



EDSA LECTURE COMPETITION SUMMER 2023

BOOK OF ABSTRACTS



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Scientific Jury

Dr. Manal Ablal

Dr. Jonathan Marsden

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Consequences of the Vegetarian Diet on General and Oral Health

Year of Study: 1st year graduated

University: University of Toulouse, France

Authors: Inès Bouillaud, Matthieu Minty

Affiliation: Faculté de chirurgie dentaire de Toulouse

Introduction

Vegetarian diet is more frequent in France, regarding the literature, a lot of studies are analyzing those impact on general health. Unfortunately, there isn't a big pool of results concerning oral health. In this small pilot clinical study we want to know the impact of a vegetarian diet on saliva's microbiota.

Materials and Methods

Subjects: 8 patients (from 22 to 24 YO); 4 ovo-lacto-vegetarians/4 omnivores, with the same lifestyle; non smokers students, no health problem. We took a clinical control exam and a simple salivary sample (3h after the last teeth brushing). We inoculated 8 nutritional gelosa at 37°C with the salivary samples 24h after that, the same operator counted the number of unit forming colonies (UFC) for every sample.

Results

Visually, there are more bacteria in omnivore's saliva than in vegetarian's. After statistical analysis (using a student test or a variant) we can say that there is approximately 4 times more bacteria in omnivorous saliva than vegetarian one.

Conclusions

Those results are encouraging, there are consequences of a different diet on oral microbiota density, potentially leading to a different oral health status. The perspectives are to analyze the different species of bacteria between the two diets, using metagenomic sequencing. After that, depending on the result and according to the literature, I would like to experiment this diet on periodontal patients, in order to see if this anti-inflammatory diet can help reduce or stabilize the bad consequences of periodontal diseases and/or have some kind of effect in the quality of the oral flora. This study is only a little part of a bigger work for my final dental thesis (different than a research thesis). This study was not sponsored or subventionned by any kind of private or public lab. Because of a lack of finances we couldn't push our experiences.

Keywords: vegetarianism; oral health; diet; microbiota;

Roberto De Leonardis

The washout of three different retrograde filling materials in microsurgical endodontics: an in vitro study

Year of Study: 6th

University: Catholic University of the Sacred Heart of Rome, Italy

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Congrats!

WINNER

Introduction

In microsurgical endodontics it is essential to remove hemostatic materials like ferric sulfate before completing the surgery to ensure proper periapical lesion regeneration. Typically, this is done using rotary instruments with abundant irrigation. However, this procedure often leads to partial washout of the retrograde filling, impacting apical sealing and the success rate of retrograde treatment. The aim of this study is to assess and compare the susceptibility to washout of three different retrograde filling materials: SuperEBA (Bosworth Company, USA), ProRoot MTA (Dentsply, USA), and WellRoot PT (Vericom, South Korea).

Materials and Methods

Thirty-six extracted teeth were collected and divided in three groups (n=12): Group A - Retrograde filling with SuperEBA; Group B - ProRoot MTA; Group C - WellRoot PT. Alveoli in pig mandibles were selected using CBCT for microsurgery. Surgical crypt and apicectomies were made with rotary instruments and retrograde preparations were made using ultrasonic retrotips. Once the retrograde filling was completed, ferric sulfate was removed with high speed instruments under abundant irrigation for twenty seconds. The washout was evaluated by measuring the distance between the filling left in the retro-cavity and the resection surface using 3Shape D700 scanner and 3Shape 3DViewer (3Shape, USA).

Results

Results showed that all retrograde filling materials were susceptible to washout. Notably, MTA had the highest washout rate, followed by WellRoot PT and SuperEBA, with significant differences between the groups detected by ANOVA and Tukey's HSD tests.

Conclusions

Newer retrograde filling materials, such as ProRoot MTA and WellRoot PT, have superior biological properties compared to older materials like SuperEBA. However, they also exhibit a higher susceptibility to washout during surgical procedures, especially MTA. This finding indicates a real challenge in microsurgical endodontics, as our future target is to develop a bioceramic liner able to prevent the washout and to maintain the osteo-induction and biocompatibility that characterize bioceramic sealers.

Key words: Washout; retrograde root filling; SuperEBA; ProRoot MTA; WellRoot PT



In Vitro Study Based on CT Evaluation of Rotation and Reciprocating Motion in Root Canal Shaping on Vertucci VI Class (2-1-2) Acrylic Blocks by Using XP-Endo Shaper and R-motion Files

Year of Study: 5th year

University: Marmara University Faculty of Dentistry, Istanbul, Türkiye

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Introduction

Root canal preparation presents an intricate process influenced by multiple factors, particularly when addressing canals with complex morphologies. The study discusses XP-endo Shaper and R-Motion instruments for root canal preparation. The XP-endo Shaper comprises a single-file system crafted from a unique alloy that reacts and adjusts to different temperature thresholds. It is employed with rotary movement, whereas R-Motion utilizes reciprocating movement. The objective is to compare the effectiveness of XP-endo Shaper and R-Motion.

Materials and Methods

The study involves a set of 30 acrylic tooth blocks with a canal length of 16mm, designed in the Vertucci-VI (2-1-2) class (Edudent-Türkiye). XP-Endo Rise (FKG-Switzerland) which employs continuous rotary movement at 1000 rpm and 1.5 Ncm torque, and R-Motion (FKG-Switzerland), designated for a reciprocating movement of 150-degree clockwise and 30-degree counterclockwise were used with Rooter X3000 Endomotor (FKG-Switzerland). Thirteen acrylic blocks were shaped with XP-Endo Rise and the remaining thirteen with RMotion. Four blocks were designated as a reference group and were left unprepared. For both systems, the procedure started with a glide path file, followed by using a 30.04 file during the shaping process. The file systems were alternated every two acrylic blocks during preparation. Each canal was irrigated with 5 ml of water. After completing the preparations, CT images (Planmeca ProMax 3D Plus-Finland) were taken. The process involved starting with an unprepared tooth block, followed by sequentially placing the prepared tooth blocks for both systems.

Results

There is a significant difference between rotary and reciprocating movement in the coronal third ($p>0.005$).

Conclusions

Based on this in vitro study XP-Endo Rise rotary system was more invasive in the coronal third than R-Motion reciprocating system.

Key words: XP-Endo Rise; R-motion; CT; Dentin removal; shaping;

Gender-related differences of Elongated Styloid Process in Panoramic Radiographs

Year of Study: 3rd year

University: Vilnius University, Lithuania

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Introduction

Background. Elongated styloid process (ESP) is a cylindrical cartilaginous bone located on the temporal bone with an overall length exceeding 30 mm. ESP can interfere with the surrounding anatomical structures and be a source of craniofacial and/or cervical pain and other symptoms, usually associated with Eagle's syndrome.

Aim. We aimed to determine the gender-related differences in prevalence and anatomical variations of ESP in the population studied.

Materials and Methods

The study data included panoramic radiographs of 6000 patients visiting Vilnius University Hospital Zalgiris Clinic from 2014 to 2016 for clinical purposes. The presence and distribution of ESP were assessed using Romexis Planmeca Viewer software. SPSS version 27.0 software in which the Mann-Whitney U and Chi-square tests were used to analyze study variables, and the significance level was set as $p=0.05$.

Results

In total, the ESP was found in 8% (N480) of radiographic images. The prevalence of ESP was found to be 6% (N189) among females and 10% (N291) among males. The median age of females with ESP was 59 (IQR16) and 60 (IQR16) in males, $p=0.187$. In the female group, 16% (N30) of ESP was found on the right side, 14% (N26) on the left, and 71% (N133) bilaterally. Among males, ESP on the right side was present for 22% (N65), on the left for 12% (N34), and for 66% (N193) on both sides, $p=0.205$.

Conclusions

In the population studied, a higher prevalence of ESP was found among males. The highest proportion of ESP was found bilaterally without significant gender-related differences. Further studies with a larger sample and randomized design are needed.

Key words: elongated styloid process; Eagle syndrome; prevalence; panoramic radiograph;