaii 92 UCLA Dental Association: Sponsored by Brute Smile.
1992	Thermogram as a Function of Diagnosis for Detection TMJ, Tom Kalili, Bart Gratt; Professor and Chairman UCLA.

1989 Speaker to Orange County Dental Assistants Association: Sponsored by the UCLA Speakers Bureau.
"Head/Neck Trauma"

1988 Speaker to Orange County Dental Assistants Association: Sponsored by the UCLA Speakers Bureau.
"Cross Contamination"

1987 Speaker to Orange County Dental Assistants Association: Sponsored by the UCLA Speakers Bureau. "TMJ"

1986 - 1987 TMJ pre-clinical lecture series. UCLA School of dentistry.

1986 Speaker to Orange County Dental Assistants Association: Sponsored by the UCLA Speakers Bureau.
"Mercury Toxicity"

1985 (Summer) UCLA School of Dentistry Section of Pain Management Biomaterials Participated in "Atypical Facial Pain Clinical Research" Director; Dr. William Solberg.

1979 - 1981 UCLA School of Dentistry, Section of Biomaterials Science, participated in the following research projects:
a: Acid etch technique as a function of microleakage.
b: Physical and mechanical properties of gold
c: Reversible hydrocolloid impression materials
d: Depth of retentive pin optimization

TELEVISION INTERVIEW

1989 - 1990 Temporomandibular Joint Dysfunction" (Channel 7)
1992 - 1993 Temporomandibular Joint Dysfunction" (Channel 3)

INTERNATIONAL & AMERICAN DENTAL RESEARCH (IADR) PRESENTATION & PUBLICATIONS

T. K. Kalili*, Caputo, A. A., Song, E., Enhanced Fluoride Absorption by Enamel for Radiation Oncology Patients using Mouthrinse in a Lowered pH Environment, J. Dent. Res., 2004

T. K. Kalili*, Caputo, A. A., Song, E., Baker, B., Hosseini, S. Enhanced Fluoride Absorption by Enamel for Radiation Oncology Patients using Mouthrinse in a Lowered pH Environment, J. Dent. Res., 2003

T. K. Kalili*, Caputo, A. A., Baker, B., Hosseini, S., Fluoride Uptake by Enamel in a Lowered pH Environment, J. Dent. Res., 2002

T. K. Kalili* and B. M. Gratt. UCLA School of Dentistry.
Electronic Thermography for the Assessment of Acute Temporomandibular Joint Pain, 1995.

Kalili, T., Caputo, A. A., Mito, R., Sperbeck, G., and Matyas, J. *In Vitro* Toothbrush Abrasion and Bond Strength of Bleached Enamel, J. Dent. Res. 70:546, 1991..

K. T. KALILI*, A.A. Caputo, and S.J. Chicanas
"Force Transmission as a Function of Mouthguard Thickness."
J. Dent. Res. 67:346, 1988.

Kalili, T., Caputo, A.A., Highton, R. and Silva, P., Interaction Between Smear Layer and Glass Ionomer Cement Bond Strength, J. Dent. Res. 66:112, 1987.

INTERNATIONAL & AMERICAN DENTAL RESEARCH (IADR) PUBLICATIONS

T. K. Kalili*, Caputo, A. A., Song, E., Baker, B., Hosseini, S. Enhanced Fluoride Absorption by Enamel for Radiation Oncology Patients using Mouthrinse in a Lowered pH Environment, J. Dent. Res., 2003

T. K. Kalili*, Caputo, A. A., Baker, B., Hosseini, S., Fluoride Uptake By Enamel in a Lowered pH Environment, J. Dent. Res., 2002

T. K. Kalili* and B. M. Gratt. UCLA School of Dentistry.
Electronic Thermography for the Assessment of Acute Temporomandibular Joint Pain, 1995.

Kalili, T., Caputo, A. A., Mito, R., Sperbeck, G., and Matyas, J. In Vitro Toothbrush Abrasion and Bond Strength of Bleached Enamel, 1991.

K. T. KALILI*, A.A. Caputo, and S.J. Chaconas
"Force Transmission as a Function of Mouthguard Thickness."
1988.

Kalili, T., Caputo, A.A., Highton, R. and Silva, P., Interaction Between Smear Layer and Glass Ionomer Cement Bond Strength,1987.

JOURNAL PUBLICATIONS

T. K. Kalili*, Caputo, A. A., Song, E., Baker, B., Hosseini, S. Enhanced Fluoride Absorption by Enamel for Radiation Oncology Patients using Mouthrinse in a Lowered pH Environment, JADA Submitted, 2003.

T. K. Kalili* and B. M. Gratt. UCLA School of Dentistry.
Electronic Thermography for the Assessment of Acute Temporomandibular Joint Pain. The Compendium 1996.

Kalili, T., Caputo, A. A., Mito, R., Sperbeck, G., and Matyas, J. In Vitro Toothbrush Abrasion and Bond Strength of Bleached Enamel. Pract. Periodont. Aesth.Dent. 3:22-24, 1991.

K. T. KALILI*, A.A. Caputo, and S.J. Chaconas
"Force Transmission as a Function of Mouthguard Thickness."
Am. Den. Assoc. Update, 1989.

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1. Enhanced Enamel Fluoride Absorption for Radiation Oncology Patients using Lowered pH Mouthrinse

   1592 Enhanced Enamel Fluoride Absorption for Radiation Oncology Patients using Lowered pH Mouthrinse K. T. KALILI, A.A. CAPUTO, S. HOSSEINI, E. SUNG, and B.R. BAKER, UCLA School of Dentistry, Los Angeles, CA, USA Objective: It has been noted that there is significant increase in dental caries with radiation . . .

2. Biomechanics of a Clear Aligner with Soft Inner Layer

   1917 Biomechanics of a Clear Aligner with Soft Inner Layer T.K. **KALILI**, A.A. CAPUTO, and M. WU, UCLA, Los Angeles, CA, USA Objective: Use of clear aligners is sometimes accompanied by patient discomfort and difficulty during insertion and removal. Inclusion of a soft layer in the aligner, which contacts . . .

3. Fluoride Absorption by Enamel from Toothpaste in Lowered pH Environment

   4033 Fluoride Absorption by Enamel from Toothpaste in Lowered pH Environment K. T. KALILI 1, A.A. CAPUTO 1, D. NATHANSON 2, S. HOSSEINI 1, E. SUNG 1, and B. BAKER 1, 1UCLA School of Dentistry, Los Angeles, CA, USA, 2Boston University, USA Objectives: Calcium, vitamin D and fluoride may help patients with . . .

4. Stress Generation During Torque Application to Implant Abutment Screws

   3292 Stress Generation During Torque Application to Implant Abutment Screws K. T. KALILI, UCLA School of Dentistry, Los Angeles, CA, USA, and A. CAPUTO, UCLA School of dentistry, Los Angeles, CA, USA Objective: Complete implant integration may not occur with medically compromised patients such as those . . .

5. Fluoride Uptake by Enamel in a Lowered pH Salivary Environment

   2157 Fluoride Uptake by Enamel in a Lowered pH Salivary Environment K. T. KALILI, B. BAKER, and A.A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA, USA Objectives: Fluoride is known to be effective in reducing tooth decay. In vitro studies have shown enhanced fluoride absorption by enamel under acidic . . .

6. Load Application Duration of Bilaminate Aligner Material

   0064 Load Application Duration of Bilaminate Aligner Material T.K. **KALILI** 1, A. CAPUTO 1, R. MITO 1, D. NATHANSON 2, and S. KHALILNIA 1, 1UCLA, Los Angeles, CA, USA, 2Boston University, MA, USA Objective: Invisible removable orthodontic aligners have increased in popularity due to poor esthetics associated ...

7. Laminated Orthodontic Removable aligner for Molar Uprighting

   1270 Laminated Orthodontic Removable aligner for Molar Uprighting T.K. **KALILI** 1, A. CAPUTO 2, R. MITO 1, I. NISHIMURA 2, S. KHALILNIA 1, A. AJDAHARIAN 3, and T. DO 3, 1UCLA, Los Angeles, CA, 2UCLA School of Dentistry, Los Angeles, CA, 3University of California - Los Angeles, Los Angeles, CA Objective ...

8. Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR

   ... Polymer BAR Thursday, July 15, 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, N. JAVDAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Conventional fixed orthodontics routinely requires attachments for rotational movement. Clear ...

9. Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar

   ... Polymer Bar Friday, July 16, 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) T. OHEBSION, E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Conventional orthodontics often requires brackets and springs to achieve tooth movement. As a ...

10. Stress During Rotation with Conventional Orthodontics Using Springs

    ... Using Springs Thursday, July 15, 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Complexity of rotational movements in orthodontic treatment is often associated with increased ...

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11. Stress Dissipation During Rotation with Conventional Orthodontics

    . . . Orthodontics Thursday, July 15, 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Due to increased demands required during orthodontic tooth rotation, springs and brackets . . .

12. Effect of Clear Orthodontic Aligner Thickness on Stress Production

    . . . , March 19, 2011 : 1:45 p.m. - 3 p.m. Location: Hall C (San Diego Convention Center) Presentation Type: Poster Session J. PACK 1, P. NIKNAEM 1, T. **KALILI** 2, I. NISHIMURA 3, and A. CAPUTO 4, 1School of Dentistry, University of California - Los Angeles, Los Angeles, CA, 2Dentistry, University of California . . .

13. Structural Characteristics Of Clear Aligner With Soft Inner Layer

    . . . Saturday, March 19, 2011 : 1:45 p.m. - 3 p.m. Location: Hall C (San Diego Convention Center) Presentation Type: Poster Session J. XIE, A. AVITAL, T. **KALILI**, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA Objectives: Clear orthodontic aligners have increased popularity . . .

14. Stress Patterns Generated by Laminated Aligners for Mandibular Distraction

    . . . of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, T. **KALILI**, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA Objective

15. Forces Related to Varied Orthodontics Using Micro-Implant

    . . . , 2011 : 2 p.m. - 3:15 p.m. Location: Hall C (San Diego Convention Center) Presentation Type: Poster Session R. ARJANGRAVESH 1, T. RAZAVI 2, and T. **KALILI** 2, 1School of Dentistry, University of Southern California, Los Angeles, CA, 2University of California - Los Angeles, Los Angeles, CA Objective: Preprosthetic . . .

16. [Stress During Rotation with Conventional Orthodontics Using Springs]

    . . . , 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) Presentation Type: Poster Session E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Complexity of rotational movements in orthodontic treatment is often associated with increased . . .

17. [Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR]

    . . . , 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) Presentation Type: Poster Session M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, N. JAVDAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Conventional fixed orthodontics routinely requires attachments for rotational movement . . .

18. [Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar]

    . . . , 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) Presentation Type: Poster Session T. OHEBSION, E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Conventional orthodontics often requires brackets and springs to achieve tooth movement . . .

19. [Stress Dissipation During Rotation with Conventional Orthodontics]

    . . . , 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) Presentation Type: Poster Session N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Due to increased demands required during orthodontic tooth rotation, springs and brackets . . .

20. [Effect of Clear Orthodontic Aligner Thickness on Stress Production]

    . . . , March 19, 2011 : 1:45 p.m. - 3 p.m. Location: Hall C (San Diego Convention Center) Presentation Type: Poster Session J. PACK 1, P. NIKNAEM 1, T. **KALILI** 2, I. NISHIMURA 3, and A. CAPUTO 4, 1School of Dentistry, University of California - Los Angeles, Los Angeles, CA, 2Dentistry, University of California . . .

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21. Duration of Force with Laminated and Unlaminated Orthodontic Aligners

    . . . Unlaminated Orthodontic Aligners Friday, April 3, 2009 : 2 p.m. - 3:15 p.m. Location: Exhibit Hall D (Miami Beach Convention Center) P. NASIBI, T. **KALILI**, J. FAHR, P. PNAMIRANIAN, A. CAPUTO, and K. RUIZ, University of California - Los Angeles, Los Angeles, CA Objective: Orthodontic aligners have increased . . .

22. Stresses Generated from Orthodontic Options USING Micro-Implant

    . . . Options USING Micro-Implant Saturday, April 4, 2009 : 1:45 p.m. - 3 p.m. Location: Exhibit Hall D (Miami Beach Convention Center) J. FAHR, T. **KALILI**, P. NASIBI, I. NISHIMURA, A. CAPUTO, and V. CHENG, University of California - Los Angeles, Los Angeles, CA Objective: Pre-prosthetic orthodontics is commonly . . .

23. Structural Characteristics Of Clear Aligner With Soft Inner Layer

    . . . Saturday, March 19, 2011 : 1:45 p.m. - 3 p.m. Location: Hall C (San Diego Convention Center) Presentation Type: Poster Session J. XIE, A. AVITAL, T. **KALILI**, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA Objectives: Clear orthodontic aligners have increased popularity . . .

24. Stress Patterns Generated by Laminated Aligners for Mandibular Distraction

    . . . of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, T. **KALILI**, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA Objective . . .

25. Stress Generated by Laminated Aligners For Class-III Mandibular Distraction

    . . . For Class-III Mandibular Distraction Friday, April 3, 2009 : 2 p.m. - 3:15 p.m. Location: Exhibit Hall D (Miami Beach Convention Center) E. LAI, T. **KALILI**, A. CAPUTO, T. DARAIE, and K. PORTER, University of California - Los Angeles, Los Angeles, CA Objective: Class III malocclusions are associated with . . .

26. Forces Related to Varied Orthodontics Using Micro-Implant

. . . , 2011 : 2 p.m. - 3:15 p.m. Location: Hall C (San Diego Convention Center) Presentation Type: Poster Session R. ARJANGRAVESH 1, T. RAZAVI 2, and T. **KALILI** 2, 1School of Dentistry, University of Southern California, Los Angeles, CA, 2University of California - Los Angeles, Los Angeles, CA Objective: Preprosthetic . . .

27. Effect of Orthodontic Aligner Laminate Thickness on Stress

    . . . Laminate Thickness on Stress Thursday, April 2, 2009 : 2 p.m. - 3:15 p.m. Location: Exhibit Hall D (Miami Beach Convention Center) P. NAMIRANIAN, T. **KALILI**, A. CAPUTO, and P. TURLEY, University of California - Los Angeles, Los Angeles Objective: Orthodontic aligners have increased popularity due to . . .

28. Caries Preventive Therapies

    . . . School of Dentistry, Indianapolis, USA 1592 Enhanced Enamel Fluoride Absorption for Radiation Oncology Patients using Lowered pH Mouthrinse K. T. KALILI, A.A. CAPUTO, S. HOSSEINI, E. SUNG, and B.R. BAKER, UCLA School of Dentistry, Los Angeles, CA, USA 1593 Fluoride Concentration in the Typical . . .

29. Dentifrices

    . . . , UNILEVER ORAL CARE, Bebington, Wirral, United Kingdom 4033 2:00 PM Fluoride Absorption by Enamel from Toothpaste in Lowered pH Environment K. T. KALILI 1, A.A. CAPUTO 1, D. NATHANSON 2, S. HOSSEINI 1, E. SUNG 1, and B. BAKER 1, 1UCLA School of Dentistry, Los Angeles, CA, USA, 2Boston University . . .

30. Metals: Orthodontic Alloys

    . . . and endodontics 1463 Stress During Rotation with Conventional Orthodontics Using Springs E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA 1464 Stress Dissipation During Rotation with Conventional Orthodontics N. JAVDAN, M. DEREGHISHIAN . . .

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Search Results

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[1][2][3][**4**][5][6][7]

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31. Stress Patterns Generated by Laminated Aligners for Mandibular Distraction

    . . . of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, T. **KALILI**, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA Objective . . .

32. Effect of Clear Orthodontic Aligner Thickness on Stress Production

    . . . , March 19, 2011 : 1:45 p.m. - 3 p.m. Location: Hall C (San Diego Convention Center) Presentation Type: Poster Session J. PACK 1, P. NIKNAEM 1, T. **KALILI** 2, I. NISHIMURA 3, and A. CAPUTO 4, 1School of Dentistry, University of California - Los Angeles, Los Angeles, CA, 2Dentistry, University of California . . .

33. Structural Characteristics Of Clear Aligner With Soft Inner Layer

    . . . Saturday, March 19, 2011 : 1:45 p.m. - 3 p.m. Location: Hall C (San Diego Convention Center) Presentation Type: Poster Session J. XIE, A. AVITAL, T. **KALILI**, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA Objectives: Clear orthodontic aligners have increased popularity . . .

34. Stress During Rotation with Conventional Orthodontics Using Springs

    . . . Using Springs Thursday, July 15, 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Complexity of rotational movements in orthodontic treatment is often associated with increased . . .

35. Other Dental Equipment

    . . . , Colgate-Palmolive Company, Piscataway, NJ 2025 Forces Related to Varied Orthodontics Using Micro-Implant R. ARJANGRAVESH 1, T. RAZAVI 2, and T. **KALILI** 2, 1School of Dentistry, University of Southern California, Los Angeles, CA, 2University of California - Los Angeles, Los Angeles, CA 2026 Short-term . . .

36. Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR

    . . . Polymer BAR Thursday, July 15, 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, N. JAVDAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Conventional fixed orthodontics routinely requires attachments for rotational movement. Clear . . .

37. Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar

    . . . Polymer Bar Friday, July 16, 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) T. OHEBSION, E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Conventional orthodontics often requires brackets and springs to achieve tooth movement. As a . . .

38. Stress Dissipation During Rotation with Conventional Orthodontics

    . . . Orthodontics Thursday, July 15, 2010 : 4:45 p.m. - 6 p.m. Location: Exhibit Hall (CCIB) N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA Due to increased demands required during orthodontic tooth rotation, springs and brackets . . .

39. Other Dental Equipment

    . . . , Colgate-Palmolive Company, Piscataway, NJ 2025 Forces Related to Varied Orthodontics Using Micro-Implant R. ARJANGRAVESH 1, T. RAZAVI 2, and T. **KALILI** 2, 1School of Dentistry, University of Southern California, Los Angeles, CA, 2University of California - Los Angeles, Los Angeles, CA 2026 Short-term . . .

40. Metals: Orthodontic Alloys

    . . . Hall (CCIB) 1463 Stress During Rotation with Conventional Orthodontics Using Springs E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA 1464 Stress Dissipation During Rotation with Conventional Orthodontics N. JAVDAN, M. DEREGHISHIAN . . .

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41. Abutment-Implant Analysis

    . . . , 2Johann Wolfgang Goethe University, Frankfurt, Germany 3292 Stress Generation During Torque Application to Implant Abutment Screws K. T. KALILI, UCLA School of Dentistry, Los Angeles, CA, USA, and A. CAPUTO, UCLA School of dentistry, Los Angeles, CA, USA 3293 Precision of Various Mechanical . . .

42. Orthodontic Materials and Techniques

    . . . Shan Medical University, Taichung, Taiwan 1938 WITHDRAWN 1939 Duration of Force with Laminated and Unlaminated Orthodontic Aligners P. NASIBI, T. **KALILI**, J. FAHR, P. PNAMIRANIAN, A. CAPUTO, and K. RUIZ, University of California - Los Angeles, Los Angeles, CA 1940 Effect of Moment on Resistance to Sliding . . .

43. Occlusion, Mastication, Tooth Movement

    . . . , Shri Ramachandra Dentl College, Chennai, India 2261 Stress Generated by Laminated Aligners For Class-III Mandibular Distraction E. LAI, T. **KALILI**, A. CAPUTO, T. DARAIE, and K. PORTER, University of California - Los Angeles, Los Angeles, CA 2262 a Novel Mouse Orthodontic Tooth Movement Model Z. KALAJZIC . . .

44. Tooth Eruption, TMJ, Malocclusion, Implants, Fixatives, Decision-making

    . . . , Germany, 2Griffith University, Southport, QLD, Australia 3574 Stresses Generated from Orthodontic Options USING Micro-Implant J. FAHR, T. **KALILI**, P. NASIBI, I. NISHIMURA, A. CAPUTO, and V. CHENG, University of California - Los Angeles, Los Angeles, CA 3575 A new locus for hereditary gingival fibromatosis . . .

45. Metals: Orthodontic Alloys

    . . . Hall (CCIB) 1463 Stress During Rotation with Conventional Orthodontics Using Springs E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA 1464 Stress Dissipation During Rotation with Conventional Orthodontics N. JAVDAN, M. DEREGHISHIAN . . .

46. [Polymerization Stress Development and Tooth Deflection; Tooth Stabilization]

    . . . , ON, Canada 3056 Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar T. OHEBSION, E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA 3057 Contraction Stress and Extent of Polymerization of Flowable Composites B. CODAN, C.O . . .

47. [Orthodontic Appliances, Imaging]

    . . . . RAY, F.M. BECK, and S.S. HUJA, Ohio State University, Columbus, OH 918 Effect of Orthodontic Aligner Laminate Thickness on Stress P. NAMIRANIAN, T. **KALILI**, A. CAPUTO, and P. TURLEY, University of California - Los Angeles, Los Angeles 919 WITHDRAWN 920 Effects of nickel-titanium and stainless steel . . .

48. [New Materials]

    . . . , Division of Kerr Corporation, Wallingford, CT 3284 Effect of Clear Orthodontic Aligner Thickness on Stress Production J. PACK 1, P. NIKNAEM 1, T. **KALILI** 2, I. NISHIMURA 3, and A. CAPUTO 4, 1School of Dentistry, University of California - Los Angeles, Los Angeles, CA, 2Dentistry, University of California . . .

49. [New Materials]

    . . . , Division of Kerr Corporation, Wallingford, CT 3284 Effect of Clear Orthodontic Aligner Thickness on Stress Production J. PACK 1, P. NIKNAEM 1, T. **KALILI** 2, I. NISHIMURA 3, and A. CAPUTO 4, 1School of Dentistry, University of California - Los Angeles, Los Angeles, CA, 2Dentistry, University of California . . .

50. [Clinical Orthodontics – Treatment Modalities and Outcomes]

    . . . ·, Colombia 1929 Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, N. JAVDAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA 1930 Interceptive versus Comprehensive Orthodontics in Medicaid Patients: An Ongoing RCT . . .

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51. New Materials

    . . . , Division of Kerr Corporation, Wallingford, CT 3284 Effect of Clear Orthodontic Aligner Thickness on Stress Production J. PACK 1, P. NIKNAEM 1, T. **KALILI** 2, I. NISHIMURA 3, and A. CAPUTO 4, 1School of Dentistry, University of California - Los Angeles, Los Angeles, CA, 2Dentistry, University of California . . .

52. Polymerization Stress Development and Tooth Deflection; Tooth Stabilization

    . . . , ON, Canada 3056 Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar T. OHEBSION, E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA 3057 Contraction Stress and Extent of Polymerization of Flowable Composites B. CODAN, C.O . . .

53. Polymerization Stress Development and Tooth Deflection; Tooth Stabilization

    . . . , ON, Canada 3056 Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar T. OHEBSION, E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA 3057 Contraction Stress and Extent of Polymerization of Flowable Composites B. CODAN, C.O . . .

54. Clinical Orthodontics – Treatment Modalities and Outcomes

    . . . ·, Colombia 1929 Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, N. JAVDAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA 1930 Interceptive versus Comprehensive Orthodontics in Medicaid Patients: An Ongoing RCT . . .

55. Clinical Orthodontics – Treatment Modalities and Outcomes

    . . . ·, Colombia 1929 Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, N. JAVDAN, T. **KALILI**, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

1930 Interceptive versus Comprehensive Orthodontics in Medicaid Patients: An Ongoing RCT ...

56. IADR/AADR/CADR 87th General Session and Exhibition (April 1-4, 2009): Author Index K

    ... , 882, 2236, 2771, 2772, 2773 Kalajzic, Z. 26, 28, 2262, 2268, 3581 Kalantar Motamedi, M. H. 348 Kalathingal, S. 775 Kaled, G. 3064 Kaleem, M. 1920 **Kalili**, T. 1939, 2261 **Kalili**, T. 918, 3574 Kalkwarf, K. 2871 Kallás, M. S. 3016 Kallenberg, C. G. 2781 Kallio, A. 609 Kalmann, B. 390 Kaltschmitt, J. 2162 ...

57. [authork.html]

    ... , M. 1825 Kakarla, P. 2195 Kakimoto, N. 1030 Kaku, M. 1531 Kakuda, S. 1557 Kakuta, K. 3437 Kalajzic, I. 1774 Kalash, D. 2770 Kalenderian, E. 102 **Kalili**, T. 2025, 3284, 3285, 3294 Kalinke, L. P. 2854 Kalk, W. 377 Kalke, L. 469 Kallio, A. 1991 Kalliontzi, K. 784 Kalra, S. 3395 Kaltschmitt, J. 2839 Kaluma ...

58. [authork.html]

    ... , M. 1825 Kakarla, P. 2195 Kakimoto, N. 1030 Kaku, M. 1531 Kakuda, S. 1557 Kakuta, K. 3437 Kalajzic, I. 1774 Kalash, D. 2770 Kalenderian, E. 102 **Kalili**, T. 2025, 3284, 3285, 3294 Kalinke, L. P. 2854 Kalk, W. 377 Kalke, L. 469 Kallio, A. 1991 Kalliontzi, K. 784 Kalra, S. 3395 Kaltschmitt, J. 2839 Kaluma ...

59. IADR/AADR/CADR 89th General Session and Exhibition (March 16-19, 2011): Author Index K

    ... , M. 1825 Kakarla, P. 2195 Kakimoto, N. 1030 Kaku, M. 1531 Kakuda, S. 1557 Kakuta, K. 3437 Kalajzic, I. 1774 Kalash, D. 2770 Kalenderian, E. 102 **Kalili**, T. 3284, 3285, 3294 Kalinke, L. P. 2854 Kalk, W. 377 Kalke, L. 469 Kallio, A. 1991 Kalliontzi, K. 784 Kalra, S. 3395 Kaltschmitt, J. 2839 Kaluma, D ...

60. [authork.html]

    ... , 4722, 4932 K. KAKUTA 1715 J. KALA 1761 M.N. KALAJI 458 Z. KALAJZIC 1967 H. KALEKOU-GRECA 1923 A. KALENDER 1495 A. KALENDER 4948 S. KALFAS 2130 T. **KALILI** 1463, 1464, 1929, 3056 A.P. KALIX 2356 W. KALK 2905 L. KALKE 3644 K. KALLO 2743 L. KALOGERAKI 4244 C. KALPIDIS 3822 M. KALYVA 2153 M. KAMAC1 1087 ...

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61. [authork.html]

    . . . , 4932 Kakuta, K. 1715 Kala, J. 1761 Kalaji, M. N. 458 Kalajzic, Z. 1967 Kalekou-Greca, H. 1923 Kalender, A. 1495 Kalender, A. 4948 Kalfas, S. 2130 **Kalili**, T. 1463, 1464, 1929, 3056 Kalix, A. P. 2356 Kalk, W. 2905 Kalke, L. 3644 Kallo, K. 2743 Kalogeraki, L. 4244 Kalpidis, C. 3822 Kalyva, M. 2153 Kamac1 . . .

62. IADR General Session (July 14-17, 2010): Author Index K

    . . . Kalaji, M. N. 458 Kalajzic, Z. 3525 Kalajzic, Z. 1967 Kalekou, H. 1232 Kalekou-Greca, H. 1923 Kalender, A. 1495 Kalender, A. 4948 Kalfas, S. 2130 **Kalili**, T. 1463, 1464, 1929, 3056 Kalix, A. P. 2356 Kalk, W. 2905 Kalke, L. 3644 Kallo, K. 2743 Kalogeraki, L. 4244 Kalpidis, C. 3822 Kalyva, M. 2153 Kamac1 . . .

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1929 Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)

M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, N. JAVDAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

Conventional fixed orthodontics routinely requires attachments for rotational movement. Clear aligners are popular due to increased patient compliance. However, clear aligners may also require attachments to achieve rotational movement. Compressible polymer “BAR” on the internal aspect of the aligner may allow rotational movement without requiring invasive and esthetically displeasing attachments.

Objective: To compare stress dissipation with time during rotational movement between conventional orthodontic spring-bracket device and clear laminated aligner with BAR.

Method: A Photoelastic model of a dentate adult maxilla was fabricated using different teeth and bone simulants. One orthodontic appliance was a NiTi spring fixed to a bracket on the distal marginal ridge of tooth #8. The second was a compressible polymer BAR fabricated using CAD/CAM technology positioned on the distal marginal ridge of tooth #9. Load cell exerted 200 grams to both appliances. Force dissipation was measured and stresses were observed using polariscope field. Stress data for spring and BAR were analyzed using computer graphic program to quantify stress intensity by fringe number counting.

Results: Spring and BAR demonstrated similar stress patterns to root and crestal bone of tooth numbers 8 and 9 with respect to number and proximity of fringes. To a lesser degree, stress was evident along root and crestal bone of lateral incisors as well. More rapid dissipation of force and lower levels of force were evident with the spring compared to BAR. At 5 minutes BAR=195gr and spring=185gr. Average force exerted by BAR=150gr, spring=110gr. Overall force was higher and more uniform with BAR compared to spring.

Conclusion: Compressible Polymer BAR demonstrated higher and longer duration of forces compared to spring. Clinical implications may include less office visits and shorter treatment time with BAR. The more uniform force may decrease root-bone resorption. Elimination of brackets allows less invasive, more hygienic, and greater esthetic orthodontic treatment.

See more of: Clinical Orthodontics – Treatment Modalities and Outcomes
See more of: Craniofacial Biology

1592 Enhanced Enamel Fluoride Absorption for Radiation Oncology Patients using Lowered pH Mouthrinse

K. T. KALILI, A.A. CAPUTO, S. HOSSEINI, E. SUNG, and B.R. BAKER, UCLA School of Dentistry, Los Angeles, CA, USA

Objective: It has been noted that there is significant increase in dental caries with radiation oncology patients. This increase is mainly due to the significant reduction in salivary flow in post radiation therapy. Increasing fluoride absorption into enamel may play a significant role in minimizing dental decay in these patients. Studies have demonstrated that adult teeth receive minimal benefit from topical fluoride treatment in neutral pH environments. The purpose of this in vitro investigation was to determine the potential for increased enamel fluoride absorption from a lowered pH fluoridated mouthrinse in a salivary environment. Methods: Roots of 50 freshly extracted human teeth were masked and the crowns immersed into experimental solutions consisting of synthetic saliva, mouthrinse (Scope, Proctor & Gamble), and hydrogen fluoride. Solution pH was modified to pH 2 and pH 4 levels by adding citric acid. After crown immersion for periods of 1 min and 5 min, teeth were removed and the solutions subjected to fluoride concentration analysis using a fluoride ion activity electrode technique. The amount of fluoride absorbed by the crowns was determined by subtracting the amount of fluoride in solution prior to and following crown immersion. The data was subjected to ANOVA and t tests. Results: Lowering the pH level of the Scope-HF solution significantly increased fluoride absorption into enamel ($p < 0.05$). There was no fluoride absorption differences observed between pH 2 and pH 4 levels. An increased absorption trend was noted with the 5 min immersion time compared to 1 min, however this difference was not significant. Conclusions: This study indicates that lowered pH of fluoridated Scope in a salivary environment significantly increases fluoride absorption into enamel, may decrease the risk of caries, and may provide a benefit to radiation oncology patients.

Seq #168 - Caries Preventive Therapies
11:00 AM-12:15 PM, Friday, 27 June 2003 Svenska Massan Exhibition Hall B

Back to the Cariology Research Program
Back to the 81st General Session of the International Association for Dental Research (June 25-28, 2003)

1917 Biomechanics of a Clear Aligner with Soft Inner Layer

T.K. KALILI, A.A. CAPUTO, and M. WU, UCLA, Los Angeles, CA, USA

Objective: Use of clear aligners is sometimes accompanied by patient discomfort and difficulty during insertion and removal. Inclusion of a soft layer in the aligner, which contacts the teeth, may alleviate some of these effects. The purpose of this study was to evaluate stresses generated with an aligner laminated with a soft inner liner compared to an aligner without the soft liner. Methods: A Photoelastic model of a dentulous adult maxilla was fabricated using different teeth and bone simulants. Polyvinyl siloxane impressions were made and poured up in stone. The central incisors were modified to represent desired orthodontic movement. Two types of clear aligners were fabricated off of the modified model. One aligner was fabricated from a polycarbonate sheet. Another aligner was fabricated from a polycarbonate sheet laminated with a lower modulus polyurethane. The laminated and un-laminated aligners were inserted on the model and resulting stresses observed in the field of the polariscope and photographed. Stress data for the two aligners was analyzed using a computer graphics program to quantify stress intensity by fringe number counting. Results: Similar stress distributions developed at the crestal bone between the central incisors with both aligners. However, the level of stress was significantly lower with the laminated aligner. Further, stress propagated apically along the root surfaces of these teeth with both aligners. Again, the stress levels were lower with the laminated aligner. To a lesser degree, stress was transferred along the roots of the lateral incisors; lower intensity seen with the laminated aligner. Conclusion: Both aligners tested produced similar stress distributions in the supporting bone simulant. The stresses associated with the laminated aligner were of lower intensity. Consequently, the aligner with a soft inner layer may alleviate the problems of patient discomfort and difficulty during insertion and removal of un-laminated aligners.

Seq #209 - Orthodontics and Tooth Movement
2:00 PM-3:15 PM, Friday, March 23, 2007 Ernest N. Morial Convention Center Exhibit Hall I2-J

Back to the Craniofacial Biology Program
Back to the IADR/AADR/CADR 85th General Session and Exhibition (March 21-24, 2007)

Top Level Search

4033 Fluoride Absorption by Enamel from Toothpaste in Lowered pH Environment

K. T. KALILI[1], A.A. CAPUTO[1], D. NATHANSON[2], S. HOSSEINI[1], E. SUNG[1], and B. BAKER[1], [1]UCLA School of Dentistry, Los Angeles, CA, USA, [2]Boston University, USA

Objectives: Calcium, vitamin D and fluoride may help patients with osteoporosis. A previous study has shown improved fluoride absorption from a fluoridated mouthrinse in a lowered pH environment. Effects of toothpaste fluoride absorption in a lowered pH salivary environment have not been established. The purpose of this investigation was to assess the fluoride absorption into enamel from a fluoridated toothpaste in an acidic salivary environment. Methods: Roots of 50 freshly extracted human teeth were masked and the crowns then immersed into experimental solutions. The solutions consisted of equal parts of synthetic saliva (Roxane Lab), with: a) distilled water, b) slurry mixture of Crest (Procter and Gamble), c) slurry mixture of Crest with amino acid lysine (calcium absorption facilitator), d) slurry mixture of Crest with citric acid pH 2, e) slurry mixture of Crest with citric pH 4, and f) slurry mixture of Crest with lysine pH 4. After crown immersion for periods of 1 and 5 min, the teeth were removed and the solutions subjected to fluoride concentration analysis using a fluoride ion activity electrode technique. The amount of fluoride absorbed by the crowns was determined by subtracting the amount of fluoride in solution prior to and following crown immersion. The data was subjected to ANOVA and t tests. Results: Lowered pH in a salivary environment significantly enhanced fluoride absorption from the toothpaste compared to a neutral pH environment ($p < 0.05$). There was no fluoride absorption differences observed between pH levels or immersion times. Some increase of fluoride uptake was noted with groups containing lysine. Conclusions: This study indicates that lowered pH in a salivary environment increases fluoride activity for significantly greater fluoride absorption from toothpaste containing fluoride into enamel, with psssible benefits to osteoporosis patients. Further, lysine causes some increase in fluoride absorption into enamel.

Seq #412 - Dentifrices
12:30 PM-2:30 PM, Saturday, 13 March 2004 Hawaii Convention Center 322-A

Back to the Oral Health Research Program
Back to the IADR/AADR/CADR 82nd General Session (March 10-13, 2004)

Top Level Search

3292 Stress Generation During Torque Application to Implant Abutment Screws

K. T. KALILI, UCLA School of Dentistry, Los Angeles, CA, USA, and A. CAPUTO, UCLA School of dentistry, Los Angeles, CA, USA

Objective: Complete implant integration may not occur with medically compromised patients such as those with osteoporosis, those on steroids, and post menopausal patients. Questions arise as to the stresses exerted at the implant-bone interface during securing abutment cylinders to implants. The objective of this Photoelastic study was to evaluate the stress generation during torque application to abutment screws on implants with different levels of bone integration. Methods: Composite models of overall dimensions 4 x 4 x 1cm were fabricated using individual Photoelastic plastics to simulate trabecular and 1.0mm thick cortical bone. Threaded 10mm long implants (3i), of diameters 3.25mm, 4.0mm, and 5mm were embedded into individual models. Models were made with implants representing the following degrees of simulated integration: 100%, 50%, 25%. Partial integration was represented by blocking portions of the threads. Appropriate abutment cylinders and screws were installed on the implants. A calibrated torque wrench (ITI) was used to tighten the screws to 20N/cm. The stresses developed in the bone simulants were recorded in the field of a circular polariscope and the resultant isochromatic fringes digitally analyzed. Results: The lowest and least stress concentration occurred with the completely integrated 5mm diameter implant. The highest stresses were noted at the crestal bone of the smallest diameter implant at 25% integration, as well as at the junction of non-integration areas. Intermediate torquing stresses were generated with the mid-sized implant regardless of degree of integration. Conclusions: Results demonstrated increasing torque-induced stress associated with decreasing implant diameter and degree of integration. Exceptional care should be exerted when installing abutment cylinders of small diameter in clinically incomplete integration situations.

Seq #352 - Abutment-Implant Analysis
2:00 PM-4:00 PM, Saturday, 12 March 2005 Baltimore Convention Center Exhibit Hall E-F

Back to the Implantology Research Program
Back to the IADR/AADR/CADR 83rd General Session (March 9-12, 2005)

Top Level Search

2157 Fluoride Uptake by Enamel in a Lowered pH Salivary Environment

K. T. KALILI, B. BAKER, and A.A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA, USA

Objectives: Fluoride is known to be effective in reducing tooth decay. In vitro studies have shown enhanced fluoride absorption by enamel under acidic conditions in a non-salivary environment. However, effects of saliva on fluoride absorption in an acidic environment have not been established. The purpose of this investigation was to determine the effects of a mild acidic environment on fluoride absorption by enamel in a synthetic salivary solution. **Methods:** Roots of 50 freshly extracted human teeth were masked and the crowns then immersed into experimental solutions. The solutions consisted of equal parts of synthetic saliva (Roxane Lab) with: a) distilled water, b) fluoridated water, c) fluoridated water with citric acid pH 2, d) fluoridated water with citric pH 4, and e) fluoridated water with amino acid lysine (calcium absorption facilitator) pH 4. After crown immersion for periods of 5 and 30 min, the teeth were removed and the solutions subjected to fluoride concentration analysis using a fluoride ion activity electrode technique. The amount of fluoride absorbed by the crowns was determined by subtracting the amount of fluoride in solution prior to and following crown immersion. The data was subjected to ANOVA and t tests. **Results:** Lowered pH in a salivary environment enhanced fluoride absorption by up to eight times compared to a neutral pH environment ($p < 0.05$). There were no fluoride absorption differences observed between pH levels or immersion times. Some increase of fluoride uptake was noted with lysine. **Conclusions:** This study indicates that lowered pH in a salivary environment increases fluoride activity for significantly greater fluoride absorption into enamel. Further, lysine causes some increase in fluoride absorption into enamel.

Seq #198 - Dentifrices, Stain Prevention, Gums, Fluoride
11:00 AM-12:15 PM, Friday, 8 March 2002 San Diego Convention Center Exhibit Hall C

Back to the Oral Health Research Program
Back to the IADR/AADR/CADR 80th General Session (March 6-9, 2002)

Top Level Search

0064 Load Application Duration of Bilaminate Aligner Material

T.K. KALILI[1], A. CAPUTO[1], R. MITO[1], D. NATHANSON[2], and S. KHALILNIA[1],
[1]UCLA, Los Angeles, CA, USA, [2]Boston University, MA, USA

Objective: Invisible removable orthodontic aligners have increased in popularity due to poor esthetics associated with traditional fixed orthodontic appliances. Inclusion of a soft layer in the aligner, which contacts the teeth, may alleviate potential patient discomfort and difficulty during insertion and removal. Questions arise as to how this soft liner may affect the duration of force application. The purpose of this study was to assess the duration of force application of orthodontic aligner material with and without a soft inner lining.

Methods: An adult human molar was cleaned and horizontally mounted in die stone with the facial aspect exposed for testing. Two types of orthodontic aligner materials were vacuum adapted over the tooth. One aligner from a polycarbonate sheet and a second from polycarbonate laminated with a lower modulus polyurethane. Simulated orthodontic forces of 100gm were applied to the aligner materials on the tooth using a calibrated load cell with a digital readout. The change in load as a function of time was monitored for both aligner materials. Five replications were performed for each material. The data was analyzed using AVOVA.

Results: Under the condition of this study, there was a statistically different time of force decay between the two materials. The decay time for the polycarbonate laminated with the lower modulus polyurethane was significantly longer than that of unlaminated polycarbonate.

Conclusion: The results indicate the potential for longer term force application with aligners having a lowered modulus inner layer.

Seq #11 - Dental Materials: Clinical Trials
4:00 PM-5:30 PM, Thursday, September 27, 2007 Ioannis Vellidis Congress Centre Hall "Ellopia 2B"

Back to the Scientific Groups Program
Back to the 42nd annual meeting of IADR-Continental European and Israeli Divisions (Sept 26th - 29th, 2007)

Top Level Search

1270 Laminated Orthodontic Removable aligner for Molar Uprighting

T.K. KALILI[1], **A. CAPUTO**[2], R. MITO[1], I. NISHIMURA[2], S. KHALILNIA[1], A. AJDAHARIAN[3], and T. DO[3], [1]UCLA, Los Angeles, CA, [2]UCLA School of Dentistry, Los Angeles, CA, [3]University of California - Los Angeles, Los Angeles, CA

Objective: Conventional removable orthodontic appliances are commonly used for molar uprighting. However there are concerns as to patient discomfort, hygiene and esthetics. Use of laminated clear aligners with soft internal lining has demonstrated potential for lower stress to the teeth, associated bone, greater patient comfort and longer term force application for tooth movement. The purpose of this study was to evaluate effectiveness of molar uprighting using a. Clear orthodontic aligners laminated with a soft inner liner and b. Conventional uprighting orthodontic appliance.

Methods: A Photoelastic model of a dentulous adult maxilla was fabricated using different teeth and bone simulants with first molar tooth #14 missing and mesial tilting of tooth # 15. The Photoelastic model was digitally scanned; tooth # 15 digitally up-righted using CAD/CAM technology. Clear polycarbonate laminated aligner with lower modulus polyurethane was fabricated from the modified printed model. The same Photoelastic model was used to test the laminated aligner and conventional orthodontic appliance and resulting stresses observed in the field of the polariscope and photographed. Stress data for the two systems was analyzed using a computer graphics program to quantify stress intensity by fringe number counting.

Results: The conventional appliance demonstrated localized tensile stress along the mesial crestal bone and compressive stress along the distal crestal bone of tooth #15. The laminated aligner demonstrated similar stress distribution patterns. Further, the conventional appliance demonstrated stress on the opposing side at the loop region not seen with the laminated aligner. Conclusion: Both conventional and laminated orthodontic appliances demonstrated similar stress patterns during molar uprighting study. The laminated aligners may have benefits where ease of hygiene, lower risk of allergic reactions, unwanted stress to teeth and bone outside of the region, esthetics and or greater patient comfort are mandated.

Seq #179 - Late Breaking News
10:45 AM-12:00 PM, Saturday, April 5, 2008 Hilton Anatole Hotel Trinity I - Exhibit Hall

Back to the Late Breaking News Program
Back to the AADR 37th Annual Meeting and Exhibition

Top Level Search

3056 Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar

Friday, July 16, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)

T. OHEBSION, E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

Conventional orthodontics often requires brackets and springs to achieve tooth movement. As a result, clinicians often schedule monthly visits for adjustments to maintain constant but gradual force. The question is raised as to the duration of force that orthodontic appliances can exert.

Objective: To assess the duration of stress during rotational tooth movement using orthodontic aligners with a compressible polymer bar, “BAR,” on the internal aspect of the aligner.

Method: An adult dentate maxilla was fabricated using Photoelastic material. The teeth were fabricated with Pl-1, a higher modulus material. Fabrication of bone was with Solithane, a lower modulus material. BAR was placed on the distal marginal ridge of tooth #9 with a load cell exerting 200 grams of force. Polariscope field was used to view the resulting stresses with time and the images were photographed. A Computer graphic program was used to analyze and quantify stress intensity by fringe number counting.

Results: Gradual force dissipation was evident within the first 5 minutes from the initial 200 grams to 195 grams. Force continued to gradually dissipate with time at each 5 minute interval. At the 90 minute mark the load dissipated to 100 grams. There was a plateau at the 135 minute mark where the load reduced to 85 grams. Photoelastic analysis demonstrated greater number and intensity of fringes along the CEJ on the distal aspect of the tooth ipsilateral to the bracket. Stress patterns within these regions continued to diminish with increasing time from onset of initial load.

Conclusion: Results of this study demonstrated that for the first 2 hours the force was maintained above 100 grams, required for tooth movement. Thereafter the forces decreased below the 100 gram mark to a plateau which indicates stabilization of the teeth. Future studies will address other orthodontic and load dissipation techniques.

See more of: Polymerization Stress Development and Tooth Deflection; Tooth Stabilization
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

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1463 Stress During Rotation with Conventional Orthodontics Using Springs

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)

E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

Complexity of rotational movements in orthodontic treatment is often associated with increased stress to root and associated bone due to the need for attachments. Although clear aligner orthodontic treatment has shown to be effective in minor tooth movement, they also may require attachments to provide additional forces necessary for rotational movement. Objective: To analyze location of stresses generated during rotational movement with conventional orthodontic NiTi Spring-bracket device. Method: A dentate maxillary Photoelastic adult model was fabricated using Pl-1, higher modulus material for the teeth, and Solithane, lower modulus material for the bone. Bracket was cemented to the distal marginal ridge of tooth #8. The orthodontic spring was attached to the bracket with load cell exerting 200 grams of force. Stresses were viewed using a Polariscope field and images were photographed. Stress analysis software was used to assess stress and intensity of fringes. Results: Stress was observed circumferentially throughout the root of tooth #8, associated crestal bone, and along the root and bone of both adjacent teeth. The number of fringes were consistent at 4-6 fringes between the CEJ and the apex on the same side as the bracket. Stress continued to diminish with increasing distance from the CEJ closest to the spring-bracket device. The fringe counts were as follows: tooth numbers 7 and 9 had 3-4 fringes, tooth numbers 6 and 10 had 2-3 fringes, and no further stress was evident beyond this range. Conclusion: This study revealed that rotational orthodontic tooth movement using a conventional spring loaded bracket device produces stress not only at the

borders of the teeth and associated bone, but also circumferentially throughout the tooth-bone interface. To a lesser degree, there was stress to the adjacent teeth. Clinicians should consider the circumferential stresses during rotational movement when treatment planning to optimize root and bone health.
See more of: Metals: Orthodontic Alloys
See more of: Dental Materials 8: Metal-based Materials

IADR GENERAL SESSION

BARCELONA, SPAIN • JULY 14-17, 2010

1464 Stress Dissipation During Rotation with Conventional Orthodontics

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)

N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

Due to increased demands required during orthodontic tooth rotation, springs and brackets are often an integral component of conventional orthodontic treatment. As a result, clinicians often schedule monthly visits for adjustment to maintain constant but gradual force.

Objective: to assess duration of stress during rotational tooth movement using conventional orthodontic NiTi Spring-bracket device.

Method: a Photoelastic model was fabricated to represent a max adult patient. The teeth were fabricated using Pl-1, a higher modulus material and the surrounding bone was made using Solithane, a lower modulus material. Tooth # 8 consisted of an orthodontic bracket on the distal marginal ridge. The orthodontic spring was attached to the bracket with a load cell exerting 200 grams of force. Images were viewed using a Polariscope field and the resulting stresses were photographed. CAD program was used to analyze stress intensity by fringe number counting.

Results: Force decreased rapidly within the first 5 minute interval from the initial 200 grams to 185 grams. Force continued to dissipate with time at each 5 minute interval. At 30 minute mark the load dissipated to 100 grams. There was a plateau at the 45 minute mark where the load reduced to 85 grams. Photoelastic analysis demonstrated increase in both concentration and intensity of stress along the crestal alveolar bone on the distal aspect of tooth #8 ipsilateral to the bracket.

Conclusion: This study revealed that there is a rapid dissipation of force from the spring during the first 5 minutes. As a result, clinician should consider scheduling patient appointments at shorter time intervals to optimize forces being exerted by spring loaded device. Future study should consider examining the increase amount of loads at initial phase and its correlation with potential root and bone resorption.

See more of: Metals: Orthodontic Alloys
See more of: Dental Materials 8: Metal-based Materials

IADR GENERAL SESSION
SAN DIEGO, CALIFORNIA • MARCH 16-19, 2011

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3284 Effect of Clear Orthodontic Aligner Thickness on Stress Production

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J. PACK[1], P. NIKNAEM[1], K. T. KALILI[2], I. NISHIMURA[3], and A. CAPUTO[4], [1]School of Dentistry, University of California - Los Angeles, Los Angeles, CA, [2]Dentistry, University of California - Los Angeles, Los Angeles, CA, [3]Div. of Advanced Prosthodontics, University of California - Los Angeles, Los Angeles, CA, [4]University of California - Los Angeles, Santa Monica, CA

Objectives: Clear Orthodontic Aligners are preferred by patients due to improved esthetics, hygiene, and removability. These aligners have increased marketability since readily placed by both general dentists and orthodontists as compared to traditional appliances. Research reveals compressible internal liners improve patient comfort, prolong tooth movement, and minimize local stress to teeth and bone. Since clear aligners prevent full intercuspation the risk of super eruption exists. The purpose of this study was to evaluate stress produced by aligners of varying thicknesses. **Methods:** “Unaltered” Photoelastic model of dentulous adult maxilla was fabricated using different teeth and bone simulants. PVS impression was taken of the unaltered model for CT scan and an “altered” model was fabricated using CAD/CAM technology after making the following lingual movements: Maxillary lateral incisors 0.3mm and maxillary central incisors 0.6mm. Thick laminated aligner (0.75mm), medium laminated aligner (0.50mm), and thin laminated aligner (0.25mm) were fabricated from the digitally altered model. The two aligners were inserted over the Photoelastic model to assess stress distribution, observed in the field of a polariscope and photographed. **Results:** All laminated aligners demonstrated mild stress to laterals and moderate stress to centrals. The number and proximity of fringes associated with the thick (0.75mm) and medium laminated (0.50mm) aligners demonstrated similar results. Both thick and medium laminated aligners demonstrated greater concentration and

intensity of stress than the thin laminated (0.25mm) aligner. The amount of stress outside of the maxillary laterals and centrals were minimal for all aligners tested. **Conclusions:** Results indicate that the thick (0.75mm) and medium (0.50mm) aligners produce similar stress patterns and may provide similar degrees of tooth movement. Clinicians should consider using the medium thickness laminated aligner as it may maximize positive orthodontic results while causing less supereruption than the thick laminated aligner.

Keywords: Bone, CAD/CAM, Orthodontics, Resorption and Root
See more of: New Materials
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

3285 Structural Characteristics Of Clear Aligner With Soft Inner Layer

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J. XIE, A. AVITAL, K. T. KALILI, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA

Objectives: Clear orthodontic aligners have increased popularity due to enhanced esthetics over traditional fixed orthodontic. However, clear aligner concern is stiffness causing difficulty during aligner application and localized stress to roots and associated bone.3. Inclusion of soft laminated layer in the internal aspect of the aligner may alleviate these effects. Purpose was to evaluate stresses generated with an aligner laminated with a soft inner liner compared to an aligner without the soft liner.

Methods: A Photoelastic model of a dentulous adult maxilla was fabricated using different teeth and bone simulants. The Photoelastic model was scanned and tooth numbers 8 and 9 were digitally altered and modified model was fabricated. Two types of clear aligners were fabricated from the modified model. One aligner was fabricated from polycarbonate. Another aligner was fabricated from polycarbonate

laminated with lower modulus polyurethane. The laminated and un-laminated aligners were inserted on the Photoelastic model and resulting stresses observed in the field of a polariscope and photographed. Stress data for the two aligners was analyzed using a computer graphics program to quantify stress intensity by fringe number counting.

Results: Stress distributions developed at the crestal bone between the central incisors with both aligners. To a lesser degree, stress was transferred along the roots of the lateral incisors; lower intensity seen with the laminated aligner. The overall stress was fairly similar but there was greater localized stress with the unlaminated aligner as compared to the laminated aligner which demonstrated more uniform stress patterns.

Conclusions: The stresses associated with the unlaminated aligner were of greater intensity and more localized as compared to the laminated aligner which was more uniform at the root – aligner interface. Consequently, the aligner with a soft inner layer may alleviate the problems of patient discomfort and difficulty during insertion and removal of un-laminated aligners.

Keywords: Biomaterials, Dental materials, Hardness, Interfaces and Stress
See more of: New Materials
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

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3294 Stress Patterns Generated by Laminated Aligners for Mandibular Distraction

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J.R. SCOTT, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, K. T. KALILI, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA

Objective: Class III malocclusions are associated with functional and esthetic concerns. Treatments range from surgery with risk, to conventional orthodontics with concerns of discomfort, non-hygienic and poor esthetics. Use of laminated aligners with soft internal lining has demonstrated potential for lower stress to the teeth, associated bone, greater patient comfort, and longer term force application for tooth movement. Purpose of this study was to evaluate effectiveness of anterior-sextant distraction with clear laminated aligners compared with conventional distalizer orthodontic device.

Methods: A Photoelastic model of a dentulous adult mandible was fabricated using different teeth and bone simulants with bilateral first bicuspid missing to represent recent first-bi extractions. The first appliance was the rapid canine distractor made with conventional Hyrax screws and steel bands. Second was a NuBrace laminated aligner using CAD/CAM technology. Both appliances were inserted over the Photoelastic model and resulting stresses observed in the field of the polariscope and photographed.

Stress data for the two systems was analyzed using a computer graphics program to quantify stress intensity by fringe number counting.

Results: Both Canine Distalizer and NuBrace demonstrated localized compressive stress along the mesial crestal bone and associated roots of mesial to path of tooth and bone movements and tensile stress patterns distal to path of movement. Laminated aligner demonstrated more uniform stress as compared to the conventional appliance demonstrated greater amount of stress along the brackets.

Conclusion: Laminated orthodontic appliances demonstrated more uniform stress patterns to the teeth adjacent to the extracted mandibular first premolar. In contrast, the conventional appliance demonstrated stress fringes that were more acutely localized to the teeth adjacent to the extracted mandibular first premolar. Additionally, laminated aligners may have benefits of improved oral hygiene, lower risk of allergic reactions, unwanted stress to teeth and bone, esthetics, and greater patient comfort.

Keywords: CAD/CAM, Dental materials, Physical, Polymers and Stress
See more of: New Materials
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

IADR GENERAL SESSION

SAN DIEGO, CALIFORNIA • MARCH 16-19, 2011

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2025 Forces Related to Varied Orthodontics Using Micro-Implant

Friday, March 18, 2011: 2 p.m. - 3:15 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

R. ARJANGRAVESH[1], T. RAZAVI[2], and K. T. KALILI[2], [1]School of Dentistry, University of Southern California, Los Angeles, CA, [2]University of California - Los Angeles, Los Angeles, CA

Objective: Preprosthetic orthodontics is an integral part of comprehensive oral rehabilitation. The goal of the treatment is to optimize dentofacial esthetics, improve masticatory function, and hygiene potential of prosthetic restorations. Laminated clear aligners, which allow longer term tooth movement, may be considered due to greater esthetics, hygiene, patient comfort and compliance. The purpose was to compare effectiveness of conventional molar uprighting appliance and laminated aligner, both utilizing microsurgical implant for anchorage.

Methods: Photoelastic model of dentulous adult maxilla was fabricated using teeth and bone simulants. The left second molar was mesially tilted 5 mm. PVS impression was taken and sent for conventional molar uprighting appliance designed to use micro-implant as anchorage for uprighting left second molar. Impression was sent for scan to fabricate laminated aligner using CAD/CAM technology. Laminated aligner incorporated digital tooth movement and Bracketless Anti Resorption (BAR) technique for optimum results. Photoelastic model was used to analyze stresses associated with conventional and laminated aligner appliances. The stresses were observed in the field of a polariscope and photographed.

Results: Both appliances tested produced uprighting forces to the molar. This was manifested by tensile stresses at the mesial crest and compression at the distal crest. The tensile stress intensity from the clear aligner was much higher than from the fixed appliance. There was more interaction between the distal root of the molar and the implant with the fixed appliance.

Conclusions: The results indicate that the laminated aligner may be a viable alternative to the fixed appliance tested to achieve uprighting a molar prior to prosthetic reconstruction. Clinician may benefit from laminated aligner due to no attachments required which may be invasive and tissue irritant, greater esthetics and more hygienic toward greater patient compliance.

Keywords: Biomaterials, Dental materials, Implants, Orthodontics and Prostheses
See more of: Other Dental Equipment
See more of: Dental Materials 10: Instruments and Equipment

IADR GENERAL SESSION

BARCELONA, SPAIN • JULY 14-17, 2010

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1463 Stress During Rotation with Conventional Orthodontics Using Springs

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)
Presentation Type: Poster Session

***E. HENDIFAR**, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

Complexity of rotational movements in orthodontic treatment is often associated with increased stress to root and associated bone due to the need for attachments. Although clear aligner orthodontic treatment has shown to be effective in minor tooth movement, they also may require attachments to provide additional forces necessary for rotational movement. Objective: To analyze location of stresses generated during rotational movement with conventional orthodontic NiTi Spring-bracket device. Method: A dentate maxillary Photoelastic adult model was fabricated using Pl-1, higher modulus material for the teeth, and Solithane, lower modulus material for the bone. Bracket was cemented to the distal marginal ridge of tooth #8. The orthodontic spring was attached to the bracket with load cell exerting 200 grams of force. Stresses were viewed using a Polariscope field and images were photographed. Stress analysis software was used to assess stress and intensity of fringes. Results: Stress was observed circumferentially throughout the root of tooth #8, associated crestal bone, and along the root and bone of both adjacent teeth. The number of fringes were consistent at 4-6 fringes between the CEJ and the apex on the same side as the bracket. Stress continued to diminish with increasing distance from the CEJ closest to the spring-bracket device. The fringe counts were as follows: tooth numbers 7 and 9 had 3-4 fringes, tooth numbers 6 and 10 had 2-3 fringes, and no further stress was evident beyond this range. Conclusion: This study revealed that rotational orthodontic tooth movement using a conventional spring loaded bracket device produces stress not only at the borders of the teeth and associated bone, but also circumferentially throughout the tooth-bone interface. To a lesser degree, there was stress to the adjacent teeth. Clinicians should consider the circumferential stresses during rotational movement when treatment planning to optimize root and bone health.

Keywords: Dental materials, Loading, Orthodontics, Photoelastic Model and Stress

1929 Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)
Presentation Type: Poster Session

M. DEREGHISHIAN, *T. OHEBSION, E. HENDIFAR, N. JAVDAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

Conventional fixed orthodontics routinely requires attachments for rotational movement. Clear aligners are popular due to increased patient compliance. However, clear aligners may also require attachments to achieve rotational movement. Compressible polymer "BAR" on the internal aspect of the aligner may allow rotational movement without requiring invasive and esthetically displeasing attachments.

Objective: To compare stress dissipation with time during rotational movement between conventional orthodontic spring-bracket device and clear laminated aligner with BAR.

Method: A Photoelastic model of a dentate adult maxilla was fabricated using different teeth and bone simulants. One orthodontic appliance was a NiTi spring fixed to a bracket on the distal marginal ridge of tooth #8. The second was a compressible polymer BAR fabricated using CAD/CAM technology positioned on the distal marginal ridge of tooth #9. Load cell exerted 200 grams to both appliances. Force dissipation was measured and stresses were observed using polariscope field. Stress data for spring and BAR were analyzed using computer graphic program to quantify stress intensity by fringe number counting.

Results: Spring and BAR demonstrated similar stress patterns to root and crestal bone of tooth numbers 8 and 9 with respect to number and proximity of fringes. To a lesser degree, stress was evident along root and crestal bone of lateral incisors as well. More rapid dissipation of force and lower levels of force were evident with the spring compared to BAR. At 5 minutes BAR=195gr and spring=185gr. Average force exerted by BAR=150gr, spring=110gr. Overall force was higher and more uniform with BAR compared to spring.

Conclusion: Compressible Polymer BAR demonstrated higher and longer duration of forces compared to spring. Clinical implications may include less office visits and shorter treatment time with BAR. The more uniform force may decrease root-bone resorption. Elimination of brackets allows less invasive, more hygienic, and greater esthetic orthodontic treatment.

Keywords: Biomaterials, Loading, Orthodontics, Stress and Photoelastic

3056 Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar

Friday, July 16, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)
Presentation Type: Poster Session

T. OHEBSION, *E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

Conventional orthodontics often requires brackets and springs to achieve tooth movement. As a result, clinicians often schedule monthly visits for adjustments to maintain constant but gradual force. The question is raised as to the duration of force that orthodontic appliances can exert.

Objective: To assess the duration of stress during rotational tooth movement using orthodontic aligners with a compressible polymer bar, "BAR," on the internal aspect of the aligner.

Method: An adult dentate maxilla was fabricated using Photoelastic material. The teeth were fabricated with Pl-1, a higher modulus material. Fabrication of bone was with Solithane, a lower modulus material. BAR was placed on the distal marginal ridge of tooth #9 with a load cell exerting 200 grams of force. Polariscope field was used to view the resulting stresses with time and the images were photographed. A Computer graphic program was used to analyze and quantify stress intensity by fringe number counting.

Results: Gradual force dissipation was evident within the first 5 minutes from the initial 200 grams to 195 grams. Force continued to gradually dissipate with time at each 5 minute interval. At the 90 minute mark the load dissipated to 100 grams. There was a plateau at the 135 minute mark where the load reduced to 85 grams. Photoelastic analysis demonstrated greater number and intensity of fringes along the CEJ on the distal aspect of the tooth ipsilateral to the bracket. Stress patterns within these regions continued to diminish with increasing time from onset of initial load.

Conclusion: Results of this study demonstrated that for the first 2 hours the force was maintained above 100 grams, required for tooth movement. Thereafter the forces decreased below the 100 gram mark to a plateau which indicates stabilization of the teeth. Future studies will address other orthodontic and load dissipation techniques.

Keywords: Dental materials, Loading, Orthodontics, Polymers and Stress

See more of: Polymerization Stress Development and Tooth Deflection; Tooth Stabilization
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

1464 Stress Dissipation During Rotation with Conventional Orthodontics

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)
Presentation Type: Poster Session

N. JAVDAN, *M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

Due to increased demands required during orthodontic tooth rotation, springs and brackets are often an integral component of conventional orthodontic treatment. As a result, clinicians often schedule monthly visits for adjustment to maintain constant but gradual force.

Objective: to assess duration of stress during rotational tooth movement using conventional orthodontic NiTi Spring-bracket device.

Method: a Photoelastic model was fabricated to represent a max adult patient. The teeth were fabricated using Pl-1, a higher modulus material and the surrounding bone was made using Solithane, a lower modulus material. Tooth # 8 consisted of an orthodontic bracket on the distal marginal ridge. The orthodontic spring was attached to the bracket with a load cell exerting 200 grams of force. Images were viewed using a Polariscope field and the resulting stresses were photographed. CAD program was used to analyze stress intensity by fringe number counting.

Results: Force decreased rapidly within the first 5 minute interval from the initial 200 grams to 185 grams. Force continued to dissipate with time at each 5 minute interval. At 30 minute mark the load dissipated to 100 grams. There was a plateau at the 45 minute mark where the load reduced to 85 grams. Photoelastic analysis demonstrated increase in both concentration and intensity of stress along the crestal alveolar bone on the distal aspect of tooth #8 ipsilateral to the bracket.

Conclusion: This study revealed that there is a rapid dissipation of force from the spring during the first 5 minutes. As a result, clinician should consider scheduling patient appointments at shorter time intervals to optimize forces being exerted by spring loaded device. Future study should consider examining the increase amount of loads at initial phase and its correlation with potential root and bone resorption.

Keywords: Dental materials, Loading, Orthodontics, Polymers and Stress

See more of: Metals: Orthodontic Alloys
See more of: Dental Materials 8: Metal-based Materials

3284 Effect of Clear Orthodontic Aligner Thickness on Stress Production

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J. PACK[1]*, P. NIKNAEM*[1]*, K. T. KALILI*[2]*, I. NISHIMURA*[3]*, and A. CAPUTO*[4]*,* [1]*School of Dentistry, University of California - Los Angeles, Los Angeles, CA,* [2]*Dentistry, University of California - Los Angeles, Los Angeles, CA,* [3]*Div. of Advanced Prosthodontics, University of California - Los Angeles, Los Angeles, CA,* [4]*University of California - Los Angeles, Santa Monica, CA*

Objectives: Clear Orthodontic Aligners are preferred by patients due to improved esthetics, hygiene, and removability. These aligners have increased marketability since readily placed by both general dentists and orthodontists as compared to traditional appliances. Research reveals compressible internal liners improve patient comfort, prolong tooth movement, and minimize local stress to teeth and bone. Since clear aligners prevent full intercuspation the risk of super eruption exists. The purpose of this study was to evaluate stress produced by aligners of varying thicknesses. **Methods:** “Unaltered” Photoelastic model of dentulous adult maxilla was fabricated using different teeth and bone simulants. PVS impression was taken of the unaltered model for CT scan and an “altered” model was fabricated using CAD/CAM technology after making the following lingual movements: Maxillary lateral incisors 0.3mm and maxillary central incisors 0.6mm. Thick laminated aligner (0.75mm), medium laminated aligner (0.50mm), and thin laminated aligner (0.25mm) were fabricated from the digitally altered model. The two aligners were inserted over the Photoelastic model to assess stress distribution, observed in the field of a polariscope and photographed. **Results:** All laminated aligners demonstrated mild stress to laterals and moderate stress to centrals. The number and proximity of fringes associated with the thick (0.75mm) and medium laminated (0.50mm) aligners demonstrated similar results. Both thick and medium laminated aligners demonstrated greater concentration and intensity of stress than the thin laminated (0.25mm) aligner. The amount of stress outside of the maxillary laterals and centrals were minimal for all aligners tested. **Conclusions:** Results indicate that the thick (0.75mm) and medium (0.50mm) aligners produce similar stress patterns and may provide similar degrees of tooth movement. Clinicians should consider using the medium thickness laminated aligner as it may maximize positive orthodontic results while causing less supereruption than the thick laminated aligner.

Keywords: Bone, CAD/CAM, Orthodontics, Resorption and Root

See more of: New Materials
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

1939 Duration of Force with Laminated and Unlaminated Orthodontic Aligners

Friday, April 3, 2009: 2 p.m. - 3:15 p.m.
Location: Exhibit Hall D (Miami Beach Convention Center)

P. NASIBI, *K. T. KALILI, J. FAHR, P. PNAMIRANIAN, A. CAPUTO, and K. RUIZ, University of California - Los Angeles, Los Angeles, CA*

Objective: Orthodontic aligners have increased popularity due to enhanced esthetics and ease of application by both general clinicians and specialists. Studies have demonstrated that aligners with lower modulus internal lining generate less localized stress to teeth and bone. Additional study concluded optimum aligner thickness for orthodontic movement is 0.5mm. The purpose of this study was to assess duration of force application with laminated and unlaminated orthodontic aligners.

Methods: Photoelastic model of dentulous adult maxilla was fabricated using different teeth and bone simulants. A PVS impression was taken and scanned for digital analysis. Three unaltered models were fabricated from the scan using CAD/CAM technology to represent the Photoelastic model. An altered model was also fabricated by adjusting the original digital file incorporating the following lingual tooth movements: 0.2mm laterals and 0.6mm centrals. Laminated and unlaminated aligners 0.5mm thick were fabricated from altered model. The aligners were inserted over the Photoelastic model to assess stress distribution observed in the field of a polariscope. Thereafter, the aligners were inserted over the unaltered model to assess force degradation. The aligners were removed and reinserted after relaxing for a week. This procedure was repeated four times.

Results: Both aligners demonstrated mild stress to laterals and moderate stress to centrals. Unlaminated aligner demonstrated diminished stress after 2 weeks. Laminated aligner maintained stress concentration and intensity throughout the 4 week duration. The amount of stress outside of the maxillary laterals and centrals were minimal for both aligners tested.

Conclusion: Results indicate potential for greater degree and longer duration of tooth movement by using the laminated aligner with the lower modulus internal lining. The results indicate that fewer aligners and, consequentially, fewer dental visits may be required to achieve similar results using laminated aligners compared with unlaminated aligners.

See more of: Orthodontic Materials and Techniques
See more of: Dental Materials 9: Other Materials - Chemistry, Properties and Performance
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Paper: Stresses Generated from Orthodontic Options USING Micro-Implant (IADR/AADR/CADR 87th General Session and Exhibition (April 1-4, 2009))

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3574 Stresses Generated from Orthodontic Options USING Micro-Implant

Saturday, April 4, 2009: 1:45 p.m. - 3 p.m.
Location: Exhibit Hall D (Miami Beach Convention Center)

J. FAHR, *K. T. KALILI, P. NASIBI, I. NISHIMURA, A. CAPUTO, and V. CHENG, University of California - Los Angeles, Los Angeles, CA*

Objective: Pre-prosthetic orthodontics is commonly used to enhance bony architecture, minimize tooth cutting and optimize resistance-retention prior to prosthetics. Laminated clear aligners, which allow longer term tooth movement, may be considered due to greater esthetics and patient comfort. The purpose was to compare effectiveness of conventional molar uprighting appliance and laminated aligner, both utilizing microsurgical implant for anchorage.

Methods: Photoelastic model of dentulous adult maxilla was fabricated using teeth and bone simulants. The left second molar was mesially tilted 4 mm. PVS impression was taken and sent for conventional molar uprighting appliance designed to use micro-implant as anchorage for uprighting left second molar. Impression was sent for scan to fabricate laminated aligner using CAD/CAM technology. Laminated aligner incorporated digital tooth movement and Bracketless Anti Resorption (BAR) technique for optimum results. Photoelastic model was used to analyze stresses associated with conventional and laminated aligner appliances. The stresses were observed in the field of a polariscope and photographed.

Results: Both appliances tested produced uprighting forces to the molar. This was manifested by tensile stresses at the mesial crest and compression at the distal crest. The tensile stress intensity from the clear aligner was much higher than from the fixed appliance. There was more interaction between the distal root of the molar and the implant with the fixed appliance. .

Conclusions: The results indicate that the laminated aligner may be a viable alternative to the fixed appliance tested to achieve uprighting a molar prior to prosthetic reconstruction. Clinician may benefit from laminated aligner due to no attachments required which may be invasive and tissue irritant, greater esthetics and more hygienic toward greater patient compliance.

See more of: Tooth Eruption, TMJ, Malocclusion, Implants, Fixatives, Decision-making
See more of: Craniofacial Biology

3285 Structural Characteristics Of Clear Aligner With Soft Inner Layer

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J. XIE, *A. AVITAL, K. T. KALILI, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA*

Objectives: Clear orthodontic aligners have increased popularity due to enhanced esthetics over traditional fixed orthodontic. However, clear aligner concern is stiffness causing difficulty during aligner application and localized stress to roots and associated bone.3. Inclusion of soft laminated layer in the internal aspect of the aligner may alleviate these effects. Purpose was to evaluate stresses generated with an aligner laminated with a soft inner liner compared to an aligner without the soft liner.

Methods: A Photoelastic model of a dentulous adult maxilla was fabricated using different teeth and bone simulants. The Photoelastic model was scanned and tooth numbers 8 and 9 were digitally altered and modified model was fabricated. Two types of clear aligners were fabricated from the modified model. One aligner was fabricated from polycarbonate. Another aligner was fabricated from polycarbonate laminated with lower modulus polyurethane. The laminated and un-laminated aligners were inserted on the Photoelastic model and resulting stresses observed in the field of a polariscope and photographed. Stress data for the two aligners was analyzed using a computer graphics program to quantify stress intensity by fringe number counting.

Results: Stress distributions developed at the crestal bone between the central incisors with both aligners. To a lesser degree, stress was transferred along the roots of the lateral incisors; lower intensity seen with the laminated aligner. The overall stress was fairly similar but there was greater localized stress with the unlaminated aligner as compared to the laminated aligner which demonstrated more uniform stress patterns.

Conclusions: The stresses associated with the unlaminated aligner were of greater intensity and more localized as compared to the laminated aligner which was more uniform at the root – aligner interface. Consequently, the aligner with a soft inner layer may alleviate the problems of patient discomfort and difficulty during insertion and removal of un-laminated aligners.

Keywords: Biomaterials, Dental materials, Hardness, Interfaces and Stress

See more of: New Materials
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

3294 Stress Patterns Generated by Laminated Aligners for Mandibular Distraction

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J.R. SCOTT, *School of Dentistry, University of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, K. T. KALILI, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA*

Objective: Class III malocclusions are associated with functional and esthetic concerns. Treatments range from surgery with risk, to conventional orthodontics with concerns of discomfort, non-hygienic and poor esthetics. Use of laminated aligners with soft internal lining has demonstrated potential for lower stress to the teeth, associated bone, greater patient comfort, and longer term force application for tooth movement. Purpose of this study was to evaluate effectiveness of anterior-sextant distraction with clear laminated aligners compared with conventional distalizer orthodontic device.

Methods: A Photoelastic model of a dentulous adult mandible was fabricated using different teeth and bone simulants with bilateral first bicuspid missing to represent recent first-bi extractions. The first appliance was the rapid canine distractor made with conventional Hyrax screws and steel bands. Second was a NuBrace laminated aligner using CAD/CAM technology. Both appliances were inserted over the Photoelastic model and resulting stresses observed in the field of the polariscope and photographed. Stress data for the two systems was analyzed using a computer graphics program to quantify stress intensity by fringe number counting.

Results: Both Canine Distalizer and NuBrace demonstrated localized compressive stress along the mesial crestal bone and associated roots of mesial to path of tooth and bone movements and tensile stress patterns distal to path of movement. Laminated aligner demonstrated more uniform stress as compared to the conventional appliance demonstrated greater amount of stress along the brackets.

Conclusion: Laminated orthodontic appliances demonstrated more uniform stress patterns to the teeth adjacent to the extracted mandibular first premolar. In contrast, the conventional appliance demonstrated stress fringes that were more acutely localized to the teeth adjacent to the extracted mandibular first premolar. Additionally, laminated aligners may have benefits of improved oral hygiene, lower risk of allergic reactions, unwanted stress to teeth and bone, esthetics, and greater patient comfort.

Keywords: CAD/CAM, Dental materials, Physical, Polymers and Stress

See more of: New Materials
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

2261 Stress Generated by Laminated Aligners For Class-III Mandibular Distraction

Friday, April 3, 2009: 2 p.m. - 3:15 p.m.
Location: Exhibit Hall D (Miami Beach Convention Center)

E. LAI, *K. T. KALILI, A. CAPUTO, T. DARAIE, and K. PORTER, University of California - Los Angeles, Los Angeles, CA*

Objective: Class III malocclusions are associated with functional and esthetic concerns. Treatments range from surgery with risk, to conventional orthodontics, to concerns of patient discomfort, hygiene and esthetics. Use of laminated clear aligners with soft internal lining has demonstrated potential for lower stress to the teeth, associated bone, greater patient comfort, and longer term force application for tooth movement. Purpose of this study was to evaluate effectiveness of anterior-sextant distraction with clear laminated aligners compared with conventional distalizer orthodontic device.

Methods: A Photoelastic model of a dentulous adult mandible was fabricated using different teeth and bone simulants with bilateral first bicuspid missing to represent recent first-bi extractions. The first appliance was the rapid canine distractor made with conventional Hyrax screws and steel bands. Second was a NuBrace laminated aligner using CAD/CAM technology. Both appliances were inserted over the Photoelastic model and resulting stresses observed in the field of the polariscope and photographed. Stress data for the two systems was analyzed using a computer graphics program to quantify stress intensity by fringe number counting.

Results: Both Canine Distalizer and laminated aligner demonstrated localized compressive stress along the mesial crestal bone and associated roots of mesial to path of tooth and bone movements and tensile stress patterns distal to path of movement. Laminated aligner demonstrated more uniform stress as compared to the conventional appliance demonstrated greater amount of stress along the brackets.

Conclusion: Both conventional and laminated orthodontic appliances demonstrated similar stress patterns during anterior sextant distraction. The laminated aligners may have benefits where ease of hygiene, lower risk of allergic reactions, unwanted stress to teeth and bone outside of the region, esthetics, and or greater patient comfort are mandated.

See more of: Occlusion, Mastication, Tooth Movement
See more of: Craniofacial Biology
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2025 Forces Related to Varied Orthodontics Using Micro-Implant

Friday, March 18, 2011: 2 p.m. - 3:15 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

R. ARJANGRAVESH[1], *T. RAZAVI*[2], *and K. T. KALILI*[2], [1]*School of Dentistry, University of Southern California, Los Angeles, CA,* [2]*University of California - Los Angeles, Los Angeles, CA*

Objective: Preprosthetic orthodontics is an integral part of comprehensive oral rehabilitation. The goal of the treatment is to optimize dentofacial esthetics, improve masticatory function, and hygiene potential of prosthetic restorations. Laminated clear aligners, which allow longer term tooth movement, may be considered due to greater esthetics, hygiene, patient comfort and compliance. The purpose was to compare effectiveness of conventional molar uprighting appliance and laminated aligner, both utilizing microsurgical implant for anchorage.

Methods: Photoelastic model of dentulous adult maxilla was fabricated using teeth and bone simulants. The left second molar was mesially tilted 5 mm. PVS impression was taken and sent for conventional molar uprighting appliance designed to use micro-implant as anchorage for uprighting left second molar. Impression was sent for scan to fabricate laminated aligner using CAD/CAM technology. Laminated aligner incorporated digital tooth movement and Bracketless Anti Resorption (BAR) technique for optimum results. Photoelastic model was used to analyze stresses associated with conventional and laminated aligner appliances. The stresses were observed in the field of a polariscope and photographed.

Results: Both appliances tested produced uprighting forces to the molar. This was manifested by tensile stresses at the mesial crest and compression at the distal crest. The tensile stress intensity from the clear aligner was much higher than from the fixed appliance. There was more interaction between the distal root of the molar and the implant with the fixed appliance.

Conclusions: The results indicate that the laminated aligner may be a viable alternative to the fixed appliance tested to achieve uprighting a molar prior to prosthetic reconstruction. Clinician may benefit from laminated aligner due to no attachments required which may be invasive and tissue irritant, greater esthetics and more hygienic toward greater patient compliance.

Keywords: Biomaterials, Dental materials, Implants, Orthodontics and Prostheses

See more of: Other Dental Equipment
See more of: Dental Materials 10: Instruments and Equipment

918 Effect of Orthodontic Aligner Laminate Thickness on Stress

Thursday, April 2, 2009: 2 p.m. - 3:15 p.m.
Location: Exhibit Hall D (Miami Beach Convention Center)

P. NAMIRANIAN, *K. T. KALILI, A. CAPUTO, and P. TURLEY, University of California - Los Angeles, Los Angeles*

Objective: Orthodontic aligners have increased popularity due to enhanced esthetics and ease of application by the general practitioner. Studies have demonstrated inclusion of soft internal liners in aligners allows less localized stress to teeth and bone. Question is raised as to optimum aligner thickness required to exert sufficient load for orthodontic movement to minimize the potential risk of unwanted occlusal changes. The purpose of this study was to assess stress distribution as a function 0f laminated aligner thickness.

Methods: “Unaltered” Photoelastic model of dentulous adult maxilla was fabricated using different teeth and bone simulants. PVS impression was taken of the unaltered model for CT scan and an “altered” model was fabricated using CAD/CAM technology after making the following lingual movements: Maxillary lateral incisors 0.3mm and maxillary central incisors 0.6mm. Thick laminated aligner (1.0mm) and thin laminated aligner (0.6mm) were fabricated from the digitally altered model. The two aligners were inserted over the Photoelastic model to assess stress distribution, observed in the field of a polariscope and photographed.

Results: Both thick and thin laminated aligners demonstrated mild stress to laterals and moderate stress to centrals. However, the number and proximity of fringes associated with the thicker laminated aligner demonstrated greater concentration and intensity of stress. The amount of stress outside of the maxillary laterals and centrals was minimal for both thin and thick aligners tested.

Conclusion: Results indicate potential for greater degree of tooth movement and longer duration of tooth movement by using the thicker laminated aligner. The indicatethat faster orthodontic treatment may be achieved by using the 1mm laminated aligner as compared to the 0.6mm laminated aligner.

See more of: Orthodontic Appliances, Imaging
See more of: Craniofacial Biology
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Seq #168 **Friday, 27 June 2003**

11:00 AM-12:15 PM Svenska Massan Exhibition Hall B, Poster

Caries Preventive Therapies

* Poster files available online

1590 Fluoride Release from Orthodontic Adhesives Underneath Brackets *in vitro*
S. LUPPANAPORNLARP, S. THIRADILOK, and N. PENGLUX, Mahidol University, Bangkok, Thailand

1591 Plant Extracts Increase the Efficacy of Fluoride Dentifrices
J. SON[1], **S.J. HONG**[1], S. JEONG[1], W.K. KIM-PARK[2], and K.K. PARK[2], [1] Chonnam national university, Kwangju, South Korea, [2] Indiana University School of Dentistry, Indianapolis, USA

1592 Enhanced Enamel Fluoride Absorption for Radiation Oncology Patients using Lowered pH Mouthrinse
K. T. KALILI, A.A. CAPUTO, S. HOSSEINI, E. SUNG, and B.R. BAKER, UCLA School of Dentistry, Los Angeles, CA, USA

1593 Fluoride Concentration in the Typical Brazilian Meal and Risk of Dental Fluorosis
J.A. CURY, R.C.V. CASARIN, and Y.B.O. LIMA, Faculty of Dentistry of Piracicaba, UNICAMP, Brazil

1594 Fluoride Application using Fluoridated Toothpicks, Dental Flosses, and Interdental Brush
B. SÄRNER, P. LINGSTRÖM, and D. BIRKHED, Department of Cariology, Sahlgrenska Academy at Göteborg University, Sweden

1595 Development of Standard Fluoride Analytical Methods: Calculations of Standard Curve Raw Data
E.A. MARTINEZ MIER[1], J. MARGINEDA[2], and D.T. ZERO[1], [1] Indiana University School of Dentsitry, Indianapolis, USA, [2] Universitat Autonoma de Barcelona, Spain

1596 Caries Prevalence in Children in Endemic Fluoride Areas in South Africa
M.H. MOOLA, University Of Western Cape, Cape Town, South Africa

1597 Evaluation of a Dentifrice with Low Fluoride Concentration Using a pH-cycling Regimen
C.P. AIRES, L.M.A. TENUTA, C.C.C. RIBEIRO, and J.A. CURY, Faculty of Dentistry of Piracicaba - UNICAMP, Brazil

Back to the: Cariology Research Program

Back to the 81st General Session of the International Association for Dental Research (June 25-28, 2003)

171 Metals: Orthodontic Alloys

Thursday, July 15, 2010: 4:45 p.m.-6 p.m.
Location: Exhibit Hall (CCIB)
Session Type: Poster Session

Learning Objectives:
Describe the effects of manipulation on dental alloys for orthodontics and endodontics

1463

Stress During Rotation with Conventional Orthodontics Using Springs

__E. HENDIFAR__, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

1464

Stress Dissipation During Rotation with Conventional Orthodontics

__N. JAVDAN__, M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

1465

Forces Generated During First-Order Archwire Deflections In Self-Ligating Brackets

R.E. PESCE JR., D.R. PETERSON, and __F.A. URIBE__, University of Connecticut, Farmington, CT

1466

Force Systems Generated by Curvature and V-Bends in T-Loop Springs

__A.R. AMBROSIO__[1], S.G.F.R. CALDAS[2], M.R. GALVÃO[2], C.I.V. VIEIRA[2], A.W. MACHADO[3], R.P. MARTINS[2], and L.P. MARTINS[2], [1]Universidade Est. Paulista Julio Mesquita, Curitiba, Brazil, [2]Universidade Est. Paulista Julio Mesquita, Araraquara, Brazil, [3]Universidade Est. Paulista Julio Mesquita, Salvador, Brazil

1467

Friction of Four Clinical-Used Orthodontic Archwires in Stainless Steel Brackets

__T. WENG__[1], J. YU[1], L. WU[1], J. HSU[1], and D. LIN[2], [1]School of Dentistry, China Medical University, Taichung, Taiwan, [2]China Medical University, Taichung, Taiwan

1468

The Evaluation of Coated Brackets Friction

__C. KAO__[1], T. HUANG[1], and Y. CHEN[2], [1]School of Dentistry, Chung Shan Medical University. Dental department, Chung Shan Medical University Hospital, Taichung, Taiwan, [2]Chung Shan Medical & Dental University, Taichung, Taiwan

1469

TMA and DSC Study of the Transformation of Nickel-Titanium Wires

__M. IIJIMA__[1], M. OHTA[2], A. NAGANISHI[2], T. MURAKAMI[2], W. BRANTLEY[3], T. MUGURUMA[1], and I. MIZOGUCHI[1], [1]Health Sciences University of Hokkaido, Hokkaido, Japan, [2]Shimadzu Corporation, Kyoto, Japan, [3]Ohio State University, Columbus, OH

1470

Decreasing Ions Release and Bacterial Adhesion of Titanium-containing Orthodontic Wires

K. TUNG, Shu-Zen College of Medicine and Management, Kaohsiung County, Taiwan, J. CHANG, Cheng Hsin General Hospital, Taipei, Taiwan, V. LO, Global Fine Technology Co., Ltd, Taipei, Taiwan, Y. LIN, Chung Shan Medical University, Taichung, Taiwan, and __H. HUANG__, National Yang-Ming University, Taipei, Taiwan

See more of: Dental Materials 8: Metal-based Materials

12:30 PM-2:30 PM Hawaii Convention Center 322-A, Oral

Dentifrices

Chairpersons: A.A. ADEWAKUN and B.D. EDEN

4027	12:30 PM	Clinical Evaluation on Extrinsic Stain Prevention of a Commercial Dentifrice **K. FUJISAWA**[1], S. KAJIWARA[2], S. TANII[1], and Y. NOMURA[1], [1]SUNSTAR INC, Product Development Dept, Osaka, Japan, [2]Sunstar Foundation For Dental Health Promotion, Toyonaka, Japan
4028	12:45 PM	Removal of Tooth Stain by Bicarbonate, Calcium, and Phosphate-Containing Dentifrice M.S. PUTT[1], **J.L. MILLEMAN**[1], K.R. MILLEMAN[1], C.J. KLEBER[1], and A. GHASSEMI[2], [1]University Park Research Center, Fort Wayne, IN, USA, [2]Church & Dwight Company, Inc, Princeton, NJ, USA
4029	1:00 PM	Morphology of in Vivo Salivary Pellicles after Exposure to Dentifrices **H.C. VAN DER MEI**[1], D. WHITE[2], A.H. DIJKMAN[1], J. DE VRIES[1], and H.J. BUSSCHER[1], [1]University of Groningen, Netherlands, [2]Procter & Gamble Co, Mason, OH, USA
4030	1:15 PM	Relationship of Dentin and Enamel Abrasion from Dentifrices **B.R. SCHEMEHORN**, Indiana University School of Dentistry, Oral Health Research Institute, Indianapolis, USA
4031	1:30 PM	Clinical Efficacy of a Tooth Cleaning Tablet **H. JENTSCH**[1], A. TAMBURLINI[2], and E. BEETKE[2], [1]University of Leipzig, Germany, [2]University of Rostock, Germany
4032	1:45 PM	A new in vitro method for determining toothpaste abrasivity **M.J. PICKLES**, UNILEVER ORAL CARE, Bebington, Wirral, United Kingdom, and A. JOINER, UNILEVER ORAL CARE, Bebington, Wirral, United Kingdom
4033	2:00 PM	Fluoride Absorption by Enamel from Toothpaste in Lowered pH Environment **K. T. KALILI**[1], A.A. CAPUTO[1], D. NATHANSON[2], S. HOSSEINI[1], E. SUNG[1], and B. BAKER[1], [1]UCLA School of Dentistry, Los Angeles, CA, USA, [2]Boston University, USA
4034	2:15 PM	Tooth Whitening Efficacy of a New Dentifrice **A. KAKAR**[1], K. RUSTOGI[2], M. PETRONE[2], P. CHAKNIS[2], B. STEWART[2], and Y.P. ZHANG[2], [1]Advanced Dental Care Center,

New Delhi, India, [2]Colgate Palmolive Company / Piscataway, NJ, USA

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3294 STRESS PATTERNS GENERATED BY LAMINATED ALIGNERS FOR MANDIBULAR DISTRACTION

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J.R. SCOTT, *School of Dentistry, University of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, K. T. KALILI, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA*

Objective: Class III malocclusions are associated with functional and esthetic concerns. Treatments range from surgery with risk, to conventional orthodontics with concerns of discomfort, non-hygienic and poor esthetics. Use of laminated aligners with soft internal lining has demonstrated potential for lower stress to the teeth, associated bone, greater patient comfort, and longer term force application for tooth movement. Purpose of this study was to evaluate effectiveness of anterior-sextant distraction with clear laminated aligners compared with conventional distalizer orthodontic device.

Methods: A Photoelastic model of a dentulous adult mandible was fabricated using different teeth and bone simulants with bilateral first bicuspid missing to represent recent first-bi extractions. The first appliance was the rapid canine distractor made with conventional Hyrax screws and steel bands. Second was a NuBrace laminated aligner using CAD/CAM technology. Both appliances were inserted over the Photoelastic model and resulting stresses observed in the field of the polariscope and photographed. Stress data for the two systems was analyzed using a computer graphics program to quantify stress intensity by fringe number counting.

Results: Both Canine Distalizer and NuBrace demonstrated localized compressive stress along the mesial crestal bone and associated roots of mesial to path of tooth and bone movements and tensile stress patterns distal to path of movement. Laminated aligner demonstrated more uniform stress as compared to the conventional appliance demonstrated greater amount of stress along the brackets.

Conclusion: Laminated orthodontic appliances demonstrated more uniform stress patterns to the teeth adjacent to the extracted mandibular first premolar. In contrast, the conventional appliance demonstrated stress fringes that were more acutely localized to the teeth adjacent to the extracted mandibular first premolar. Additionally,

laminated aligners may have benefits of improved oral hygiene, lower risk of allergic reactions, unwanted stress to teeth and bone, esthetics, and greater patient comfort.

Keywords: CAD/CAM, Dental materials, Physical, Polymers and Stress

3284 EFFECT OF CLEAR ORTHODONTIC ALIGNER THICKNESS ON STRESS PRODUCTION

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J. PACK[1], *P. NIKNAEM*[1], *K. T. KALILI*[2], *I. NISHIMURA*[3], *and A. CAPUTO*[4], [1]*School of Dentistry, University of California - Los Angeles, Los Angeles, CA,* [2]*Dentistry, University of California - Los Angeles, Los Angeles, CA,* [3]*Div. of Advanced Prosthodontics, University of California - Los Angeles, Los Angeles, CA,* [4]*University of California - Los Angeles, Santa Monica, CA*

Objectives: Clear Orthodontic Aligners are preferred by patients due to improved esthetics, hygiene, and removability. These aligners have increased marketability since readily placed by both general dentists and orthodontists as compared to traditional appliances. Research reveals compressible internal liners improve patient comfort, prolong tooth movement, and minimize local stress to teeth and bone. Since clear aligners prevent full intercuspation the risk of super eruption exists. The purpose of this study was to evaluate stress produced by aligners of varying thicknesses. **Methods:** "Unaltered" Photoelastic model of dentulous adult maxilla was fabricated using different teeth and bone simulants. PVS impression was taken of the unaltered model for CT scan and an "altered" model was fabricated using CAD/CAM technology after making the following lingual movements: Maxillary lateral incisors 0.3mm and maxillary central incisors 0.6mm. Thick laminated aligner (0.75mm), medium laminated aligner (0.50mm), and thin laminated aligner (0.25mm) were fabricated from the digitally altered model. The two aligners were inserted over the Photoelastic model to assess stress distribution, observed in the field of a polariscope and photographed. **Results:** All laminated aligners demonstrated mild stress to laterals and moderate stress to centrals. The number and proximity of fringes associated with the thick (0.75mm) and medium laminated (0.50mm) aligners demonstrated similar results. Both thick and medium laminated aligners demonstrated greater concentration and intensity of stress than the thin laminated (0.25mm) aligner. The amount of stress outside of the maxillary laterals and centrals were minimal for all aligners tested. **Conclusions:** Results indicate that the thick (0.75mm) and medium (0.50mm) aligners produce similar stress patterns and may provide similar degrees of tooth movement. Clinicians should consider using the medium thickness laminated aligner as it may maximize positive orthodontic results while causing less supereruption than the thick laminated aligner.

Keywords: Bone, CAD/CAM, Orthodontics, Resorption and Root

See more of: New Materials
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

3285 STRUCTURAL CHARACTERISTICS OF CLEAR ALIGNER WITH SOFT INNER LAYER

Saturday, March 19, 2011: 1:45 p.m. - 3 p.m.
Location: Hall C (San Diego Convention Center)
Presentation Type: Poster Session

J. XIE, *A. AVITAL, K. T. KALILI, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA*

Objectives: Clear orthodontic aligners have increased popularity due to enhanced esthetics over traditional fixed orthodontic. However, clear aligner concern is stiffness causing difficulty during aligner application and localized stress to roots and associated bone.3. Inclusion of soft laminated layer in the internal aspect of the aligner may alleviate these effects. Purpose was to evaluate stresses generated with an aligner laminated with a soft inner liner compared to an aligner without the soft liner.

Methods: A Photoelastic model of a dentulous adult maxilla was fabricated using different teeth and bone simulants. The Photoelastic model was scanned and tooth numbers 8 and 9 were digitally altered and modified model was fabricated. Two types of clear aligners were fabricated from the modified model. One aligner was fabricated from polycarbonate. Another aligner was fabricated from polycarbonate laminated with lower modulus polyurethane. The laminated and un-laminated aligners were inserted on the Photoelastic model and resulting stresses observed in the field of a polariscope and photographed. Stress data for the two aligners was analyzed using a computer graphics program to quantify stress intensity by fringe number counting.

Results: Stress distributions developed at the crestal bone between the central incisors with both aligners. To a lesser degree, stress was transferred along the roots of the lateral incisors; lower intensity seen with the laminated aligner. The overall stress was fairly similar but there was greater localized stress with the unlaminated aligner as compared to the laminated aligner which demonstrated more uniform stress patterns.

Conclusions: The stresses associated with the unlaminated aligner were of greater intensity and more localized as compared to the laminated aligner which was more uniform at the root – aligner interface. Consequently, the aligner with a soft inner layer may alleviate the problems of patient discomfort and difficulty during insertion and removal of un-laminated aligners.

Keywords: Biomaterials, Dental materials, Hardness, Interfaces and Stress

See more of: New Materials

1463 STRESS DURING ROTATION WITH CONVENTIONAL ORTHODONTICS USING SPRINGS

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.

Location: Exhibit Hall (CCIB)

E. HENDIFAR, *N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

Complexity of rotational movements in orthodontic treatment is often associated with increased stress to root and associated bone due to the need for attachments. Although clear aligner orthodontic treatment has shown to be effective in minor tooth movement, they also may require attachments to provide additional forces necessary for rotational movement. Objective: To analyze location of stresses generated during rotational movement with conventional orthodontic NiTi Spring-bracket device. Method: A dentate maxillary Photoelastic adult model was fabricated using Pl-1, higher modulus material for the teeth, and Solithane, lower modulus material for the bone. Bracket was cemented to the distal marginal ridge of tooth #8. The orthodontic spring was attached to the bracket with load cell exerting 200 grams of force. Stresses were viewed using a Polariscope field and images were photographed. Stress analysis software was used to assess stress and intensity of fringes. Results: Stress was observed circumferentially throughout the root of tooth #8, associated crestal bone, and along the root and bone of both adjacent teeth. The number of fringes were consistent at 4-6 fringes between the CEJ and the apex on the same side as the bracket. Stress continued to diminish with increasing distance from the CEJ closest to the spring-bracket device. The fringe counts were as follows: tooth numbers 7 and 9 had 3-4 fringes, tooth numbers 6 and 10 had 2-3 fringes, and no further stress was evident beyond this range. Conclusion: This study revealed that rotational orthodontic tooth movement using a conventional spring loaded bracket device produces stress not only at the borders of the teeth and associated bone, but also circumferentially throughout the tooth-bone interface. To a lesser degree, there was stress to the adjacent teeth. Clinicians should consider the circumferential stresses during rotational movement when treatment planning to optimize root and bone health.

See more of: Metals: Orthodontic Alloys
See more of: Dental Materials 8: Metal-based Materials

248 Other Dental Equipment

Friday, March 18, 2011: 2 p.m.-3:15 p.m.
Hall C (San Diego Convention Center)
2024

Comparison of Methodologies Assessing Availability of CPC in Mouthwashes
G. SZEWCZYK, L.M. SCHAEFFER-KORBYLO, J. NESTA, L.S. ARVANITIDOU, L. DU-THUMM, and D. CUMMINS, Colgate-Palmolive Company, Piscataway, NJ
2025

Forces Related to Varied Orthodontics Using Micro-Implant
R. ARJANGRAVESH[1], T. RAZAVI[2], and K. T. KALILI[2], [1]School of Dentistry, University of Southern California, Los Angeles, CA, [2]University of California - Los Angeles, Los Angeles, CA
2026

Short-term Effect of Low Intensity Pulsed Ultrasound on Orthodontic Movement
S. AL-DAGHREER[1], C. SCURTESCU[2], and T. EL-BIALY[1], [1]Dentistry/ Orthodontics, University of Alberta, Edmonton, AB, Canada, [2]University of Alberta, Edmonton, AB, Canada
PDF file
2027

Novelty playful device coating syringe / needle in pediatric dentistry
M.A.H. MENEZES-OLIVEIRA, Department of Pediatric Dentistry, University of Uberaba, Uberaba, Brazil, and F.C.H.D. MENEZES, University of Uberaba, Uberaba - Minas Gerais, Brazil
2028

Measurements of Elecromagnetic Waves of Dental Devices
R. NHAN, Department of Comprehensive Dentistry & Biomaterials, Louisiana State University, New Orleans, LA, and **A. RIPPS**, School of Dentistry, Louisiana State University, New Orleans, LA
2029

Validation of a Novel Artificial Mouth for Measuring In-Vitro Wear
J.-M. MANOLAKIS, N.C. LAWSON, P. BECK, L. RAMP, D. CAKIR, and J. BURGESS, School of Dentistry, University of Alabama at Birmingham, Birmingham, AL
See more of: Dental Materials 10: Instruments and Equipment
<< Previous Session | Next Session >>

1929 DISSIPATION OF FORCE USING ORTHODONTIC SPRING AND COMPRESSIBLE POLYMER BAR

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)

M. DEREGHISHIAN*, T. OHEBSION, E. HENDIFAR, N. JAVDAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

Conventional fixed orthodontics routinely requires attachments for rotational movement. Clear aligners are popular due to increased patient compliance. However, clear aligners may also require attachments to achieve rotational movement. Compressible polymer "BAR" on the internal aspect of the aligner may allow rotational movement without requiring invasive and esthetically displeasing attachments.

Objective: To compare stress dissipation with time during rotational movement between conventional orthodontic spring-bracket device and clear laminated aligner with BAR.

Method: A Photoelastic model of a dentate adult maxilla was fabricated using different teeth and bone simulants. One orthodontic appliance was a NiTi spring fixed to a bracket on the distal marginal ridge of tooth #8. The second was a compressible polymer BAR fabricated using CAD/CAM technology positioned on the distal marginal ridge of tooth #9. Load cell exerted 200 grams to both appliances. Force dissipation was measured and stresses were observed using polariscope field. Stress data for spring and BAR were analyzed using computer graphic program to quantify stress intensity by fringe number counting.

Results: Spring and BAR demonstrated similar stress patterns to root and crestal bone of tooth numbers 8 and 9 with respect to number and proximity of fringes. To a lesser degree, stress was evident along root and crestal bone of lateral incisors as well. More rapid dissipation of force and lower levels of force were evident with the spring compared to BAR. At 5 minutes BAR=195gr and spring=185gr. Average force exerted by BAR=150gr, spring=110gr. Overall force was higher and more uniform with BAR compared to spring.

Conclusion: Compressible Polymer BAR demonstrated higher and longer duration of forces compared to spring. Clinical implications may include less office visits and shorter treatment time with BAR. The more uniform force may decrease root-bone resorption. Elimination of brackets allows less invasive, more hygienic, and greater esthetic orthodontic treatment.

See more of: Clinical Orthodontics – Treatment Modalities and Outcomes
See more of: Craniofacial Biology

3056 STRESS DISSIPATION OF ORTHODONTIC ALIGNER WITH COMPRESSIBLE POLYMER BAR

Friday, July 16, 2010: 4:45 p.m. - 6 p.m.
Location: Exhibit Hall (CCIB)

T. OHEBSION, *E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

Conventional orthodontics often requires brackets and springs to achieve tooth movement. As a result, clinicians often schedule monthly visits for adjustments to maintain constant but gradual force. The question is raised as to the duration of force that orthodontic appliances can exert.

Objective: To assess the duration of stress during rotational tooth movement using orthodontic aligners with a compressible polymer bar, "BAR," on the internal aspect of the aligner.

Method: An adult dentate maxilla was fabricated using Photoelastic material. The teeth were fabricated with Pl-1, a higher modulus material. Fabrication of bone was with Solithane, a lower modulus material. BAR was placed on the distal marginal ridge of tooth #9 with a load cell exerting 200 grams of force. Polariscope field was used to view the resulting stresses with time and the images were photographed. A Computer graphic program was used to analyze and quantify stress intensity by fringe number counting.

Results: Gradual force dissipation was evident within the first 5 minutes from the initial 200 grams to 195 grams. Force continued to gradually dissipate with time at each 5 minute interval. At the 90 minute mark the load dissipated to 100 grams. There was a plateau at the 135 minute mark where the load reduced to 85 grams. Photoelastic analysis demonstrated greater number and intensity of fringes along the CEJ on the distal aspect of the tooth ipsilateral to the bracket. Stress patterns within these regions continued to diminish with increasing time from onset of initial load.

Conclusion: Results of this study demonstrated that for the first 2 hours the force was maintained above 100 grams, required for tooth movement. Thereafter the forces decreased below the 100 gram mark to a plateau which indicates stabilization of the teeth. Future studies will address other orthodontic and load dissipation techniques.

See more of: Polymerization Stress Development and Tooth Deflection; Tooth Stabilization
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

1464 STRESS DISSIPATION DURING ROTATION WITH CONVENTIONAL ORTHODONTICS

Thursday, July 15, 2010: 4:45 p.m. - 6 p.m.

Location: Exhibit Hall (CCIB)

N. JAVDAN*, M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

Due to increased demands required during orthodontic tooth rotation, springs and brackets are often an integral component of conventional orthodontic treatment. As a result, clinicians often schedule monthly visits for adjustment to maintain constant but gradual force.

Objective: to assess duration of stress during rotational tooth movement using conventional orthodontic NiTi Spring-bracket device.

Method: a Photoelastic model was fabricated to represent a max adult patient. The teeth were fabricated using Pl-1, a higher modulus material and the surrounding bone was made using Solithane, a lower modulus material. Tooth # 8 consisted of an orthodontic bracket on the distal marginal ridge. The orthodontic spring was attached to the bracket with a load cell exerting 200 grams of force. Images were viewed using a Polariscope field and the resulting stresses were photographed. CAD program was used to analyze stress intensity by fringe number counting.

Results: Force decreased rapidly within the first 5 minute interval from the initial 200 grams to 185 grams. Force continued to dissipate with time at each 5 minute interval. At 30 minute mark the load dissipated to 100 grams. There was a plateau at the 45 minute mark where the load reduced to 85 grams. Photoelastic analysis demonstrated increase in both concentration and intensity of stress along the crestal alveolar bone on the distal aspect of tooth #8 ipsilateral to the bracket.

Conclusion: This study revealed that there is a rapid dissipation of force from the spring during the first 5 minutes. As a result, clinician should consider scheduling patient appointments at shorter time intervals to optimize forces being exerted by spring loaded device. Future study should consider examining the increase amount of loads at initial phase and its correlation with potential root and bone resorption.

See more of: Metals: Orthodontic Alloys
See more of: Dental Materials 8: Metal-based Materials

248 Other Dental Equipment

Friday, March 18, 2011: 2 p.m.-3:15 p.m.
Location: Hall C (San Diego Convention Center)
Session Type: Poster Session
1.25 CE hours

Learning Objectives:
Learn about the latest advances in mouthrinses, ultrasonics, and wear testing

2024

Comparison of Methodologies Assessing Availability of CPC in Mouthwashes

G. SZEWCZYK, *L.M. SCHAEFFER-KORBYLO, J. NESTA, L.S. ARVANITIDOU, L. DU-THUMM, and D. CUMMINS, Colgate-Palmolive Company, Piscataway, NJ*

2025

Forces Related to Varied Orthodontics Using Micro-Implant

R. ARJANGRAVESH[1], *T. RAZAVI*[2], *and K. T. KALILI*[2], [1]*School of Dentistry, University of Southern California, Los Angeles, CA,* [2]*University of California - Los Angeles, Los Angeles, CA*

2026

Short-term Effect of Low Intensity Pulsed Ultrasound on Orthodontic Movement

S. AL-DAGHREER[1], *C. SCURTESCU*[2], *and T. EL-BIALY*[1], [1]*Dentistry/ Orthodontics, University of Alberta, Edmonton, AB, Canada,* [2]*University of Alberta, Edmonton, AB, Canada*

PDF file

2027

Novelty playful device coating syringe / needle in pediatric dentistry

M.A.H. MENEZES-OLIVEIRA, *Department of Pediatric Dentistry, University of Uberaba, Uberaba, Brazil, and F.C.H.D. MENEZES, University of Uberaba, Uberaba - Minas Gerais, Brazil*

2028

Measurements of Elecromagnetic Waves of Dental Devices

R. NHAN, Department of Comprehensive Dentistry & Biomaterials, Louisiana State University, New Orleans, LA, and ***A. RIPPS***, *School of Dentistry, Louisiana State University, New Orleans, LA*

2029

Validation of a Novel Artificial Mouth for Measuring In-Vitro Wear

J. MANOLAKIS, *N.C. LAWSON, P. BECK, L. RAMP, D. CAKIR, and J. BURGESS, School of Dentistry, University of Alabama at Birmingham, Birmingham, AL*

See more of: Dental Materials 10: Instruments and Equipment

171 Metals: Orthodontic Alloys

Thursday, July 15, 2010: 4:45 p.m.-6 p.m.
Exhibit Hall (CCIB)
1463

Stress During Rotation with Conventional Orthodontics Using Springs
E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA
1464

Stress Dissipation During Rotation with Conventional Orthodontics
N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA
1465

Forces Generated During First-Order Archwire Deflections In Self-Ligating Brackets
R.E. PESCE, Jr., D.R. PETERSON, and **F.A. URIBE**, University of Connecticut, Farmington, CT
1466

Force Systems Generated by Curvature and V-Bends in T-Loop Springs
A.R. AMBROSIO[1], S.G.F.R. CALDAS[2], M.R. GALVÃO[2], C.I.V. VIEIRA[2], A.W. MACHADO[3], R.P. MARTINS[2], and L.P. MARTINS[2], [1]Universidade Est. Paulista Julio Mesquita, Curitiba, Brazil, [2]Universidade Est. Paulista Julio Mesquita, Araraquara, Brazil, [3]Universidade Est. Paulista Julio Mesquita, Salvador, Brazil
1467

Friction of Four Clinical-Used Orthodontic Archwires in Stainless Steel Brackets
T.-N. WENG[1], J.-H. YU[1], L.-C. WU[1], J.-T. HSU[1], and D.-J. LIN[2], [1]School of Dentistry, China Medical University, Taichung, Taiwan, [2]China Medical University, Taichung, Taiwan
1468

The Evaluation of Coated Brackets Friction
C.-T. KAO[1], T.-H. HUANG[1], and Y.-J. CHEN[2], [1]School of Dentistry, Chung Shan Medical University. Dental department, Chung Shan Medical University Hospital, Taichung, Taiwan, [2]Chung Shan Medical & Dental University, Taichung, Taiwan
1469

TMA and DSC Study of the Transformation of Nickel-Titanium Wires
M. IIJIMA[1], M. OHTA[2], A. NAGANISHI[2], T. MURAKAMI[2], W. BRANTLEY[3], T. MUGURUMA[1], and I. MIZOGUCHI[1], [1]Health Sciences University of Hokkaido, Hokkaido, Japan, [2]Shimadzu Corporation, Kyoto, Japan, [3]Ohio State University, Columbus, OH
1470

Decreasing Ions Release and Bacterial Adhesion of Titanium-containing Orthodontic Wires
K.-L. TUNG, Shu-Zen College of Medicine and Management, Kaohsiung County, Taiwan, J.-H. CHANG, Cheng Hsin General Hospital, Taipei, Taiwan, V. LO, Global Fine Technology Co., Ltd, Taipei, Taiwan, Y.-Y. LIN, Chung Shan Medical University, Taichung, Taiwan, and **H.-H. HUANG**, National Yang-Ming University, Taipei, Taiwan
See more of: Dental Materials 8: Metal-based Materials
<< Previous Session | Next Session >>

Seq #352 **Saturday, 12 March 2005**

2:00 PM-4:00 PM Baltimore Convention Center Exhibit Hall E-F, Poster

Abutment-Implant Analysis

3286 Compressive Strength of Three Different Implant Design Systems
J. PEDROZA, Y. TORREALBA, W. PSOTER, and A. ELIAS, University of Puerto Rico, San Juan, USA

3287 Influence of Abutment Design on Crestal Bone in Implant-tooth-supported Bridges
C.G. TOH[1], C.H. SIAR[1], D. SEIZ[2], T.B. TAIYEB-ALI[1], and S.T. ONG[1], [1]University of Malaya, Kuala Lumpur, Malaysia, [2]Johann Wolfgang Goethe University, Frankfurt, Germany

3288 Titanium Abutment Surface Roughness and Cement on Crown Retention
J. GODDERIDGE, C.M. STANFORD, and S.-C. TAN, University of Iowa, Iowa City, USA

3289 Marginal discrepancy and microfiltration in three implant.-abutment fixation systems
J. FERRÉ[1], L. GINER[1], M. CORTADA[1], M. VALIENTE[2], and A. PIATTELLI[3], [1]Universitat Internacional de Catalunya, Sant Cugat del Vallés, Spain, [2]Universitat Autónoma de Barcelona, Bellaterra, Spain, [3]University of Chieti, Italy

3290 Effect on retention of implant abutments with different heights
M. SIERRAALTA, **J. VIVAS**, and M. RAZZOOG, University of Michigan, Ann Arbor, USA

3291 Influence of abutment design on clinical status of peri-implant tissues
T.B. TAIYEB-ALI[1], C.G. TOH[1], C.H. SIAR[1], D. SEIZ[2], and S.T. ONG[1], [1]University of Malaya, Kuala Lumpur, Malaysia, [2]Johann Wolfgang Goethe University, Frankfurt, Germany

3292 Stress Generation During Torque Application to Implant Abutment Screws
K. T. KALILI, UCLA School of Dentistry, Los Angeles, CA, USA, and A. CAPUTO, UCLA School of dentistry, Los Angeles, CA, USA

3293 Precision of Various Mechanical Torque Devices and Torque Settings
K. BRAASCH, S. WOLFART, L. STEINEBRUNNER, and M. KERN, University of Kiel, Germany

3294 Loosening torques of implant/abutment connective screw systems in vitro
A. BUTKEVICA, D. NATHANSON, and R. POBER, Boston University, MA, USA

3295 Influence of cantilever forces on the deformation of Implant-Abutment

Interface
R. APONTE-WESSON[1], A. RANJITKAR[2], P. BECK[3], J. LEMONS[3], M.S. MCCRAKEN[3], and W. LACEFIELD[3], [1]University of Alabama at Birmingham, School of Dentistry, USA, [2]University of Alabama, School of Dentistry, Birmingham, USA, [3]University of Alabama at Birmingham, USA

3296 Accuracy of two implant impression splinted techniques: strain-gauge analysis
D.K. VASCONCELLOS, M.A. BOTTINO, F.P.P. LEITE, R.S. NISHIOKA, R.M. JÓIAS, and A.M.M. MESQUITA, São Paulo State University, São José dos Campos, Brazil

3297 WITHDRAWN

3298 Effects of Antirotational Design on Peri-implant Bone Stress During Preload
Y.-S. LIN[1], M.-S. LEE[2], T.-M. WANG[1], J.-S. WANG[1], and L.-D. LIN[1], [1]National Taiwan University, Taipei, Taiwan, [2]National Taiwan University, Taipei

3299 Two-year Prospective Follow-up Report on Nobel Biocare Ceramic Abutments
A.-M. HALMOY[1], K. MUSTAFA[2], E. BERG[1], and **K. ARVIDSON**[1], [1]University of Bergen, Faculty of Dentistry, Norway, [2]Karolinska Institutet, Faculty of Dentistry, Stockholm, Sweden

3300 The Effect of Restoration Height on the Implant-Abutment Connection
M. SULEIMAN[1], R. PALMER[2], and R.V. CURTIS[1], [1]King's College London, Dental Institute, United Kingdom, [2]United Medical & Dental Schools of Guy's & St. Thomas, London Bridge, London, England, Uk

Back to the: Implantology Research Program

Back to the IADR/AADR/CADR 83rd General Session (March 9-12, 2005)

220 Orthodontic Materials and Techniques

Friday, April 3, 2009: 2 p.m.-3:15 p.m.
Location: Exhibit Hall D (Miami Beach Convention Center)

1937

The orthodontic friction evaluation of TiN plating metal brackets

C.-T. KAO, *Chung Shan Medical University,Institute of oral biology and material scinence, Taichung, Taiwan, T.H. HUANG, Chung Shan Medical University, School of oral medicine, Taichung, Taiwan, and J.U. GUO, Chung Shan Medical University, Taichung, Taiwan*

1938

WITHDRAWN

1939

Duration of Force with Laminated and Unlaminated Orthodontic Aligners

P. NASIBI, *K. T. KALILI, J. FAHR, P. PNAMIRANIAN, A. CAPUTO, and K. RUIZ, University of California - Los Angeles, Los Angeles, CA*

1940

Effect of Moment on Resistance to Sliding Among Esthetic Brackets

B.T. PLISKA, *R.W. FUCHS, J.P. BEYER, and B.E. LARSON, University of Minnesota, Minneapolis, MN*

1941

Deformation characteristics influences selection of different brands of elastomeric chains

N. PATEL, *A. ARDESHNA, and T.K. VAIDYANATHAN, New Jersey Dental School - UMD, Newark, NJ*

1942

Biomechanics of Mesial Movement with Reduced Alveolar Support

T. KUSAKABE, *Hokkaido University Hospital, Sapporo, Japan, A.A. CAPUTO, University of California - Los Angeles, Los Angeles, CA, V. SHETTY, UCLA, Los Angeles, CA, and J. IIDA, Hokkaido University, Sapporo, Japan*

1943

WITHDRAWN

1944

The Essential Work of Fracture of Clear Orthodontic Retainer Materials

A. PASCUAL, *R.J. MITCHELL, C.S. BEEMAN, E.P. HICKS, and H.M. BUSH, University of Kentucky, Lexington, KY*

1945

Water acidity influence in the sorption-solubility of orthodontic adhesives

E. LOPEZ-PALACIOS, *G. SAEZ ESPINOLA, and C. ALVAREZ-GAYOSSO, Universidad Nacional Autonoma de Mexico, Mexico, D.F, Mexico*

1946

Orthodontic Bracket Modification to Inhibit Enamel Demineralization

A. TURRITTIN, *B. LARSON, and D. TANTBIROJN, University of Minnesota, Minneapolis, MN*

1947

Surface Characterization of Dental Enamel after Etching for Variable Times

M.F. ORELLANA[1], *T. NGUYEN[2], D. TEXEIRA[2], L. WATANABE[1], G.W. MARSHALL[1], and S.J. MARSHALL[1], [1]University of California San Francisco, San Francisco, CA, [2]University of California - San Francisco, San Francisco, CA*

1948

Dimensional Stability of Orthodontic Impression Materials Using Digital Model Software

D. DARSEY, *L. FULLERTON, J.D. ENGLISH, G.N. FREY, C.H. KAU, R.P. LEE, K.R. MCGRORY, and J.M. POWERS, University of Texas Dental Branch at Houston, Houston, TX*

See more of: Dental Materials 9: Other Materials - Chemistry, Properties and Performance

243 Occlusion, Mastication, Tooth Movement

Friday, April 3, 2009: 2 p.m.-3:15 p.m.
Location: Exhibit Hall D (Miami Beach Convention Center)

2259

WITHDRAWN

2260

Cranial Base Angle and Malocclusion

N. JAGDISH, V. KAILASAM, S. PADMANABHAN, and A.B. CHITHARANJAN, Shri Ramachandra Dentl College, Chennai, India

2261

Stress Generated by Laminated Aligners For Class-III Mandibular Distraction

E. LAI, K. T. KALILI, A. CAPUTO, T. DARAIE, and K. PORTER, University of California - Los Angeles, Los Angeles, CA

2262

a Novel Mouse Orthodontic Tooth Movement Model

Z. KALAJZIC, C. OLSON, J. BIBKO, X. JIANG, R. KAUR, J. CHEN, P. MAYE, D. ROWE, S. WADHWA, R. NANDA, and F. URIBE, University of Connecticut Health Center, Farmington, CT

2263

Changes in the Shape of Average Chewing Patterns over Time

J. RADKE[1], K. GENGLER[2], and N. KREY[1], [1]Bio-Research Associates Inc, Milwaukee, WI, [2]BioResearch, Inc, Milwaukee, WI

2264

WITHDRAWN

2265

The Stability of Timing within the Chewing Cycle

N. KREY, J. RADKE, and K. GENGLER, Bio-Research Associates Inc, Milwaukee, WI

2266

An Investigation into the Bite Force Production in Children

G. MOUNTAIN, K.J. TOUMBA, and D.J. WOOD, University of Leeds, Leeds, United Kingdom

2267

RANKL Expression in Corticotomy-Facilitated Tooth Movement

S.S. BALOUL, L.C. GERSTENFELD, R.S. CARVALHO, T.E. VAN DYKE, and A. KANTARCI, Boston University, Boston, MA

2268

The Effect of Vibration in Murine Tooth Movement Organ Culture

Z. KALAJZIC, E. BLAKE, F. URIBE, J. BARASZ, R. KAUR, P. MAYE, D. ADAMS, R. NANDA, and S. WADHWA, University of Connecticut Health Center, Farmington, CT

2269

Jaw Motion during Gum-Chewing in Children with Primary Dentition

H. HAYASAKI[1], I. SAITOH[2], N. KUBOTA[1], T. MARUYAMA[3], S. INOUE[4], Y. IWASE[5], C. YAMADA[1], E. INADA[1], Y. TAKEMOTO[1], A. FUKAMI[1], Y. MATSUMOTO[1], and Y. YAMASAKI[1], [1]Department of Pediatric Dentistry, Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima, Japan, [2]Department of Orthodontics, Baylor College of Dentistry, Dallas, TX, [3]baraki National College of Technology, Hitachinaka, Japan, [4]Inoue Dental Clinic, Karatsu, Japan, [5]Department of Dental Anesthesia, Anesthesia and Critical Care Center, Kagoshima University Medical and Dental Hospital, Kagoshima, Japan

2270

Characteristics of Chewing Types in Children with Primary Dentition

C. YAMADA[1], I. SAITOH[2], H. HAYASAKI[1], T. MARUYAMA[3], Y. IWASE[4], E. INADA[1], Y. TAKEMOTO[1], and Y. YAMASAKI[1], [1]Department of Pediatric Dentistry, Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima, Japan, [2]Department of Orthodontics, Baylor College of Dentistry, Dallas, TX, [3]baraki National College of Technology, Hitachinaka, Japan, [4]Department of Dental Anesthesia, Anesthesia and Critical Care Center, Kagoshima University Medical and Dental Hospital, Kagoshima, Japan

2271

How does Occlusal Function Relate to Alveolar Bone Structure?

K.-D. YEH, and T.E. POPOWICS, University of Washington, Seattle, WA

2272

Evaluation of Subjective and Objective Masticatory Performance in Colombian Children

A. DURAN, CES, Medellin, Colombia, A. WINTERGERST, National University of Mexico UNAM, Mèxico, Mexico, P.H. BUSCHANG, Texas A&M Health Science Center, Baylor College of Dentistry, Dallas, TX, and S. ROLDAN, Universidad CES, Medellin, Antioquia, Colombia

See more of: Craniofacial Biology

366 Tooth Eruption, TMJ, Malocclusion, Implants, Fixatives, Decision-making

Saturday, April 4, 2009: 1:45 p.m.-3 p.m.
Location: Exhibit Hall D (Miami Beach Convention Center)

3572

Morphological study of lingual dorsum membrane in type2 diabetes rats

F. SUWA, *M. UEMURA, and Y. TAMADA, Osaka Dental University, Osaka, Japan*

3573

RT-PCR quantification of mRNA Myosin isoforms in muscles of mdx-mice

T. GEDRANGE[1], *A. SPASSOV[1], T. GREDES[1], S. PAVLOVIC[1], F. MACK[2], H. MACK[2], and C. KUNERT-KEIL[1], [1]University of Greifswald, Greifswald, Germany, [2]Griffith University, Southport, QLD, Australia*

3574

Stresses Generated from Orthodontic Options USING Micro-Implant

J. FAHR, *K. T. KALILI, P. NASIBI, I. NISHIMURA, A. CAPUTO, and V. CHENG, University of California - Los Angeles, Los Angeles, CA*

3575

A new locus for hereditary gingival fibromatosis maps to 7q

X. YE[1], *L. SHI[2], W. YIN[2], and Z. BIAN[2], [1]Key laboratoty of Oral Biomedical Engineering of Ministry of Education, School and Hospital of Stomatology, Wuhan University, Wuhan, China, [2]Key Laboratory of Molecular Biophysics of Ministry of Education, College of Life Science and Technology and Center for Human Gen, Wuhan, China*

3576

Investigation of polymerization capacity of orthodontic composites by FTIR Spectroscopy

B. COREKCI[1], *S. MALKOC[1], B. OZTURK[2], and B. GUNDUZ[2], [1]Selcuk University Faculty of Dentistry, Konya, Turkey, [2]Selcuk Universitesi, Konya, Turkey*

3577

WITHDRAWN

3578

Identification of Genetic Predisposing Factors of Skeletal Class II Malocclusions

K. CHEN, *R.W.K. WONG, and A.B.M. RABIE, University of Hong Kong, Hong Kong SAR, China*

3579

WITHDRAWN

3580

Three-dimensional Evaluation of The Human Temporomandibular Joint

V. LOTFI, *J. HUANG, C. MCNEILL, and A.J. MILLER, University of California - San Francisco, San Francisco, CA*

3581

Isolation and Characterization of Cells in the Murine Condylar Cartilage

J. CHEN, Z. KALAJZIC, R. NANDA, D.W. ROWE, and ***S. WADHWA***, *University of Connecticut Health Center, Farmington, CT*

3582

Tenascin-C and Fibronectin Expression in Developing Mouse Mandibular Condylar Cartilage

S. SHIBATA, *and T. YOKOHAMA-TAMAKI, Health Sciences University of Hokkaido, Hokkaido, Japan*

3583

Histological study of ECRM during overeruption in rat mandibular molar

L. ZHANG, *Q. XI, J. WANG, and Z. CHEN, School and Hospital of Stomatology,Wuhan University, Wuhan, China*

3584

Gender Comparisons of Longitudinal Growth of Maxillary First Molar Roots

A.J. DOMEYER, *R.N. STALEY, and F. QIAN, University of Iowa, Iowa City, IA*

3585

FGFR2 Is Essential For The Development Of Mouse Maxillary Incisors

J.Y.F. CHANG[1], *Y. LIN[2], Y.-S.L. CHENG[1], C. QIN[1], R. D'SOUZA[1], and F. WANG[2], [1]Baylor College of Dentistry, Dallas, TX, [2]Institute of Biosciences and Technology, Houston, TX*

See more of: Craniofacial Biology

171 METALS: ORTHODONTIC ALLOYS

Thursday, July 15, 2010: 4:45 p.m.-6 p.m.
Location: Exhibit Hall (CCIB)

1463

Stress During Rotation with Conventional Orthodontics Using Springs

E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

1464

Stress Dissipation During Rotation with Conventional Orthodontics

N. JAVDAN, M. DEREGHISHIAN, T. OHEBSION, E. HENDIFAR, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA

1465

Forces Generated During First-Order Archwire Deflections In Self-Ligating Brackets

R.E. PESCE, Jr., D.R. PETERSON, and F.A. URIBE, University of Connecticut, Farmington, CT

1466

Force Systems Generated by Curvature and V-Bends in T-Loop Springs

A.R. AMBROSIO[1], S.G.F.R. CALDAS[2], M.R. GALVÃO[2], C.I.V. VIEIRA[2], A.W. MACHADO[3], R.P. MARTINS[2], and L.P. MARTINS[2], [1]Universidade Est. Paulista Julio Mesquita, Curitiba, Brazil, [2]Universidade Est. Paulista Julio Mesquita, Araraquara, Brazil, [3]Universidade Est. Paulista Julio Mesquita, Salvador, Brazil

1467

Friction of Four Clinical-Used Orthodontic Archwires in Stainless Steel Brackets

T.-N. WENG[1], J.-H. YU[1], L.-C. WU[1], J.-T. HSU[1], and D.-J. LIN[2], [1]School of Dentistry, China Medical University, Taichung, Taiwan, [2]China Medical University, Taichung, Taiwan

1468

The evaluation of coated brackets friction

C.-T. KAO[1], T.-H. HUANG[1], and Y.-J. CHEN[2], [1]School of Dentistry, Chung Shan Medical University. Dental department, Chung Shan Medical University Hospital, Taichung, Taiwan, [2]Chung Shan Medical & Dental University, Taichung, Taiwan

1469

TMA and DSC Study of the Transformation of Nickel-Titanium Wires

M. IIJIMA[1], M. OHTA[2], A. NAGANISHI[2], T. MURAKAMI[2], W. BRANTLEY[3], T. MUGURUMA[1], and I. MIZOGUCHI[1], [1]Health Sciences University of Hokkaido, Hokkaido, Japan, [2]Shimadzu Corporation, Kyoto, Japan, [3]Ohio State University, Columbus, OH

1470

Decreasing Ions Release and Bacterial Adhesion of Titanium-containing Orthodontic Wires

K.-L. TUNG, Shu-Zen College of Medicine and Management, Kaohsiung County, Taiwan, J.-H. CHANG, Cheng Hsin General Hospital, Taipei, Taiwan, V. LO, Global Fine Technology Co., Ltd, Taipei, Taiwan, Y.-Y. LIN, Chung Shan Medical University, Taichung, Taiwan, and H.-H. HUANG, National Yang-Ming University, Taipei, Taiwan

See more of: Dental Materials 8: Metal-based Materials

297 Polymerization Stress Development and Tooth Deflection; Tooth Stabilization

Friday, July 16, 2010: 4:45 p.m.-6 p.m.
Location: Exhibit Hall (CCIB)
Session Type: Poster Session

Learning Objectives:
Materials and process conditions that affect stress development

3051

Influence of Fibre Reinforcement on the Stability of Molars

S. BEER, *University of Münster, School of Dentistry, Department of Orthodontics, Münster, Germany, L. MARKOVIC, University of Witten - Herdecke, Witten, Germany, U. HEFFENTRÄGER, Private Practice, Berlin, Germany, and R. BEER, University of Witten-Herdecke, Witten, Germany*

3052

Posterior Tooth Deformation After Composite Restoration - a 3D-Finite-Element Analysis

N. MANCHOROVA-VELEVA[1], *S. VLADIMIROV*[1], *and P. YORDANOV*[2], [1]*Medical University - Plovdiv, Faculty of Dental Medicine, Department of Operative Dentistry and Endodontics, Plovdiv, Bulgaria,* [2]*Technical University - Sofia, Faculty of Mechanical Engineering, Department of Transport and Aircraft Equipment and Technologies, Plovdiv, Bulgaria*

PDF file

3053

Effect of Cavity-configuration on Induced-stresses at Cervical Resin-restorations in Periodontally-compromised-teeth

M. NIAZY, *Al-Azhar University, Cairo, Egypt, W. JAMIL, AlAzhar University, Cairo, Egypt, and M. ELASHRY, Senior Research Scientist,IBM T.J.Watson Research Lab,NY 10598,USA, Cairo, Egypt*

3054

Contraction Stresses of Low Shrinking Resin Composites

Y. KUBOTA[1], *T. YAMAMOTO*[2], *J. FERRACANE*[3], *and Y. MOMOI*[1], [1]*Tsurumi University, Yokohama, Japan,* [2]*Tsurumi University School of Dental Medicine, Yokohama, Japan,* [3]*Oregon Health & Science University, Portland, OR*

3055

Influence of Composite Polymerization Shrinkage on Cuspal Deflection: 3D FEA

E. ELDWAKHLY, *Lecturer, Fixed Prosthodontics, Faculty of Dentistry,Cairo University, Cairo, Egypt, S. JAFAR-POUR, University of Toronto, Toronto, ON, Canada, A. ELRAGI, Fayoum University, Fayoum, Egypt, and W. EL-BADRAWY, University of Toronto -, Toronto, ON, Canada*

3056

Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar

T. OHEBSION, *E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

3057

Contraction Stress and Extent of Polymerization of Flowable Composites

B. CODAN, *C.O. NAVARRA, G. MARCHESI, E. DE STEFANO DORIGO, L. BRESCHI, and M. CADENARO, University of Trieste, Trieste, Italy*

3058

Contraction Stress of Resin-Composites Assessed by Low- and High-Compliance Systems

G. MARCHESI, *B. CODAN, R. DI LENARDA, L. BRESCHI, and M. CADENARO, University of Trieste, Trieste, Italy*

3059

Maxillary Expanders Stress Generation

D.W. WHITE, *G.R. WERNER, J.M. THOMPSON, and A.A. CAPUTO, University of California - Los Angeles, Los Angeles, CA*

Presentation

3060

Photoelastic Stress Analysis of Different Types of Anterior Teeth Splints

M.B. LOPES, *K.F. SELLA, S.K. MOURA, and A. GONINI JR., University North of Parana, Londrina-PR, Brazil*

3061

Effect of Composite Type and Light Intensity on Cuspal-Deflection

S. JAFAR-POUR[1], *W. EL-BADRAWY*[2], *E. ELDWAKHLY*[3], *and D. MCCOMB*[2], [1]*University of Toronto, Toronto, ON, Canada,* [2]*University of Toronto -, Toronto, ON, Canada,* [3]*Lecturer, Fixed Prosthodontics, Faculty of Dentistry,Cairo University, Cairo, Egypt*

3062

Effect of Shrinkage Strain, Modulus, Instrument Compliance on Polymerization Stress

S. MIN, *B. LIM, and I. LEE, Seoul National University, Seoul, South Korea*

3063

Regional Shrinkage Vectors of Light-Cured Composites by Micro-CT Filler Tracing

E. CHO, *Tokyo Medical & Dental University, Tokyo, Japan, A. SADR, Global COE, International Research Center for Molecular Science in Tooth and Bone Diseases, Tokyo Medical & Dental University, Tokyo, Japan, N. INAI, Medical Office, Welfare Division, Minister's Secretariat, Tokyo, Japan, N. NANGO, Ratoc Engineering, Tokyo, Japan, and J. TAGAMI, Cariology and Operative Department, GCOE Program at TMDU, Tokyo Medical & Dental University, Tokyo, Japan*

3064

Coronal Deformation in Premolars Restored with Low-Shrink Composites

A. VERSLUIS, *D. TANTBIROJN, and R. DELONG, University of Minnesota, Minneapolis, MN*

3065

Evaluation of Low Shrinkage Flowable Composite Based on "Dimer Technology"

C. BRACHO-TROCONIS[1], *K. ESQUIBEL*[1], *J. BOULDEN*[1], *K. WALL*[2], *and M. TRUJILLO LEMON*[1], [1]*Septodont, Confi Dental Division, Louisville, CO,* [2]*Septodont, Confi Dental Division, Loiusville, CO*

3066

Cuspal Deformation during Light-Curing of Low-Shrinking Posterior Composite Restorations

R.R. CARA[1], *E. GATIN*[2], *A. DIDILESCU*[3], *R. SFEATCU*[3], *C. NICOLA*[1], *and I. PATRASCU*[3], [1]*University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania,* [2]*University of Bucharest, Faculty of Physics, Bucharest, Romania,* [3]*University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania*

3067

Comparison of Tooth Stabilization by Nylon-wire and Steel-wire Resin Splints

Z. CHI, *D. TAO, Y. WANG, and X. FENG, Department of Preventive & Pediatric Dentistry ,Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China*

3068

Cuspal Movement Associated to Different Polymerization Protocols

J.M.C. BOAVENTURA[1], *E.A. CAMPOS*[1], *G.M. CORRER*[2], *F. BARATTO-FILHO*[2], *O.B. OLIVEIRA JUNIOR*[1], *and M.F. ANDRADE*[1], [1]*Universidade Est. Paulista Julio Mesquita, Araraquara-SP, Brazil,* [2]*Positivo University, Curitiba/PR, Brazil*

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3069

Numerical Evaluation of Shrinkage Stress of Dental Composites

J. LI, H. LI, and ***A. FOK***, *Minnesota Dental Research Center for Biomat & Biomechanics, Minneapolis, MN*

3070

Mechanical Properties of Orthodontics Composite Archwires – Three-point Bending Tests

A.L.S. ALMEIDA[1], *M. HIROCE*[2], *C.N. ELIAS*[3], *and C.C.A. QUINTÃO*[2], [1]*Universidade Do Estado do Rio de Janeiro, Niterói, Brazil,* [2]*Universidade Do Estado do Rio de Janeiro, Rio de Janeiro, Brazil,* [3]*Instituto Militar de Engenharia, Rio de Janeiro, Brazil*

3071

Initial Radial Pressures Generated by Variable Shrinkage Composite Resins

M. IBRAHIM, *M. MEHTA, J. WHITWORTH, and J. MCCABE, Newcastle University, Newcastle upon Tyne, United Kingdom*

See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

115 Orthodontic Appliances, Imaging

Thursday, April 2, 2009: 2 p.m.-3:15 p.m.
Location: Exhibit Hall D (Miami Beach Convention Center)

907

Extra-Alveolar Hard and Soft Tissue Measurements by Computer Tomograghy

Y.-J. CHEN[1], C.-T. KAO[2], H.-S. LUK[1], and M.-J. SU[3], [1]Chung Shan Medical & Dental College, Taichung, Taiwan, [2]Chung Shan Medical University,Institute of oral biology and materials, Taichung, Taiwan, [3]chung Shan Medical & Dental College, Taichung, Taiwan

908

Skeletal Asymmetries in Normal Adolescents: Cone Beam Computed Tomography Analysis

D. SANDERS, P. RIGALI, F. URIBE, and R. NANDA, University of Connecticut, Farmington, CT

909

Combined-Imaging-Technique for Planning and Monitoring Canine Distalization Using Miniscrew Anchorage

R.C. SANTIAGO, G. CERRONE, Jr., R.W.F. VITRAL, and M.V.Q. PAULA, Universidade Federal De Juiz De For a, Juiz de Fora, Brazil

910

Age-Dependent Cone-Beam Computed Tomography Evaluation of Midpalatal and Zigomatic-Maxillary Sutures

G. CERRONE, Jr., M.T. MARTINS, and M.V.Q. PAULA, Universidade Federal De Juiz De For a, Juiz de Fora, Brazil

911

WITHDRAWN

912

Alternative Orthodontic Bonding Protocol Using Self Etching Primer

R.-B. CALDWELL, E. TUFEKCI, P.C. MOON, S.J. LINDAUER, and B. SHROFF, Virginia Commonwealth University - VCU/MCV, Richmond, VA

913

White Spot Lesions around the Brackets: An in-Vitro Study

C.M. FARAH, E. TUFEKCI, P.C. MOON, O. GUNEY-ALTAY, and S.J. LINDAUER, Virginia Commonwealth University - VCU/MCV, Richmond, VA

914

Compliance with retainers in the first two years after treatment

K. KACER, M. VALIATHAN, M.G. HANS, and S. NARENDRAN, Case Western Reserve University, Cleveland, OH

915

Elastomeric-Ligated Versus Self-Ligating Appliances: Plaque Retention Following 1-Year Orthodontic Treatment

T. BUCK, R. SAUERWEIN, P. PELLEGRINI, D.C. LAFFERTY, T. NIELSEN, I. RISTOVSKA, D. POON, D. COVELL, Jr., T. MAIER, and C.A. MACHIDA, Oregon Health & Science University, Portland, OR

Presentation

916

Bacterial Adherence on Orthodontic Brackets and Titanium Miniscrew Implants

E.C. KAO[1], L. JACKFERT[2], J. THOMAS[1], P. NGAN[1], M. GLADWIN[1], and E. GUNEL[3], [1]West Virginia University School of Dentistry, Morgantown, WV, [2]Private Practice, Charleston, WV, [3]West Virginia University, Morgantown, WV

917

Retrospective survey of Temporary Anchorage Devices Utilization in University Practice

T.J. RAY, F.M. BECK, and S.S. HUJA, Ohio State University, Columbus, OH

918

Effect of Orthodontic Aligner Laminate Thickness on Stress

P. NAMIRANIAN, K. T. KALILI, A. CAPUTO, and P. TURLEY, University of California - Los Angeles, Los Angeles

919

WITHDRAWN

920

Effects of nickel-titanium and stainless steel leveling archwires

R. MORESCA[1], J.W. VIGORITO[2], G.C. DOMINGUEZ[2], and A. MORO[1], [1]Positivo University, Curitiba, Brazil, [2]School of Dentistry, University of São Paulo, São Paulo, Brazil

921

Acute Palatal Expansion Strains Alveolar Bone and Facial Sutures

Z. SUN, H. KIM, and S. HUENI, Ohio State University, Columbus, OH

See more of: Craniofacial Biology

372 New Materials

Saturday, March 19, 2011: 1:45 p.m.-3 p.m.
Hall C (San Diego Convention Center)
3282

Mechanical properties, polishability, and wear resistance of new nano-hybrid composites
C. LOTTINGER, A.H. RIPPS, J.-F. ZHANG, and X. XU, School of Dentistry, Louisiana State University Health Sciences Center, New Orleans, LA
3283

Self-adhering, Fluoride Release Core Build-up Composites
S. JIN, W. JIA, S. RICHARDS, and B. DEEB, Pentron Clinical Technologies, Division of Kerr Corporation, Wallingford, CT
3284

Effect of Clear Orthodontic Aligner Thickness on Stress Production
J. PACK[1], P. NIKNAEM[1], K. T. KALILI[2], I. NISHIMURA[3], and A. CAPUTO[4], [1]School of Dentistry, University of California - Los Angeles, Los Angeles, CA, [2]Dentistry, University of California - Los Angeles, Los Angeles, CA, [3]Div. of Advanced Prosthodontics, University of California - Los Angeles, Los Angeles, CA, [4]University of California - Los Angeles, Santa Monica, CA
3285

Structural Characteristics Of Clear Aligner With Soft Inner Layer
J. XIE, A. AVITAL, K. T. KALILI, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA
3286

Mechanical Properties of Novel Calcium Phosphate Resin
L.A. AL DEHAILAN, and T.G. CHU, Restorative Dentistry, Indiana University, Indianapolis, IN
3287

Surface characteristic of new injectable composite resin
M. WAKO, M. NAKAYAMA, T. KUMAGAI, and T. SAKUMA, Research & Development dept, GC Corporation, Tokyo, Japan
PDF file
3288

Mechanical stability of nano-hybrid composites with new methacrylate monomers formulations
N. ILIE, C. SCHMIDT, and R. HICKEL, Department of Restorative Dentistry and Periodontology, Ludwig-Maximilians University, Munich, Germany
Presentation
3289

A New Provisional Restorative with increased hardness
N. ARALIS, Danville Materials, Anaheim, CA, and **C. ANGELETAKIS**, Proteas Technologies, Orange, CA
3290

Development of low-color, color stable, dual cure dental resins
J.D. OEI, M. MISHRIKY, A. GHIMIRE, C. FAN, H.L. CARDENAS, N. BARGHI, H.R. RAWLS, and K. WHANG, Comprehensive Dentistry, University of Texas - San Antonio / Health Science Ctr, San Antonio, TX
Presentation

3291

Ion Release and Water Sorption of Novel Calcium Phosphate Resin
A.O. ALZAIN, and T.G. CHU, Restorative Dentistry, Indiana University, Indianapolis, IN
3292

Mechanical Properties of a Novel Impression-less Chairside Nightguard Material
B. SUN, C. GHERGULESCU, A. YOUNG, and S. SHAFFER, R&D, DENTSPLY International, York, PA
PDF file
3293

A New Chairside Composite Transitional Crown System and Performance Evaluation
F. SUN[1], B. HUGHES[1], and B. KOLTISKO[2], [1]Technical Research, DENTSPLY INTERNATIOANL/L. D. CAULK, Milford, DE, [2]Research and Development, DENTSPLY Caulk, MIlford, DE
3294

Stress Patterns Generated by Laminated Aligners for Mandibular Distraction
J.R. SCOTT, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, K. T. KALILI, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA
3294.1

Evaluation of an experimental silicone for maxillo-facial prostheses
J.B. PINHEIRO, C. DAHER, A.F.P. MAIDA, A.P. MACEDO, H.F.O. PARANHOS, R.F. SOUZA, and C.H. SILVA-LOVATO, Department of Dental Materials and Prosthodontics, School of Dentistry of Ribeirão Preto/ University of São Paulo, Ribeirão Preto, Brazil
Presentation
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance
<< Previous Session | Next Session >>

372 New Materials

Saturday, March 19, 2011: 1:45 p.m.-3 p.m.
Location: Hall C (San Diego Convention Center)
Session Type: Poster Session
1.25 CE hours

Learning Objectives:
New polymer-based materials

3282

Mechanical properties, polishability, and wear resistance of new nano-hybrid composites

C. LOTTINGER, *A.H. RIPPS, J. ZHANG, and X. XU, School of Dentistry, Louisiana State University Health Sciences Center, New Orleans, LA*

3283

Self-adhering, Fluoride Release Core Build-up Composites

S. JIN, *W. JIA, S. RICHARDS, and B. DEEB, Pentron Clinical Technologies, Division of Kerr Corporation, Wallingford, CT*

3284

Effect of Clear Orthodontic Aligner Thickness on Stress Production

J. PACK[1], *P. NIKNAEM[1], K. T. KALILI[2], I. NISHIMURA[3], and A. CAPUTO[4], [1]School of Dentistry, University of California - Los Angeles, Los Angeles, CA, [2]Dentistry, University of California - Los Angeles, Los Angeles, CA, [3]Div. of Advanced Prosthodontics, University of California - Los Angeles, Los Angeles, CA, [4]University of California - Los Angeles, Santa Monica, CA*

3285

Structural Characteristics Of Clear Aligner With Soft Inner Layer

J. XIE, *A. AVITAL, K. T. KALILI, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA*

3286

Mechanical Properties of Novel Calcium Phosphate Resin

L.A. AL DEHAILAN, *and T.G. CHU, Restorative Dentistry, Indiana University, Indianapolis, IN*

3287

Surface characteristic of new injectable composite resin

M. WAKO, *M. NAKAYAMA, T. KUMAGAI, and T. SAKUMA, Research & Development dept, GC Corporation, Tokyo, Japan*

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3288

Mechanical stability of nano-hybrid composites with new methacrylate monomers formulations

N. ILIE, *C. SCHMIDT, and R. HICKEL, Department of Restorative Dentistry and Periodontology, Ludwig-Maximilians University, Munich, Germany*

Presentation

3289

A New Provisional Restorative with increased hardness

N. ARALIS, Danville Materials, Anaheim, CA, and ***C. ANGELETAKIS***, *Proteas Technologies, Orange, CA*

3290

Development of low-color, color stable, dual cure dental resins

J.D. OEI, *M. MISHRIKY, A. GHIMIRE, C. FAN, H.L. CARDENAS, N. BARGHI, H.R. RAWLS, and K. WHANG, Comprehensive Dentistry, University of Texas - San Antonio / Health Science Ctr, San Antonio, TX*

Presentation

3291

Ion Release and Water Sorption of Novel Calcium Phosphate Resin

A.O. ALZAIN, *and T.G. CHU, Restorative Dentistry, Indiana University, Indianapolis, IN*

3292

Mechanical Properties of a Novel Impression-less Chairside Nightguard Material

B. SUN, *C. GHERGULESCU, A. YOUNG, and S. SHAFFER, R&D, DENTSPLY International, York, PA*

PDF file

3293

A New Chairside Composite Transitional Crown System and Performance Evaluation

F. SUN[1], *B. HUGHES[1], and B. KOLTISKO[2], [1]Technical Research, DENTSPLY INTERNATIOANL/L. D. CAULK, Milford, DE, [2]Research and Development, DENTSPLY Caulk, MIlford, DE*

3294

Stress Patterns Generated by Laminated Aligners for Mandibular Distraction
J.R. SCOTT, *School of Dentistry, University of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, K. T. KALILI, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA*

3294.1

Evaluation of an experimental silicone for maxillo-facial prostheses
J.B. PINHEIRO, *C. DAHER, A.F.P. MAIDA, A.P. MACEDO, H.F.O. PARANHOS, R.F. SOUZA, and C.H. SILVA-LOVATO, Department of Dental Materials and Prosthodontics, School of Dentistry of Ribeirão Preto/ University of São Paulo, Ribeirão Preto, Brazil*

Presentation

See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

197 Clinical Orthodontics – Treatment Modalities and Outcomes

Thursday, July 15, 2010: 4:45 p.m.-6 p.m.
Location: Exhibit Hall (CCIB)
Session Type: Poster Session

1925

Effects of Bonded Rapid Palatal Expansion on Nasal Cavity Volume

*L. CAPPETTA, N. BOUCHER, S. KATZ, and **C. CHUNG**, University of Pennsylvania, Philadelphia, PA*

1926

The Effects of Modified Laceback Ligatures on Posterior Anchorage

***C. CHAROEMRATROTE**, and S. JONGBANDAN, Prince of Songkla University, Hat Yai, Songkla, Thailand*

1927

Braces Impact on Smile Aesthetic: Laypeople and Orthodontists Perception

***R. FURQUIM**, S.D.O. CORDEIRO, A.L. RAMOS, and L.Z. FURQUIM, Universidade Estadual De Maringa, Maringa, Brazil*

1928

Early Expansion With Two Removable Appliances: A Randomized Clinical Trial

*I. WASSERMAN[1], M. BEJARANO[2], S. CESPEDES[2], G. LAFAURIE[3], G. BAUTISTA[2], R. SANCHEZ[2], and **C. GRIMALDI**[2], [1]Universidad El Bosque, Bogota, Colombia, [2]Universidad del Bosque, Bogota, Colombia, [3]Universidad El Bosque, Bogot·, Colombia*

1929

Dissipation of Force Using Orthodontic Spring and Compressible Polymer BAR

***M. DEREGHISHIAN**, T. OHEBSION, E. HENDIFAR, N. JAVDAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

1930

Interceptive versus Comprehensive Orthodontics in Medicaid Patients: An Ongoing RCT

***G. KING**[1], A. KIYAK[2], G.M. GREENLEE[3], G. HUANG[2], and C. SPIEKERMAN[2], [1]University of Washington -, Seattle, WA, [2]University of Washington, Seattle, WA, [3]Department Of Orthodontics, Seattle, WA*

Presentation

1931

Objective vs. Subjective Esthetics in Orthodontic Patients: An Ongoing RCT

***H.A. KIYAK**, G.J. KING, G.M. GREENLEE, G. HUANG, and C. SPIEKERMAN, University of Washington, Seattle, WA*

1932

Biomechanics of Space Closure with Reduced Alveolar Support

***T. KUSAKABE**, Hokkaido University Hospital, Sapporo, Japan, A. CAPUTO, University of California - Los Angeles, Los Angeles, CA, and J. IIDA, University of Hokkaido -, Sapporo, Japan*

1933

Satisfaction with life and quality of life in orthognathic patients

*T. BEDAIR, M. RICHARDS, C. GUPTA, S. SHANKER, F.M. BECK, and **A.R. FIRESTONE**, Ohio State University, Columbus, OH*

1934

Bone Defects Formation with Orthodontic Intrusion in Periodontal Patients

***Y. ZHOU**, Peking University, Beijing, China*

1935

Bone Matrix Protein Expression around Titanium Orthodontic Mini-implant

***Y. LIM**, Department of Orhtodontics, Graduate School of Clinical Dentistry, Korea University, Seoul, South Korea, D. LEE, Department of Orthodontics, Graduate School of Clinical Dentistry, Korea University, Seoul, South Korea, and J.I. LEE, School of Dentistry, Seoul National University, Seoul, South Korea*

1936

Validation of a Modified McGill Pain Questionnaire for Orthodontic Patients

***L.R. IWASAKI**[1], L.E. FREYTAG[2], C.A. SCHUMACHER[3], M.P. WALKER[1], and K.B. WILLIAMS[1], [1]University of Missouri - Kansas City, Kansas City, MO, [2]Private Practice, Overland Park, KS, [3]Private Practice, Effingham, IL*

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1937

WITHDRAWN

1938

Measurement of Traction Force in Distraction Osteogenesis for CLP

***M. TSUJI**[1], Y. BABA[1], K. KATAOKA[2], A. HONDA[2], S. SUZUKI[1], and K. MORIYAMA[1], [1]Maxillofacial Orthognathics, Tokyo Medical and Dental University Graduate School; Global Center of Excellence (GCOE) Program, Tokyo, Japan, [2]Maxillofacial Orthognathics, Tokyo Medical and Dental University Graduate School, Tokyo, Japan*

1939

Evaluation of Bis-GMA/TEGDMA Leaching From a Hybrid Resin Composite
*M.H. TABATABAEE, H. MAHDAVI, S. ZANDI, and **S.H. BASSIR**, Tehran University of Medical Sciences, Tehran, Iran*

Presentation

1940

Acupuncture in the Clinical Treatment of Orofacial Pain
***F. MORALES**[1], O. BECHARA[2], C. BATAGLION[2], M. ZUCCOLLOTTO[2], S. BATAGLION[2], A. PEDERSOLI[2], and S. REGALO[2], [1]APCD - ASSOCIAÇÃO PAULISTA DOS CIRURGI'ES DENTISTAS, Ribeirao Preto, Brazil, [2]USP - Universidade de Sao Paulo, Ribeirao Preto, Brazil*

1941

Lip Morphological Changes and Differences Before and After Orthodontic Treatment
***M.R. ISLAM**[1], T. KITAHARA[1], H. IOI[1], L. NAHER[2], and I. TAKAHASHI[1], [1]Kyushu University, Faculty of Dental Science, Dept. of Orthodontics, Fukuoka, Japan, [2]Kyushu University, Faculty of Dental Science, Dept. of Oral Pathology and Medicine, Dept. of Oral and Maxillofacial Surgery, Fukuoka, Japan*

1942

Shape Analysis of Stability following Skeletal Class III Surgery
***L. CEVIDANES**, B. PANIAGUA, L. DE PAULA, and M. STYNER, University of North Carolina, Chapel Hill, NC*

1943

Post-Retention Changes in Maxillary Molar Position Following Cervical Traction
***K.T. STROUD**, L.M. ANDRIA, and L.P. LEITE, Medical University of South Carolina- Department of Pediatric Dentistry and Orthodontics, Charleston, SC*

1944

Multidisciplinary Treatment of Adult Class II Open-Bite Patient (Case Report)
***A. BAYSAL**[1], T. UYSAL[2], G. KURT[3], K. KILIC[1], and D. KILIC[1], [1]Erciyes University, Kayseri, Turkey, [2]Erciyes Universitesi, Kayseri, Turkey, [3]Erciyes Üniversitesi, Kayseri, Turkey*

1945

A new orthodontic force delivery system for beagle dogs
*J. HAO, **Y. NEDVETSKY**, M. GALANG, C. HANDELMAN, and C. EVANS, University of Illinois - Chicago, Chicago, IL*

Presentation

1946

TMJ changes Following Unilateral Mandibular Distraction Osteogenesis in Growing Mini-pigs
***C. YAO**, Y. YANG, H. CHANG, and C. HUANG, National Taiwan University, Taipei, Taiwan*

1947

WITHDRAWN

1948

Association Analysis of Class-II Division-2 (CII/D2) with RUNX2 and RUNX3
***L.A. MORFORD**[1], T.J. COLES[1], D.W. FARDO[1], M.D. WALL[2], M.W. MORRISON[2], K.S. KULA[2], and J.K. HARTSFIELD JR.[1], [1]University of Kentucky, Lexington, KY, [2]Indiana University - Indianapolis, Indianapolis, IN*

1949

Maxillomandibular Growth Based On Cervical Vertebral Changes Among Caucasian Males
***S. HAN**, Catholic University of Korea, Suwon, South Korea, T. LIEN, New York University, New York, NY, and R.G. NORMAN, New York University College of Dentistry, New York, NY*

1950

Frog, a New Orthodontic Appliance for Compliance-free Molar Distalization
***S. BONETTI**, D. DALESSANDRI, F. DI ROSARIO, A. STILO, G. VOLPINI, and C. PAGANELLI, University of Brescia, Brescia, Italy*

1951

Treatment of Deep-bite in Children with the Nite-Guide®/Occluso-Guide®: RCT
***A. WINTERGERST**, and E. TEODOSIO-PROCOPIO, Universidad Nacional Autonoma de Mexico, Mexico D.F, Mexico*

1952

May Every Child Sing and Smile
***M. TOLAROVA**[1], M. VALLEY[1], D. POULTON[1], G. GAST[1], G. WONG[2], A. CAPOZZI[3], and M. TOLAR[1], [1]University of the Pacific, San Francisco, CA, [2]UC Davis Medical Group Plastic Surgery, Sacramento, CA, [3]Rotaplast International Inc, San Francisco, CA*

See more of: Craniofacial Biology

372 NEW MATERIALS

Saturday, March 19, 2011: 1:45 p.m.-3 p.m.
Location: Hall C (San Diego Convention Center)
Session Type: Poster Session

Chair:

N. ILIE

3282

Mechanical properties, polishability, and wear resistance of new nano-hybrid composites

C. LOTTINGER, *A.H. RIPPS, J.-F. ZHANG, and X. XU, School of Dentistry, Louisiana State University Health Sciences Center, New Orleans, LA*

3283

Self-adhering, Fluoride Release Core Build-up Composites

S. JIN, *W. JIA, S. RICHARDS, and B. DEEB, Pentron Clinical Technologies, Division of Kerr Corporation, Wallingford, CT*

3284

Effect of Clear Orthodontic Aligner Thickness on Stress Production

J. PACK[1], *P. NIKNAEM*[1], *K. T. KALILI*[2], *I. NISHIMURA*[3], *and A. CAPUTO*[4], [1]*School of Dentistry, University of California - Los Angeles, Los Angeles, CA,* [2]*Dentistry, University of California - Los Angeles, Los Angeles, CA,* [3]*Div. of Advanced Prosthodontics, University of California - Los Angeles, Los Angeles, CA,* [4]*University of California - Los Angeles, Santa Monica, CA*

3285

Structural Characteristics Of Clear Aligner With Soft Inner Layer

J. XIE, *A. AVITAL, K. T. KALILI, and A. CAPUTO, Dentistry, University of California - Los Angeles, Los Angeles, CA*

3286

Mechanical Properties of Novel Calcium Phosphate Resin

L.A. AL DEHAILAN, *and T.G. CHU, Restorative Dentistry, Indiana University, Indianapolis, IN*

3287

Surface characteristic of new injectable composite resin

M. WAKO, *M. NAKAYAMA, T. KUMAGAI, and T. SAKUMA, Research & Development dept, GC Corporation, Tokyo, Japan*

3288

Mechanical stability of nano-hybrid composites with new methacrylate monomers formulations

N. ILIE, *C. SCHMIDT, and R. HICKEL, Department of Restorative Dentistry and Periodontology, Ludwig-Maximilians University, Munich, Germany*

3289

A New Provisional Restorative with increased hardness

N. ARALIS, Danville Materials, Anaheim, CA, and ***C. ANGELETAKIS***, *Proteas Technologies, Orange, CA*

3290

Development of low-color, color stable, dual cure dental resins

J.D. OEI, *M. MISHRIKY, A. GHIMIRE, C. FAN, H.L. CARDENAS, N. BARGHI, H.R. RAWLS, and K. WHANG, Comprehensive Dentistry, University of Texas - San Antonio / Health Science Ctr, San Antonio, TX*

3291

Ion Release and Water Sorption of Novel Calcium Phosphate Resin

A.O. ALZAIN, *and T.G. CHU, Restorative Dentistry, Indiana University, Indianapolis, IN*

3292

Mechanical Properties of a Novel Impression-less Chairside Nightguard Material

B. SUN, *C. GHERGULESCU, A. YOUNG, and S. SHAFFER, R&D, DENTSPLY International, York, PA*

3293

A New Chairside Composite Transitional Crown System and Performance Evaluation

F. SUN[1], *B. HUGHES*[1], *and B. KOLTISKO*[2], [1]*Technical Research, DENTSPLY INTERNATIOANL/L. D. CAULK, Milford, DE,* [2]*Research and Development, DENTSPLY Caulk, MIlford, DE*

3294

Stress Patterns Generated by Laminated Aligners for Mandibular Distraction

J.R. SCOTT, *School of Dentistry, University of California - Los Angeles, Los Angeles, CA, D.H. JOHNSON, School of Dentistry, University of California - Los Angeles, Los Angeles, CA, K. T. KALILI, Biomaterials Science, University of California - Los Angeles, Los Angeles, CA, and A. CAPUTO, University of California - Los Angeles, Santa Monica, CA*

See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

<< Previous Session | Next Session >>

297 Polymerization Stress Development and Tooth Deflection; Tooth Stabilization

Friday, July 16, 2010: 4:45 p.m.-6 p.m.
Exhibit Hall (CCIB)
3051

Influence of Fibre Reinforcement on the Stability of Molars
S. BEER, University of Münster, School of Dentistry, Department of Orthodontics, Münster, Germany, L. MARKOVIC, University of Witten - Herdecke, Witten, Germany, U. HEFFENTRÄGER, Private Practice, Berlin, Germany, and R. BEER, University of Witten-Herdecke, Witten, Germany
3052

Posterior Tooth Deformation After Composite Restoration - a 3D-Finite-Element Analysis
N. MANCHOROVA-VELEVA[1], S. VLADIMIROV[1], and P. YORDANOV[2], [1]Medical University - Plovdiv, Faculty of Dental Medicine, Department of Operative Dentistry and Endodontics, Plovdiv, Bulgaria, [2]Technical University - Sofia, Faculty of Mechanical Engineering, Department of Transport and Aircraft Equipment and Technologies, Plovdiv, Bulgaria
PDF file
3053

Effect of Cavity-configuration on Induced-stresses at Cervical Resin-restorations in Periodontally-compromised-teeth
M. NIAZY, Al-Azhar University, Cairo, Egypt, W. JAMIL, AlAzhar University, Cairo, Egypt, and M. ELASHRY, Senior Research Scientist,IBM T.J.Watson Research Lab,NY 10598,USA, Cairo, Egypt
3054

Contraction Stresses of Low Shrinking Resin Composites
Y. KUBOTA[1], T. YAMAMOTO[2], J. FERRACANE[3], and Y. MOMOI[1], [1]Tsurumi University, Yokohama, Japan, [2]Tsurumi University School of Dental Medicine, Yokohama, Japan, [3]Oregon Health & Science University, Portland, OR
3055

Influence of Composite Polymerization Shrinkage on Cuspal Deflection: 3D FEA
E. ELDWAKHLY, Lecturer, Fixed Prosthodontics, Faculty of Dentistry,Cairo University, Cairo, Egypt, S. JAFAR- POUR, University of Toronto, Toronto, ON, Canada, A. ELRAGI, Fayoum University, Fayoum, Egypt, and W. EL-BADRAWY, University of Toronto -, Toronto, ON, Canada
3056

Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar
T. OHEBSION, E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA
3057

Contraction Stress and Extent of Polymerization of Flowable Composites
B. CODAN, C.O. NAVARRA, G. MARCHESI, E. DE STEFANO DORIGO, L. BRESCHI, and M. CADENARO, University of Trieste, Trieste, Italy
3058

Contraction Stress of Resin-Composites Assessed by Low- and High-Compliance Systems
G. MARCHESI, B. CODAN, R. DI LENARDA, L. BRESCHI, and M. CADENARO, University of Trieste, Trieste, Italy

3059

Maxillary Expanders Stress Generation
D.W. WHITE, G.R. WERNER, J.M. THOMPSON, and A.A. CAPUTO, University of California - Los Angeles, Los Angeles, CA
Presentation
3060

Photoelastic Stress Analysis of Different Types of Anterior Teeth Splints
M.B. LOPES, K.F. SELLA, S.K. MOURA, and A. GONINI, Jr., University North of Parana, Londrina-PR, Brazil
3061

Effect of Composite Type and Light Intensity on Cuspal-Deflection
S. JAFAR-POUR[1], W. EL-BADRAWY[2], E. ELDWAKHLY[3], and D. MCCOMB[2], [1]University of Toronto, Toronto, ON, Canada, [2]University of Toronto -, Toronto, ON, Canada, [3]Lecturer, Fixed Prosthodontics, Faculty of Dentistry,Cairo University, Cairo, Egypt
3062

Effect of Shrinkage Strain, Modulus, Instrument Compliance on Polymerization Stress
S.-H. MIN, B.-S. LIM, and I.-B. LEE, Seoul National University, Seoul, South Korea
3063

Regional Shrinkage Vectors of Light-Cured Composites by Micro-CT Filler Tracing
E. CHO, Tokyo Medical & Dental University, Tokyo, Japan, A. SADR, Global COE, International Research Center for Molecular Science in Tooth and Bone Diseases, Tokyo Medical & Dental University, Tokyo, Japan, N. INAI, Medical Office, Welfare Division, Minister's Secretariat, Tokyo, Japan, N. NANGO, Ratoc Engineering, Tokyo, Japan, and J. TAGAMI, Cariology and Operative Department, GCOE Program at TMDU, Tokyo Medical & Dental University, Tokyo, Japan
3064

Coronal Deformation in Premolars Restored with Low-Shrink Composites
A. VERSLUIS, D. TANTBIROJN, and R. DELONG, University of Minnesota, Minneapolis, MN
3065

Evaluation of Low Shrinkage Flowable Composite Based on "Dimer Technology"
C. BRACHO-TROCONIS[1], K. ESQUIBEL[1], J. BOULDEN[1], K. WALL[2], and M. TRUJILLO LEMON[1], [1]Septodont, Confi Dental Division, Louisville, CO, [2]Septodont, Confi Dental Division, Loiusville, CO
3066

Cuspal Deformation during Light-Curing of Low-Shrinking Posterior Composite Restorations
R.R. CARA[1], E. GATIN[2], A. DIDILESCU[3], R. SFEATCU[3], C. NICOLA[1], and I. PATRASCU[3], [1]University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania, [2]University of Bucharest, Faculty of Physics, Bucharest, Romania, [3]University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania
3067

Comparison of Tooth Stabilization by Nylon-wire and Steel-wire Resin Splints
Z.-B. CHI, D.-Y. TAO, Y. WANG, and X.-P. FENG, Department of Preventive & Pediatric Dentistry ,Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China
3068

Cuspal Movement Associated to Different Polymerization Protocols
J.M.C. BOAVENTURA[1], E.A. CAMPOS[1], G.M. CORRER[2], F. BARATTO-FILHO[2], O.B. OLIVEIRA JUNIOR[1], and M.F. ANDRADE[1], [1]Universidade Est. Paulista Julio Mesquita, Araraquara-SP, Brazil, [2]Positivo University, Curitiba/PR, Brazil

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3069

Numerical Evaluation of Shrinkage Stress of Dental Composites
J. LI, H. LI, and **A. FOK**, Minnesota Dental Research Center for Biomat & Biomechanics, Minneapolis, MN
3070

Mechanical Properties of Orthodontics Composite Archwires – Three-point Bending Tests
A.L.S. ALMEIDA[1], M. HIROCE[2], C.N. ELIAS[3], and C.C.A. QUINTÃO[2], [1]Universidade Do Estado do Rio de Janeiro, Niterói, Brazil, [2]Universidade Do Estado do Rio de Janeiro, Rio de Janeiro, Brazil, [3]Instituto Militar de Engenharia, Rio de Janeiro, Brazil
3071

Initial Radial Pressures Generated by Variable Shrinkage Composite Resins
M. IBRAHIM, M. MEHTA, J. WHITWORTH, and J. MCCABE, Newcastle University, Newcastle upon Tyne, United Kingdom
See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

297 POLYMERIZATION STRESS DEVELOPMENT AND TOOTH DEFLECTION; TOOTH STABILIZATION

Friday, July 16, 2010: 4:45 p.m.-6 p.m.
Location: Exhibit Hall (CCIB)

3051

Influence of Fibre Reinforcement on the Stability of Molars

S. BEER, *University of Münster, School of Dentistry, Department of Orthodontics, Münster, Germany, L. MARKOVIC, University of Witten - Herdecke, Witten, Germany, U. HEFFENTRÄGER, Private Practice, Berlin, Germany, and R. BEER, University of Witten-Herdecke, Witten, Germany*

3052

Posterior tooth deformation after composite restoration - a 3D-finite-element analysis

N. MANCHOROVA-VELEVA[1]*, S. VLADIMIROV*[1]*, and P. YORDANOV*[2]*,* [1]*Medical University - Plovdiv, Faculty of Dental Medicine, Department of Operative Dentistry and Endodontics, Plovdiv, Bulgaria,* [2]*Technical University - Sofia, Faculty of Mechanical Engineering, Department of Transport and Aircraft Equipment and Technologies, Plovdiv, Bulgaria*

3053

Effect Of Cavity-configuration On induced-stresses At Cervical Resin-restorations In Periodontally-compromised-teeth

M. NIAZY, *Al-Azhar University, Cairo, Egypt, W. JAMIL, AlAzhar University, Cairo, Egypt, and M. ELASHRY, Senior Research Scientist,IBM T.J.Watson Research Lab,NY 10598,USA, Cairo, Egypt*

3054

Contraction Stresses of Low Shrinking Resin Composites

Y. KUBOTA[1]*, T. YAMAMOTO*[2]*, J. FERRACANE*[3]*, and Y. MOMOI*[1]*,* [1]*Tsurumi University, Yokohama, Japan,* [2]*Tsurumi University School of Dental Medicine, Yokohama, Japan,* [3]*Oregon Health & Science University, Portland, OR*

3055

Influence of Composite Polymerization Shrinkage on Cuspal Deflection: 3D FEA

E. ELDWAKHLY, *Lecturer, Fixed Prosthodontics, Faculty of Dentistry,Cairo University, Cairo, Egypt, S. JAFAR-POUR, University of Toronto, Toronto, ON, Canada, A. ELRAGI, Fayoum University, Fayoum, Egypt, and W. EL-BADRAWY, University of Toronto -, Toronto, ON, Canada*

3056

Stress Dissipation of Orthodontic Aligner with Compressible Polymer Bar

T. OHEBSION, *E. HENDIFAR, N. JAVDAN, M. DEREGHISHIAN, K. T. KALILI, and A. CAPUTO, UCLA School of Dentistry, Los Angeles, CA*

3057

Contraction Stress and Extent of Polymerization of Flowable Composites

B. CODAN, *C.O. NAVARRA, G. MARCHESI, E. DE STEFANO DORIGO, L. BRESCHI, and M. CADENARO, University of Trieste, Trieste, Italy*

3058

Contraction Stress of Resin-Composites Assessed by Low- and High-Compliance Systems

G. MARCHESI, *B. CODAN, R. DI LENARDA, L. BRESCHI, and M. CADENARO, University of Trieste, Trieste, Italy*

3059

Maxillary Expanders Stress Generation

D.W. WHITE, *G.R. WERNER, J.M. THOMPSON, and A.A. CAPUTO, University of California - Los Angeles, Los Angeles, CA*

3060

Photoelastic stress analysis of different types of anterior teeth splints

M.B. LOPES, *K.F. SELLA, S.K. MOURA, and A. GONINI, Jr., University North of Parana, Londrina-PR, Brazil*

3061

Effect of Composite Type and Light Intensity on Cuspal-Deflection

S. JAFAR-POUR[1]*, W. EL-BADRAWY*[2]*, E. ELDWAKHLY*[3]*, and D. MCCOMB*[2]*,* [1]*University of Toronto, Toronto, ON, Canada,* [2]*University of Toronto -, Toronto, ON, Canada,* [3]*Lecturer, Fixed Prosthodontics, Faculty of Dentistry,Cairo University, Cairo, Egypt*

3062

Effect of shrinkage strain, modulus, instrument compliance on polymerization stress

S.-H. MIN, *B.-S. LIM, and I.-B. LEE, Seoul National University, Seoul, South Korea*

3063

Regional shrinkage vectors of light-cured composites by micro-CT filler tracing

E. CHO, *Tokyo Medical & Dental University, Tokyo, Japan, A. SADR, Global COE, International Research Center for Molecular Science in Tooth and Bone Diseases, Tokyo Medical & Dental University, Tokyo, Japan, N. INAI, Medical Office, Welfare Division, Minister's Secretariat, Tokyo, Japan, N. NANGO, Ratoc Engineering, Tokyo, Japan, and J. TAGAMI, Cariology and Operative Department, GCOE Program at TMDU, Tokyo Medical & Dental University, Tokyo, Japan*

3064

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3066

Cuspal Deformation during Light-Curing of Low-Shrinking Posterior Composite Restorations

__R.R. CARA__[1], E. GATIN[2], A. DIDILESCU[3], R. SFEATCU[3], C. NICOLA[1], and I. PATRASCU[3], [1]University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania, [2]University of Bucharest, Faculty of Physics, Bucharest, Romania, [3]University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

3067

Comparison of Tooth Stabilization by Nylon-wire and Steel-wire Resin Splints

__Z.-B. CHI__, D.-Y. TAO, Y. WANG, and X.-P. FENG, Department of Preventive & Pediatric Dentistry ,Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China

3068

Cuspal movement associated to different polymerization protocols

__J.M.C. BOAVENTURA__[1], E.A. CAMPOS[1], G.M. CORRER[2], F. BARATTO-FILHO[2], O.B. OLIVEIRA JUNIOR[1], and M.F. ANDRADE[1], [1]Universidade Est. Paulista Julio Mesquita, Araraquara-SP, Brazil, [2]Positivo University, Curitiba/PR, Brazil

3069

Numerical Evaluation of Shrinkage Stress of Dental Composites

J. LI, H. LI, and __A. FOK__, Minnesota Dental Research Center for Biomat & Biomechanics, Minneapolis, MN

3070

Mechanical Properties of Orthodontics Composite Archwires – Three-point Bending Tests

__A.L.S. ALMEIDA__[1], M. HIROCE[2], C.N. ELIAS[3], and C.C.A. QUINTÃO[2], [1]Universidade Do Estado do Rio de Janeiro, Niterói, Brazil, [2]Universidade Do Estado do Rio de Janeiro, Rio de Janeiro, Brazil, [3]Instituto Militar de Engenharia, Rio de Janeiro, Brazil

3071

Initial radial pressures generated by variable shrinkage composite resins

__M. IBRAHIM__, M. MEHTA, J. WHITWORTH, and J. MCCABE, Newcastle University, Newcastle upon Tyne, United Kingdom

See more of: Dental Materials 7: Polymer-based Materials-Physical Properties and Performance

197 Clinical Orthodontics - Treatment Modalities and Outcomes

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C. CHAROEMRATROTE, and S. JONGBANDAN, Prince of Songkla University, Hat Yai, Songkla, Thailand
1927

Braces Impact on Smile Aesthetic: Laypeople and Orthodontists Perception
R. FURQUIM, S.D.O. CORDEIRO, A.L. RAMOS, and L.Z. FURQUIM, Universidade Estadual De Maringa, Maringa, Brazil
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S. BONETTI, D. DALESSANDRI, F. DI ROSARIO, A. STILO, G. VOLPINI, and C. PAGANELLI, University of Brescia, Brescia, Italy
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Treatment of Deep-bite in Children with the Nite-Guide®/Occluso-Guide®: RCT
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May Every Child Sing and Smile
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See more of: Craniofacial Biology

197 CLINICAL ORTHODONTICS – TREATMENT MODALITIES AND OUTCOMES

Thursday, July 15, 2010: 4:45 p.m.-6 p.m.
Location: Exhibit Hall (CCIB)

1925

Effects of Bonded Rapid Palatal Expansion on Nasal Cavity Volume
L. CAPPETTA, N. BOUCHER, S. KATZ, and ***C.-H. CHUNG****, University of Pennsylvania, Philadelphia, PA*

1926

The Effects of Modified Laceback Ligatures on Posterior Anchorage
C. CHAROEMRATROTE*, and S. JONGBANDAN, Prince of Songkla University, Hat Yai, Songkla, Thailand*

1927

Braces Impact on Smile Aesthetic: laypeople and orthodontists perception
R. FURQUIM*, S.D.O. CORDEIRO, A.L. RAMOS, and L.Z. FURQUIM, Universidade Estadual De Maringa, Maringa, Brazil*

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Respectfully,

Tom Kalili, DMD, QME

Tom Kalili, DMD, QME
Beverly Hills Dental Corp Co-Founder & CEO
Lecturer, 1990 –2011
Division of Advanced Prosthodontics, Biomaterials Science
And Hospital Dentistry, UCLA School of Dentistry

web: www.BeverlyHillsDentalCorp.com
P: (310) 273-9485 F: (844) 837-3544