College: Dentistry
Degree: M.Sc

No	Name	Title	Degree	Year
1	Shukria Mohammad Al-Zahawi	The relationship between calcium, magnesium and inorganic phosphate human mixed saliva and dental caries	M.Sc	2005
2	Lawa Issac Isho	The effect of immersion in slurry water or tap water on some properties of gypsum products	M.Sc	2007
3	Bassam Karem Amin	The effect of two demineralizing agents on apical sealing of retrograde filling materials	M.Sc	2007
4	Mahdi Salih Abdulla	The effect of chlorhexidine on load deflection of nickel titanium Orthodontics archwire (an in vitro study)	M.Sc	2007
5	Omer Fawzi A. Jabbar	Shear Bond Strength of Different Adhesives for Bonding Stainless Steel Bracket on Primary Second Molar	M.Sc	2007
6	Hemn Muhssin Suleiman	Dental Erosion Among 11-12 Years Old Schoolchildren in Erbil City	M.Sc	2007
7	Brwa Mahdi Aziz	Prevalence of permanent maxillary malposed canine in a sample of students of secondary schools in Erbil city	M.Sc	2008
8	Muhammad Aziz Ahm	Correlation between periodontal Disease and serum dislipidemia	M.Sc	2008
9	Dilman Najmaddin Muhammd	A double blind comparative study of nimesulide and naproxen on postoperative pain & swelling following periradicular surgery	M.Sc	2008
10	Hala Patros Hanna	Evaluation of the effect of different instrumentation & obturation techniques on the apical sealing using two different types of sealers (In vitro study)	M.Sc	2008
11	Shahen Ali Ahmed	Rheumatoid arthritis of the temporomandibular joint in Hawler, A clinical and Radiographical study	M.Sc	2008
12	Media Ali Saeed	Obturation of simulated internal resorption cavities with three different techniques (An in-vitro comparative study)	M.Sc	2008
13	Fedil Andraws Yalda	Evaluation of Periodontal Bone loss in male Smokers using Digital Bite-wing Radiography	M.Sc	2008
14	Jawad Muhammad michael	Compressive strength and surface Roughness of Die Stone Casts After Repeated Disinification with Sodium Hypochlorite Solution	M.Sc	2008
15	Mirza Murad Khudeda	Oral Health Status, Treatment Need, Dental Health Knowledge and Behavior among 12 Years- Old School Students In Dohuk Governorate	M.Sc	2008
16	Majid A. Dawood	Biochemical Studies on Salivary Phosphatases Enzymes in Gingivitis	M.Sc	2008
17	Sargon Youel Eliya	Morphological changes in simulated tiny curved canals over-instrumented with a variety of instruments and techniques	M.Sc	2008
18	Hoger Mustafa Najman	Assessment of Microleakage of Four Restorative Materials in Pulpotomized Primary Molars	M.Sc	2008
19	Shahida Rassul Hussein	The Relation between Unstimulated Salivary pH and Flow Rate with Plaque and Gingival Indices in Pregnancy	M.Sc	2008
20	Saeed Ali Mohammed	Periodontal health status in relation to fluoride concentration in drinking water in Duhok Governorate	M.Sc	2008
21	Hashim Dawood Musa	The effect of different intervention methods on periodontal health in Individuals of different socio-economic levels	M.Sc	2008
22	Muhyaddin Abdul-	Evaluation of depth of cure and surface hardness of	M.Sc	2008

	Rahman Ismaeel	composite resin polymerized by Halogen and LED light curing units		
23	Razawa Kareem Saeed	Assessment of the Wear Resistance and Surface Roughness of Different Resin Composites after Mechanical Brushing (In vitro study)	M.Sc	2008
24	Vian Omer Majeed Salayi	Oral Health Status, Treatment Needs and Dentofacial Anomalies among (5-16) Years Patients 28with β-Thalassemia Major Syndrome in Comp29arison to Healthy School Children in Erbil City	M.Sc	2008
25	Anees Mahmood Mudher	Occlusal Features and Upper dental arch Dimensions in a sample of controlled thalassemic patients (in Duhok city)	M.Sc	2008
26	Omed Ikram Shahab	Pain and swelling after lower 3rd molar surgery (a comparative study between three methods of wound closure)	M.Sc	2008
27	Khoshi Salih H. Al-Mufti	Digital panoramic radiographic study of the mental and the mandibular foramina locations in the (23-25) year's old age group patients	M.Sc	2008
28	Aso Muhammed Abdul-Kareem	Assessment of the efficacy of bone matrix gelatin, MTA and calcium hydroxide as direct pulp capping materials (comparative study on Rabbits)	M.Sc	2009
29	Alan H. Mawlood	Ankylosis of temporomandibula joint (a perspective clinical study)	M.Sc	2009
30	Suzan Abdulla Mohammed	Periodontal health status among young adult patients aged (20-29) years attending Periodontology Teaching Clinic	M.Sc	2009

The relationship between calcium, magnesium and inorganic phosphate human mixed saliva and dental caries

Name: Shukria Mohammad Al-Zahawi
Nature of the research: Academic
Degree: M.Sc
Specialty: Oral Biology
Date the discussion: 8/3/2009
Supervisor: Dr. Raid Fahim Salman

Abstract

Dental caries is a process of enamel and dentine demineralization caused by acids formed from bacterial fermentation of sugars derived from diet. Saliva is a complex fluid that almost continuously paths the oral cavity. The composition of the saliva, pH, salivary flow rate, antimicrobial factors and viscosity are all influence the etiology of caries. In this study, selected elements in stimulated whole saliva, pH, salivary flow rate and dental caries experience were studied. The stimulated mixed saliva samples were obtained from (56) dental students (25 males and 31 females) with an age range between (18 - 23) years. Salivary supernatant was analyzed by atomic absorption spectrophotometer for calcium and magnesium, and by ultraviolet spectrophotometer for inorganic phosphate. The assessment of caries experience was carried out by clinical and radiographic examinations. The results showed that the DMFS and DMFT values for females were higher than that of the males in all age groups with significant difference in relations to DMFS and highly significant differences in relation to DMFT. The salivary flow rate and pH values for males were higher than that of females with a highly significant differences. This may explain the high caries experience in females than males. The concentration of inorganic phosphate was higher than that of calcium and magnesium and the females showed lower values than males. This may be attributed to the lower rate of salivary secretion compared to males. Significant difference was seen between males and females regarding magnesium concentration and non significant differences for inorganic phosphate and calcium. Most of the students had low caries experience and the concentration of calcium, magnesium and inorganic phosphate decrease with increase severity of dental caries, with non significant difference between them. A negative correlation was recorded between the concentration of calcium, magnesium and inorganic phosphate with the DMFS and DMFT. Significant relation was found between the concentration of calcium with the DMFS and highly significant difference with DS and DMFT. Non significant difference was found between the concentration of inorganic phosphate with the DMFS and DMFT. This may be due to the fact that the most important buffer in stimulated saliva is bicarbonate. Highly significant difference was found between the concentration of magnesium and DMFS, FS and DMFT. No relation was recorded between the salivary flow rate and pH with the DMFS and DMFT. This is because the increase in flow rate usually accompany by increase in concentration of bicarbonate and rise of pH and decrease in caries experience. A negative correlation was also found between the salivary flow rate with the concentration of calcium and inorganic phosphate and positive correlation with that of magnesium, but significant difference present only with the concentration of calcium.No relation was also recorded between the salivary pH and inorganic phosphate and positive correlation with that of magnesium and calcium, but highly significant difference present only with the concentration of inorganic phosphate in saliva.

The effect of immersion in slurry water or tap water on some properties of gypsum products

Name: Lawa Issac Isho
Nature of the research: Academic
Degree: M.Sc
Specialty: Prosthodontics
Date the discussion:
Supervisor: Asst. Prof .Dr. Amer M. Khamas

Abstract

Some times gypsum cast needs to be immersed in water before trimming, mounting and at the time they are duplicated. This immersion which was done with either tap water or slurry water may affect some physical and mechanical properties. Accordingly this study was conducted to evaluate the changes in surface detail quality and compressive strength of dental casts as a result of immersion in slurry water or tap water.Two different test blocks were used, one for evaluation of surface detail quality and the other for compressive strength. For surface detail test, Total of (80 blocks) were prepared, (40 blocks) for each type of dental stone (type III dental stone and type IV high strength Dental stone), this in turn was subdivided into (2) groups according to the time of immersion either slurry water or tap water (15min, 30min, 60min, 120min). Two additional blocks were made from dental stone (type III and IV) to be used as control blocks (without immersion in tap water or slurry water). Regarding the compressive strength test (64) blocks were prepared, (32) blocks for each type of dental stone, this in turn was subdivided into (2) groups according to the previously selected time of immersion either in slurry water or tap water. Moreover eight additional blocks made from stone and die stone (4 each) as a control block. The obtained results for the prepared specimens showed that the immersion in tap water produced a significant change in surface detail reproduction, while in slurry water no changes were observed. The immersion of (type III) dental stone in both slurry water and tap water result in a significant reduction of compressive strength while for (type IV) dental stone the reduction of compressive strength was not significant after immersion of the blocks in both slurry water and tap water. In conclusion the immersion of (type III and IV) dental stone block in slurry water cause no significant change for the surface details of the block, while the change was significant when immersed in tap water. For compressive strength property, the immersion of (type III) dental stone block in tap water and slurry water cause a significant reduction in compressive strength. While for (type IV) dental stone the reduction in compressive strength was not significant after immersion in both slurry water and tap water.

The effect of two demineralizing agents on apical sealing of retrograde filling materials

Name: Bassam Karem Amin
Nature of the research: Academic
Degree: M.Sc
Specialty: Conservative Dentistry
Date of the discussion: 5/8/2008
Supervisor: Lecturer Dr. Raid Fahim
Lecturer Dr. Ra'ad Niama

Abstract

This in vitro study evaluated the effect of two different demineralizing agents (EDTA and phosphoric acid)on the sealing ability of different retrograde filling materials and compared the leakage of MTA with other two filling materials (amalgam and RM-GIC). Seventy human roots were used in this study and had been instrumented by protaper rotary files and then obturated using lateral condensation technique with non standardized gutta percha cones , then 3 mm. root end were resected using diamond fissure bur and retrograde cavity had been prepared with standardized dimensions and 3 mm. depth were selected for these cavities .The samples were randomly assigned into 3 groups as following ; Group A, demineralized by EDTA ,and subdivided into three subgroups , Al : retrofilled with MTA , A2: retrofilled with amalgam , A3 : retrofilled with RM-GIC . Group B , demineralized by phosphoric acid , and subdivided into 3 subgroups , Bl : retrofilled with MTA , B2: retrofilled with amalgam , B3 : retrofilled with RM-GIC .Group C, retrofilled with MTA without using any demineralizing agents. All the samples were randomly assigned into these 7 groups of 10 each. The outer surface of the samples were sealed with 3 layers of nail varnish and the coronal orifice sealed with zinc-oxide eugenol cement, leaving the apical surface exposed to the dye solution. Afterwards, all the samples were immersed in2% methylene blue dye for 72 hours. Stereomicroscopic examination of the samples was done later after bucco-lingual longitudinal sectioning of the roots into 2 halves. Data have been collected from 2 examiners according to the score conducted for this study and statistically analyzed using t-test and one -way ANOVA test. The results showed that there was non significant difference between all the tested materials with in favor of MTA using phosphoric acid, at $p > 0.05$, and there was highly significant difference between the tested materials with in favor of MTA in case of EDTA at $p < 0.01$, using ANOVA test. For all the materials used, there was non significant difference between the 2 demineralizing agents using t-test at $p > 0.05$. In conclusion, the MTA showed the least microleakage values among the other materials for the EDTA and phosphoric acid demineralization, and the MTA sealing ability was not affected by the type and mechanism of action of the different demineralizing agent. The MTA showed lower leakage value generally with using the demineralizing agents regardless their type.

The effect of chlorhexidine on load deflection of nickel titanium Orthodontics archwire (an in vitro study)

Name: Mahdi Salih Abdulla
Nature of the research: Academic
Degree: M.Sc
Specialty: Orthodontics
Date of the discussion:
Supervisor: Asst. Prof Dr. Nagham Al-Mothafar

Abstract

A vital component of the fixed orthodontic appliance is the orthodontic arch wire. Nickel titanium wires were widely used within orthodontics as they combine shape memory effect and Superelastisity with excellent corrosion and mechanical properties. This study was aimed to investigate the effect of chlorhexidine application as a mouthrinse (antiplaque formula) on the load deflection of nickel titanium orthodontic arch wires. Straight sections of 4 cm length from round nickel titanium arch wires (0.016 inch) were cut from the legs of preformed arch wires and divided into five groups incubated at 37° C in special incubator. An ordinary and wiped with 70% ethanol nickel titanium arch wires had been tested. The first and second groups were the ordinary and wiped types that had been immersed in a pool of collected saliva. The third and the fourth groups were those that had been immersed in a chlorhexidine / saliva cycle, one minute chlorhexidine to 12 hours saliva, this cycle was repeated for one month. Then the measurements were held at 4 times intervals for all the four tested group, 1st 2nd 3rd and 4th week respectively. The last tested group; was kept at room temperature (22° C) in a pool of 0.5% chlorhexidine, then the load deflection was tested after 30 minutes (disinfection) and 10 hours (sterilization). The load deflection of the nickel titanium arch wire was measured with a specially designed apparatus based on the mechanism of 3-point bend test. The results showed that, there was no significant effect on the amount of load deflection of nickel titanium arch wire after the use of chlorhexidine as a mouth rinse during orthodontic treatment. While, a significant loss of flexibility had been found after sterilization procedure with 0.5% chlorhexidine.

Shear Bond Strength of Different Adhesives for Bonding Stainless Steel Bracket on Primary Second Molar

Name: Omer Fawzi A. Jabbar
Nature of the research: Academic
Degree: M.Sc
Specialty: Orthodontics
Date of the discussion:
Supervisor: Asst. Prof Dr. Nagham Al-Mothaffar

Abstract

This study was conducted to evaluate the shear bond strength of four different adhesives that can be used to bond a bracket on a lower second primary molar when anchorage is needed and its successor is congenitally missed. Therefore a sample of forty human lower second primary molar were selected and divided into four equal groups to which the brackets of lower second permanent bicuspid were bonded using a specific adhesive, COMPOSITE which is a two step chemical cure composite resin used for the first group, Advantage which is a one step no mix chemical cure composite resin used for the second group, ADHESOR CARBOFINE which is a zinc polyacrylate cement used for third group and maxxion R which is a glass ionomer cement used for the fourth group. A locally modified machine was designed to measure the amount of shear bond strength of the previously mentioned adhesives, and the amount of remnant material of adhesive left after debonding was evaluated on both bracket and tooth surface through ARI (adhesive remnant index) using a stereoscope with a magnification of X10. The results revealed that COMPOSITE has the highest shear bond strength followed by Advantage then ADHESOR CARBOFINE and the least one was maxxion R; concerning the failure site test, both COMPOSITE and Advantage adhesives showed that most of their material remnant was on the tooth surface while for ADHESOR CARBOFINE and maxxion R most of their material remnant was on the bracket base. On the other hand, no relation was found between shear bond strength of the adhesive materials and the mode of failure site ($p>0.05$) In conclusion composite (COMPOSITE and Advantage adhesives) is the best adhesive that can be used to bond a bracket on a lower second primary molar tooth and the failure site modes is not dependent on the shear bond strength but mostly depends on the retentive mean of the bracket base.

Dental Erosion Among 11-12 Years Old Schoolchildren in Erbil City

Name: Hemn Muhssin Suleiman
Nature of the research: Academic
Degree: M.Sc
Specialty: Pediatric Dentistry
Date of the discussion: 9/1/2008
Supervisor: Asst. Prof Dr. Zainab Abdul-Rudha Al-Dahan

Abstract

The objective of this study was to determine the prevalence of dental erosion in schoolchildren of Erbil city and to compare different etiological factors related to dental erosion in the study group and their controls.This study was conducted among (3711) schoolchildren, (11-12) years old which represent delay mixed dentition in (33) primary schools in Erbil city, comprising a study group with sever erosion (48) children, (31) males and (17) females, the other compared controlled subject are (48) children without erosion and caries free selective sampling matching for both age and gender. The level of erosion was recorded by using modified tooth wear index (MTWI), standarized methods for salivary flow rate and PH measurements were conducted. The role of various possible factors related to oral health in general and to dental erosion in particular was assessed for both study and control groups by means of multiple choice questionnaire. The results of this study showed that the prevalence of dental erosion in the sample was (9.45%), distributed as (2.61%) mild erosion, (5.55%) moderate erosion and (1.29%) sever erosion, significantly more erosion was observed in males (5.76%) than in females (3.69%). A significant lower salivary PH mean (7.15 ± 0.95) and salivary flow rate mean (0.46 ± 0.29) were found in erosion group, whereas in the control group they were (7.49 ± 0.67), (0.61 ± 0.35) respectively. The results demonstrated a significant higher carbonated drink intake and higher drinking at night habit (62.5%) than that in control group (39.5%). No associations were found between the level of parent education, oral hygiene practice, fruit juice intake, methods of drinking and dental erosion. The dental practitioners must be aware of their important role to recognize dental erosion and understanding its pathogenesis so that correct diagnosis and management of erosion can be performed.

Prevalence of permanent maxillary malposed canine in a sample of students of secondary schools in Erbil city

Name: Brwa Mahdi Aziz
Nature of the research: Academic
Degree: M.Sc
Specialty: Orthodontics
Date the discussion: 12/7/2008
Supervisor: Asst. Prof .Dr. Zewar A. Qassab
Asst. Prof .Dr. Namir Al-Tawil

Abstract

The maxillary canine is the longest and one of the strongest teeth in human dentitions, it maintains the contour and shape of the dental arch, occlusion and facial expression. It is an essential tooth from the point of view of esthetics, function, and dental prosthesis. The main objective of this study is to identify the prevalence of the canine malposition in a sample of students and secondary schools of Erbil city, also to describe the characters of the canine malposition and their association with other factors and variables. Through examining 1480 students aging from (15-18) years in Erbil, the sample size of malposed canine was (161) for both genders. Cases with malposed canine are examined for different factors and variables like malposition side for (right, left, and bilateral), position (labial, or palatal), levels for grade A, B, and C (Index of malposed canine levels) and the levels relation to other variables, also canine malposition relations with other variables like (canine width, space deficiency, family history, psychological complaint, midline shift, canine classification, molar relation, canine rotation and angulations, adjacent lateral incisor, breathing pathway). The study revealed that the prevalence of malposed canine was 10.88%, more tendency of malposed canines in females than males, higher percentages on left side than right side, differences of malposed canines appear between male and female also for variables like (malposed canine levels, psychological complaint, canine rotations, family history, width of canine). Since different values of malposed canine appear between male and females, between left and right, various accounts for different relations among variables, indicate that the causes of malposed canine are multifactorial, affected by different (environmental, gender, family history) factors.

Correlation between periodontal Disease and serum dislipidemia

Name: Muhammad Aziz Ahmad
Nature of the research: Academic
Degree: M.Sc
Specialty: Periodontics
Date of the discussion: 8/5/2008
Supervisor: Asst. Prof. Dr. Zewar Al-Qassab

Abstract

Periodontal diseases is usually a slow, painless, progressive disease. Most adults with periodontal disease are uniformed they have it. If they are diagnosed and treated early the teeth can be saved. Concerning the relation between periodontitis and aging it was reported the older person may have a greater prevalence of periodontal diseases than the rest. The aim of this study was to determine and compare the periodontal parameters and lipid profiles between the hyperlipidemic patientes {the study group) and normal (the control group), and to correlate the periodontal parameters with lipid profile in both groups. A periodontal clinical examination was done for 40 subjects using the periodontal parameters (Plaque Index, Bleeding On Probing, Gingival Index, Probing Pocket Depth and Clinical Attachment Loss), 20 of them had elevated serum lipid level either (Cholesterol, Triglyceride or Low Density Lipoprotein) while the rest had normal serum lipid level. All of them were living in Hawler city, aged 30-52 years; the sample was composed of nearly equal number of males and females, (18) males and (22) were females. Also for estimation of cholesterol, TG and LDL (USA Rand ox laboratories Kit) was used. This study has demonstrated that in general, the prevalence of periodontitis was nearly the same in hyperlipidemic and normal subjects. The level of lipid was increased with increasing age in both groups. This study shown that there is no association between periodontal disease and hyperlipidemia so periodontal disease is not increase risk factor for Cardio Vascular Disease through out lipid profile but most of the cases need oral health education and some of them need scaling.

A double blind comparative study of nimesulide and naproxen on postoperative pain & swelling following periradicular surgery

Name: Dilman Najmaddin Muhammd
Nature of the research: Academic
Degree: M.Sc
Specialty: Maxillofacial Surgery
Date of the discussion: 28/6/2008
Supervisor: Lecturer Dr. Ahmed A. Haidar
Consultant Reiadh K. Al-Kamli

Abstract

The study was designed to evaluate the effect of nimesulide and naproxen (non steroidal anti-inflammatory drugs) on the postoperative pain and swelling following periradicular surgery of one of the upper anterior teeth. Sixty patients suffering from periapical lesion requiring periradicular surgery without retrograde filling were included. They were divided into three groups according to the type of medicament administered postoperatively.
Group A: Nimesulide administered group
Group B: placebo administered group
Group C: Naproxen administered group
Postoperative pain and swelling were assessed during the five postoperative day subjectively by using visual analogue scale (VAS), the relation of pain and swelling to the age,gender and size of the surgical cavity has been evaluated also, Each group of patient took the same shape of capsule. The three groups of patients informed about the nature of the trial & asked to sign the prepared consent form, and each patient postoperatively took with him two charts one for pain and the other for swelling in order to give good judgment on the degree of their pain and swelling. The results showed that postoperative pain after periradicular surgery reaches its maximum intensity during the 1st day of surgery, while postoperative swelling is most marked after 24 hrs.Both nimesulide and naproxen are effective in reducing postoperative pain and swelling following periradicular surgery but nimesulide proved better control for postoperative pain and swelling Age, Gender and size of the surgical cavity have no significant effect either on pain nor on the amount of swelling postoperatively, except in placebo administered group females record higher pain scales than males.

Evaluation of the effect of different instrumentation & obturation techniques on the apical sealing using two different types of sealers (In vitro study)

Name: Hala Patros Hanna
Nature of the research: Academic
Degree: M.Sc
Specialty: Conservative Dentistry
Date of the discussion: 28/6/2008
Supervisor: Dr. Raid Fahim Salman

Abstract

This in vitro study evaluated and compared the apical sealing ability of three obturation techniques and two types of sealer, and determined the effect of two instrumentation techniques on the obturation and apical sealing of the samples. A total of 120 teeth were collected and stored in 50% alcohol solution. Randomly divided into two groups; sixty roots prepared using step-back technique with hand Ni-Ti K-files. Other 60 roots prepared using hybrid technique with Gates Glidden drills and hand Ni-Ti K-files. In both techniques the master apical files were size # 35. 17% EDTA solution with 5.25% NaOCl were used as irrigants between instruments sizes to remove the smear layer and organic debris. Each group of instrumented teeth was subdivided randomly into three obturation groups of 20 roots for each; in group A- lateral compaction technique was used, and in group B- warm vertical compaction technique was used, while in group C- injectable thermo-plasticized gutta-percha was used. Each one of these obturation techniques was used twice; once with ZOE sealer and other with AH26 sealer with 10 roots for each. Then the samples in all groups left for a week at room temperature to allow the sealer to set. At this time radiographic images were taken for each sample in a bucco-lingual direction. After this the coronal 1mm of gutta-percha removed by hot Ash and filled with ZOE cement to provide coronal seal. All the surfaces of the roots were covered with three layers of nail polish except the apical 2 mm. Then the samples were immersed in 2% methylene blue dye for 72 hours. Then each sample was sectioned longitudinally using diamond disc and chisel in a mesio-distal direction. The buccal and lingual halves of the roots were fixed in to a microscopic slide using sticky wax, and examined under the stereomicroscope. Data had been collected from two independent examiners and statistically analyzed using student t-test. The radiographic results showed that the injectable thermo-plasticized gutta-percha technique showed better radiographic results than warm vertical compaction, which in turn was better than cold lateral compaction; however, the difference was non-significant in the comparison between the warm vertical compaction & the cold lateral compaction techniques. While the stereomicroscopic results showed that there was highly significant difference between step-back and hybrid techniques, with in favor of step-back technique. Concerning the obturation techniques, warm vertical compaction showed best apical sealing followed by injectable thermo-plasticized and finally lateral compaction technique, however, the differences were not significant. Regarding sealers, AH 26 sealer had better sealing ability than ZOE sealer with highly significant difference between them. As conclusion, the warm vertical compaction obturation technique in combination with the AH 26 resin sealer obturates the canals with lesser apical leakage. The step-back technique had better results in shaping the canals with better sealing apically.

Rheumatoid arthritis of the temporomandibular joint in Hawler, A clinical and Radiographical study

Name: Shahen Ali Ahmed
Nature of the research: Academic
Degree: M.Sc
Specialty: Oral Medicine
Date of the discussion: 9/10/2008
Supervisor: Name: Lecturer Dr. Ahmed A. Haidar
Assist. Prof. Dr. Hajer Ibrahem Abdulla

Abstract

The temporomandibular joint (TMJ) may be affected by several inflammatory joint diseases and the disorders that involve the TMJ are not different from those that involve other joints in the body. Rheumatoid arthritis (RA) is one of these diseases. The TMJ is commonly affected in patients with RA, and in patients with other forms of arthritic disease. The objective of this study was to determine the extent of temporomandibular joint (TMJ) involvement in patients with rheumatoid arthritis compared with a matched control group and to evaluate the correlation between clinical findings and radiographical findings. The studied sample comprised 50 patients with rheumatoid arthritis, age ranged from 18 to 72 years with the mean age of 40.98 (± 13.67). Patients were visiting the clinic of rheumatologic consultation unit in Hawler Teaching Hospital during the period between the (10- 1 -2008 till 10 -7-2008) all patients were on treatment .The control group was randomly selected from those patients attending the oral diagnosis department in the Specialized Dental Poly Clinic (SDPC) Hawler city; they consisted of 63 subjects age–matched non rheumatic patients: they had no systemic diseases which may affect the radiographic findings (history of trauma, osteoporosis, osteoarthritis, congenital abnormalities or history of any rheumatic diseases) .All patients had RA diagnosed according to the criteria of the American Rheumatism Association.Each patient was informed about the purpose of the investigation and that it would includes questionnaires, clinical and radiographical examinations. The radiographic examination was done by using double TMJ lateral technique, by means of digital panoramic x ray machine , promax x -ray with Dimax3, manufactured by planmeca Oy, Helsinki, Finland, 2005,each subject was radiographed in two positions, in the open and the closed mouth, left and right sides. It was found that 64% of RA patients complained of two or more clinical sign and symptom compared with 44% of the control group ,the difference was statistically significant ($P< 0.05$), the most important clinical findings were pain on palpation and on opening and closing, crepitation limitation of jaw opening and morning stiffness difference were statistically significant ($P< 0.05$). Among the clinically involved subjects in study RA group 28 subjects (56%) had bilateral involvement, 3 subjects (6%) had right side involved and 1 subject (2%) had only left side involvement. The radiographic involvement of TMJ was found in 16 subjects (32.0 %) of the study group compared with 1subject (1.6 %) of the control group. There is a highly statistically significant difference between the study group and the control group ($P< 0.05$); the most common radiographical findings were erosion. Complete condyler destruction was founded in 1 patient which resulted in anterior open bite. Among involved cases 11 subjects (22%) had bilateral involvement, 5 subjects (10%) had unilateral involvement (3subjects (6%) had left side involved and, 2 (4 %) subjects had only right side involved). There was no correlation between clinical and radiographic findings. There was correlation between the extent of radiographical findings and duration of Rheumatoid Arthritis p value ($P< 0.05$). The clinical and radiographic findings were more common in RA group than in control individual. The clinical and radiographic findings are not always bilateral in TMJ of patient with RA.

Obturation of simulated internal resorption cavities with three different techniques (An in-vitro comparative study)

Name: Media Ali Saeed
Nature of the research: Academic
Degree: M.Sc
Specialty: Conservative Dentistry
Date of the discussion: 9/10/2008
Supervisor: Dr. Raid Fahim Salman

Abstract

This in vitro study compared the instrumentation and obturation quality of simulated internal resorption cavities (IRC) with three different techniques. Ninety extracted human teeth were used in this study, they were sectioned transversely 5 mm from the apex and hemi-circular cavities were prepared in both sections. The sections were glued back together using superglue and embedded in plaster mold, thus obtaining root canals with cavities simulating internal resorption. The samples were randomly divided into 3 groups of 30 roots for each as follow; group A, instrumented by step-down pro-taper rotary files, group B, instrumented by hybrid technique, and group C, instrumented by step-back technique, then each group subdivided into three subgroups of 10 roots for each as follow; 1: obturated with cold lateral condensation, 2: obturated with warm vertical compaction, 3: obturated with injectable thermo-plasticized technique. After obturation, the samples were radio-graphed in bucco-lingual and mesio-distal view to evaluate the quality of obturation. After that, the plaster molds were removed, and the samples were then sectioned at the previous level and the quality of the obturation of the IRC were viewed under stereomicroscope. Data had been collected by two examiners for each radiograph and stereomicroscope image according to the criteria scores conducted for this study and statistically analyzed using t-test. The results showed that there was highly significant difference in stereomicroscopic evaluation between pro-taper rotary files compared with hybrid and step-back techniques with in favor of pro-taper rotary files at $p<0.01$, while in the radiographic evaluation, the differences were non significant between the groups with in favor of pro-taper rotary files at $p>0.05$. The results of obturation techniques in both radiograph and stereomicroscope showed that there was highly significant difference in between injectable thermo-plasticized technique compared with cold lateral condensation and warm vertical compaction techniques with in favor of injectable thermo-plasticized technique at $p<0.01$, where as the differences between cold lateral condensation and warm vertical compaction techniques were non significant at $p>0.05$ generally. In conclusion, the pro-taper rotary files as instrumentation technique and injectable thermo-plasticized technique as obturation technique gave the best results in instrumentation and obturation of root canals with simulated internal resorption cavities (IRC).

Evaluation of Periodontal Bone loss in male Smokers using Digital Bite-wing Radiography

Name: Fedil Andraws Yalda
Nature of the research: Academic
Degree: M.Sc
Specialty: Oral and Maxillofacial Radiology
Date of the discussion: 9/10/2008
Supervisor: Assist. Prof. Dr. Ziwar A. Al-Qassab
Assist. Prof. Dr. Lamia H. Al-Nakib

Abstract

The role of smoking in periodontal disease has been extensively studied for many years. Clinical and epidemiological studies build up an increasing amount of scientific data which support the concept that tobacco use is an important risk factor that has a clear association with the prevalence and progression of alveolar bone loss. The aim of the present study was to compare the amount and type of alveolar bone loss by using a digital radiographic analysis between non-smokers, mild-smokers and heavy-smokers. Total sample composed of ninety subjects, aged between (35-45) years. Thirty non-smokers (mean age of 39.7 ± 2.793), thirty mild-smokers (mean age of 39.9± 2.7 with mean pack year of 3.48 ± 0.984) and thirty heavy-smokers (mean age of 39.8 ± 2.917 with mean pack year of 7.115± 1.447). The study was cross sectional. Periodontal examinations done for all posterior teeth except third molar and it was limited to probing pocket depth (PPD) and Clinical attachment loss (CAL) for control of sample size, without any statistical analysis clinically. Radiographical analysis was done from the distal surfaces of the first premolars to the mesial surfaces of the second molars for both arches and sides. The system included in the study was charge-coupled device (CCD) digital intra-oral radiography by using digital bitewing radiograph. The unit of measurement was from cemento-enamel junction (CEJ) to the alveolar crest distance (AC) per site in millimiters. The results were obtained with highly significant difference in the general mean CEJ-AC distance between all three groups with higher mean CEJ-AC in heavy-smokers group (2.704 ± 0.403) than mild-smokers group (2.101 ± 0.376) and non-smokers group (1.693 ± 0.235). Heavy-smokers group has more vertical bone loss than mild-smokers and non-smokers groups. Mean alveolar bone loss is increased among smoker groups (mild- and heavy-smokers) in comparison with non-smoker group especially in maxillary premolar area. The area or surfaces that have high Mean alveolar bone loss MAL located between maxillary first and second premolars. In conclusion, the observations suggest that smoking is associated with increased levels and severity of alveolar bone loss especially for vertical type of bone loss and it's more obvious in maxilla than mandible. Smoking is considered a potential risk factor for alveolar bone loss and the severity was exposure dependent.

Compressive strength and surface Roughness of Die Stone Casts After Repeated Disinification with Sodium Hypochlorite Solution

Name: Jawad Muhammad michael
Nature of the research: Academic
Degree: M.Sc
Specialty: Prosthodontics
Date of the discussion: 9/1/2008
Supervisor: Asst. Prof Dr. Amer Makki Khamas
Asst. Prof Dr. Sundus I. Al-Azzawi

Abstract

The transmission of oral pathogens to impression and subsequently onto gypsum casts has been demonstrated, so dental stone casts have to be disinfected to prevent transmission of infectious diseases. Some times the disinfection process may affect some physical or mechanical properties of the cast. The purpose of this study was to evaluate the compressive strength and the surface roughness of type IV dental stone casts after repeated immersion in (0.5%) sodium hypochlorite disinfectant solution or spraying with the same previously mentioned solution. A test block design was used for both evaluation of surface roughness and compressive strength. For surface roughness test, a total of (42 blocks) were prepared, it was subdivided into (3) groups, control, spray and immersion groups (14 each) which were again subdivided into (2) subgroups (7 each) according to the time of the testing (after 24 hours and after 48 hours), the same distributions of the test blocks were followed for compressive strength test. For each test 1/3 of the test blocks immersed in the disinfectant solution for 30 minutes then allowed 24 hours for bench drying, this was repeated 5 times before being tested, 1/3 of the specimens were sprayed with the disinfectant solution 5 times in an interval of 24 hours for bench drying, the last 1/3 of the blocks were untreated to act as control group. The results showed that immersing or spraying the specimens with the hypochlorite solution significantly decreased the compressive strength if tested after 24 hours, but when tested after 48 hours there was a significant increase in compressive strength value. Regarding the surface roughness test, the results showed that both spraying and immersion significantly increased the surface roughness of the specimens when compared with the control group. Finally dental stone casts disinfected by immersion method showed a higher surface roughness than those disinfected by spraying, it can be concluded that disinfection of dental stone casts by spraying with (0.5%) sodium hypochlorite solution provided smoother dental stone casts surfaces and also provided adequate compressive strength when allowed (48 hours) for bench drying.

Oral Health Status, Treatment Need, Dental Health Knowledge and Behavior among 12 Years- Old School Students In Dohuk Governorate

Name: Mirza Murad Khudeda
Nature of the research: Academic
Degree: M.Sc
Specialty: Preventive Dentistry
Date of the discussion: 24/4/2008
Supervisor: Assist. Prof. Lamia Abdul Khaliq AL-Azzami

Abstract

An oral health survey was conducted among 1310 primary school children aged 12-years-old in Dohuk governorate, In Kurdistan of Iraq. In order to study the prevalence and severity of dental caries, periodontal health condition, dental trauma and the treatment needs of this age in relation to gender, residency and level of father and mother education in addition to dental knowledge, attitude and behavior.Clinical examination indices for the diagnosis and recording of dental caries, periodontal health conditions and the treatment needs were done according to the criteria of the WHO (1987, 1997).The present study showed that the percentage of caries free children was (23.2%). The prevalence of dental caries for 12 years olds was (76.8%), and it was found to be higher among urban (81%) compared to the rural (72%). Concerning the treatment needs, the most frequently required restorative dental treatment was the two or more surface restoration (54.7%) followed by one surface restoration (52.3%). At the same time, most of children were in need for preventive measures.Regarding the periodontal health condition, mild (52.6%) to moderate (47.2%) type of gingival inflammation are most prominent but only (0.2%) of severe gingivitis. Calculus was observed but very little. The distribution of tooth crown fracture index in the present study was (10.4%) of the study sample. The results of statistical analysis show that males (12.7%) more affected than females (8.1%) with significant difference at ($p<0.001$).The present study revealed that dental knowledge, attitude and behavior of students may be affected by level of parent's education. The students with higher father and mother education had better dental knowledge than the students with lower father and mother education.

Biochemical Studies on Salivary Phosphatases Enzymes in Gingivitis

Name: Majid A. Dawood
Nature of the research: Academic
Degree: MS.c
Specialty: Oral Biochemistry
Date of the discussion: 25/10/2008
Supervisor: Dr. Zaenab Abdulwahab Muhamad

Abstract

Salivary phosphatases enzymes (Alkaline phosphatase and Acid phosphatase) were studied in clinically healthy persons (controls) and patients with gingivitis before and after treatment. The work was performed in the period between February, 2008 and August, 2008 in Hawler Medical University - College of Dentistry, Department of Basic science. The oral examination for the subjects and the treatment (scaling and polishing) for the patients were done in Department of Periodontology. The biochemical studies were performed in the laboratory of biochemistry research. Saliva samples were collected from (100) healthy persons, and (50) patients before treatment and 20 days after the treatment, their age ranged between (20-30) years. The subjects with the clinical findings such as swelling of gingiva, bleeding on probing, bleeding on brushing or discoloration of gingiva, were considered as patients, the treatment included scaling and polishing with out medications.

The study included the following axises:

1- Estimation of the salivary Alkaline phosphatase and Acid phosphatase levels in controls and patients with gingivitis before and after treatment.
2- Studying some kinetic parameters of salivary phosphatases enzymes in gingivitis such as: Michaelis constant, maximum velocity and the Hill coefficient using Lineweaver-Burk plots and Hill plots.
3- Determination of the thermodynamic parameters for the transition state of the enzyme-substrate complex in gingivitis such as: activation energy, enthalpy change, free energy change and entropy change and comparing the values with those of controls to evaluate any change in the pathway of the enzyme-substrate complex formation.

The results showed that:-

1- The levels of salivary phosphatases enzymes were higher in patients with gingivitis before treatment comparing with controls, while their levels decreased towards the control values (20) days after treatment. So, salivary phosphatases level can be relevant for the follow-up of gingivitis treatment.
2- The Michaelis constant values for both salivary Alkaline phosphatase and Acid phosphatase decreased in patients with gingivitis comparing with controls, but increased again after the treatment, this emphasized that the affinities of the enzymes for their substrates were affected by the disease.
3- The maximum velocity values for both salivary Alkaline phosphatase and Acid phosphatase increased in patients with gingivitis, but decreased again after the treatment close to those of controls. This emphasized that the catalytic efficiency of the enzyme was affected by the disease.
4- The Hill coefficient values for both salivary Alkaline phosphatase and Acid phosphatase showed that there was no cooperativity in binding of substrate molecules with the active sites on the enzyme in controls and patients with gingivitis after treatment, while there was a negative cooperativity in patients with gingivitis before treatment.
5- The changes in the thermodynamic parameters values of transition state for salivary Alkaline phosphatase were non significant, while their changes were significant for salivary Acid phosphatase, except free energy change.
6- The enthalpy change values for both salivary Alkaline phosphatase and Acid phosphatase were positive in all groups which indicate that the reactions were endothermic.

7- The free energy change values for both salivary Alkaline phosphatase and Acid phosphatase were positive in all groups.
8- The entropy change values for both salivary Alkaline phosphatase and Acid phosphatase in all groups were negative which reflect the change to more ordered structures.
9- The thermodynamic parameters of transition state showed that gingivitis causes a significant change in the mechanism of enzyme-substrate complex formation.

Morphological changes in simulated tiny curved canals over-instrumented with a variety of instruments and techniques

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Nature of the research: Academic
Degree: M.Sc
Specialty: Conservative Dentistry
Date of the discussion: 4/1/2009
Supervisor: Senior Lecturer Dr. Raid Fahim Salman

Abstract

The objectives of this in vitro study were to evaluate first: the effect of over instrumentation using different endodontic instruments made of different materials in different instrumentation techniques on the apical morphology of tiny curved simulated resin canals and second: the incidence of instrumentation mishaps including transportation, zipping, ledging, perforation, blockage and elbow. This study had used 80 resin blocks that had 20º curvatures in the apical last 3 mm and a straight part of 17 mm, the size of the canal was equal to no. 8 .02 ISO K-file. The resin blocks were divided into 8 groups, each had 10 resin blocks, the pre and post-operative images were taken using a digital camera in a standardized manner using wooden platform, in the first 6 groups, over instrumentation by 1 mm was performed using hand instruments (stainless steel and nickel titanium .02 ISO K-files) both in step back and hybrid techniques, and using rotary ProTaper and ProFile systems in crown down techniques, while in the last 2 groups, under instrumentation by 1 mm was performed using hand stainless steel .02 ISO K-files in step back technique and rotary ProTaper system in crown down technique. All instrumentation techniques were performed according to manufacturer instructions or dependable textbooks. PC Pentium 4 using Microsoft Office Visio Professional 2003 version 11.0 were used to measure the morphological differences between pre and post-operative images. Centering ability of the instruments inside the canals, also transportation and zipping caused by the instruments were measured using a mathematical formula (parameter ß= $[(D1–D2)/D] \times 100$), where parameter ß represents centering propensity of the filed canal. The data were analyzed statistically using either Analysis of variance (ANOVA) or t-test and the obtained results had showed that there was a significant difference among the three techniques (step back, hybrid, and crown down) with over instrumentation at $p < 0.05$, with in favor of crown down technique over the other techniques, a significant difference between the hand stainless steel compared with hand nickel titanium at $p < 0.05$, with in favor of hand nickel titanium over the hand stainless steel, a significant difference between the hand instruments compared with rotary instruments at $p < 0.05$, with in favor of rotary instruments over the hand instruments, and a significant difference between the over and under instrumentation techniques at $p < 0.05$, with in favor of under instrumentation techniques over the over instrumentation techniques. The results revealed low incidence of blockage and ledges, but a high incidence of perforation with ProFile rotary system and a general high incidence of elbow in all groups specially group of over instrumentation with hand stainless steel .02 ISO K-files in step back technique. Generally zipping in all groups with over instrumentation was more towards the convex side of the canal while transportation occurred towards convex side of the canal in Ni-Ti groups. As a conclusion, the instruments deviated less frequently during the crown down technique, with in favor always of the Ni-Ti, rotary & under-instrumented files.

Assessment of Microleakage of Four Restorative Materials in Pulpotomized Primary Molars

Name: Hoger Mustafa Najman
Nature of the research: Academic
Degree: M.Sc
Specialty: Pediatrics Dentistry
Date of the discussion: 17/5/2008
Supervisor: Asst. Prof. Dr.Zainab AL-Dahan

Abstract

This invitro study was carried out to assess the microleakage of different restorative materials after pulpotomy procedure in primary molars. Standardized proximo-occlusal cavity preparations were prepared in 40 extracted sound primary lower second molars. Pulpotomy was performed, and pulpotomy paste filled the floor of pulp chamber with hard setting cement over it, all have same occlusal depth. The teeth were then divided equally into 4 groups and restored with different materials according to the manufacturer instructions as follows. (1) Ten teeth filled with amalgam. (2) Ten teeth filled with a packable composite. (3) Ten teeth filled with compomer. (4) Ten teeth filled with a flowable composite. After the teeth were filled, they were stored in distilled water for 30 days at 37^{o}C in an incubator. During the period of storage they were subjected to 300 thermal cycles (10 cycles each day).The roots were sealed by block of cold cure acrylic. Also the crowns were sealed with two layers of nail varnish to within 1mm from the restoration margins then immersed in 2% methylene blue dye solution at 37^{o}c in an incubator for 24 hours and sectioned to record the extent of dye penetration under stereo microscope for microleakage evaluation. The worst result for each section was recorded and results were statistically analyzed using Fisher Freeman Halton test. The results show that amalgam group demonstrates the highest percentage of no leakage of all groups. Amalgam restorations were able to provide the best total margin protection, compomer come after amalgam to have less microleakage and better than packable. The flowable composite restorations did not appear to be leakage resistant materials for pulpotomized primary molars.

The Relation between Unstimulated Salivary pH and Flow Rate with Plaque and Gingival Indices in Pregnancy

Name: Shahida Rassul Hussein
Nature of the research: Academic
Degree: M.Sc
Specialty: Periodontology
Date of the discussion: 27/5/2008
Supervisor: Assistant Professor Dr. Zewar Al – Kassab
Lecturer Dr. Ali Sultan Al – Refai

Abstract

Pregnancy represents a particular systemic condition that is able to induce manifestations of different nature in the oral cavity because of hormonal fluctuation. The purpose of this study was to investigate the relationship between salivary flow rate and pH with PlI and MGI in (150) pregnant women aged (20 – 40) years, and compare the results with that of (50) non – pregnant women of the same age group from the same Maternal and Child Health Care centers in Erbil Governorate. After saliva collection and pH measurement, the PlI and MGI were used for recording the oral cleanliness and gingival health condition in pregnant and non – pregnant women. The mean PlI and MGI in the pregnant were higher than that of non – pregnant women, with non significant differences for PlI and significant differences for MGI. The mean of salivary flow rate, frequency of tooth brushing and levels of education in the pregnant was nearly equal to that of non pregnant women, with non significant differences. The mean of salivary pH in the pregnant was less than that of non – pregnant women, with a highly significant difference. The highest mean of PlI and MGI were seen related to the first trimester, with non significant differences in PlI and significant differences in MGI, between pregnant subgroups and non – pregnant women. The highest mean of salivary flow rate and pH were seen related to the first trimester, with significant differences in salivary flow rate between pregnant subgroups and non – pregnant women and significant differences in flow rate between trimesters of pregnant women, highly significant differences in salivary pH between pregnant subgroups and non – pregnant women and between trimesters of pregnant women. The highest mean of PlI and MGI was seen related to the second month of pregnancy, non significant differences present between PlI and months of pregnancy and highly significant differences between MGI and months of pregnancy. Non significant differences present between flow rate and months of pregnancy, and highly significant differences present between salivary pH and months of pregnancy. The highest mean of PlI and MGI in pregnant women was seen related to the non – brushing group of women, with highly significant differences present between frequencies of tooth brushing with PlI, and non significant differences present between frequencies of tooth brushing with MGI. The highest mean of PlI in pregnant women was seen related to the first and second level of educations with non significant differences between level of education and PlI. The highest mean of MGI in pregnant women was seen related to the first, second, and third levels of education with highly significant differences between level of education and MGI. The highest mean of PlI and MGI in pregnant women was seen related to the age group (35 – 40) years, with non significant differences between the age group with PlI and significant differences between the age group and MGI. The lowest mean of salivary flow rate in pregnant women were seen related to the age group (35 – 40) years with non significant differences between the age group with the salivary flow rate. Non significant differences also present between PlI and MGI with the salivary flow rates and pH in pregnant and non – pregnant women.Therefore, oral health education and promotion programs are urgently needed for the pregnant and non – pregnant women.

Periodontal health status in relation to fluoride concentration in drinking water in Duhok Governorate

Name: Saeed Ali Mohammed
Nature of the research: Academic
Degree: M.Sc
Specialty: Periodontology
Date of the discussion: 10/5/2008
Supervisor: Assistant Professor Dr. Zewar Al – Kassab

Abstract

Periodontitis is multifactorial in nature. The various determinants of periodontal disease are age, sex, race, socioeconomic status,and risk factors including tobacco usage and oral hygiene status. However, there is inconsistent epidemiological data on the periodontal status of subjects living in high –fluoride areas. The objective of this study is to determine the prevalence and severity of periodontal disease in a sample of Duhok population, to determine the association between periodontal disease and the level of fluoride in water. And provide baseline data that can help in planning Preventive periodontal health programs and for further studies in the future. The periodontal status was measured by CPI index in a population aged between 15-19 years residing in different areas of Duhok Governarate. The fluoride levels in water supply were determined by the use of the Atomic absorption methode. A total of 864 individuals was studied, [male 474, (54.9%)] while [female 390, (45.1%)]. The bleeding on probing (score 1) was more common in our study than other groups. The relation between fluoride concentration and periodontal health status (CPI) was highly significant difference at scores (0, 1, and 2) at ($p< o.oo1$), while significant difference in score (3) at ($p<0.05$). The results revealed that there is a high tendency of bleeding on probing in all regions of study and it ovious that special care should be given to the younger age groups of these areas

The effect of different intervention methods on periodontal health in Individuals of different socio-economic levels

Name: Hashim Dawood Musa
Nature of the research: Academic
Degree: M.Sc
Specialty: Periodontics
Date of the discussion: 26/4/2008
Supervisor: Assistant Professor Dr. Dr. Ziwar AL-Qassab

Abstract

Plaque control is the main method for prevention of gingivitis. Mechanical plaque control is widely recognized as helping to maintain plaque control and resolution of gingivitis. A selected sample consists of (240) school child with equal number of males and females of age ranged between (14-16) years old. Plaque is bacteria alive, sticky, and white in color. It is the main cause of gingivitis.

First group (the pupil were examined in a suitable room using portable chair or school chair under portable light the periodontal status was established according to their indices ,the indices which help our study and explain the healthy and diseased periodontium are plaque index and gingival index.

After taking scores of these indices from each pupil of randomly selected sample. We start to motivate him verbally for the first group; the motivation is by learning them that the maintenance of periodontal health (freedom from inflammation, full function) is possible, but this can be accomplished through the cooperative interaction between the pupil and the dentist through continuous visiting to dental clinic to check the periodontal health status, oral hygiene by the pupil means reduction of the amount of plaque and pathogenic organism in the oral cavity.

Evaluation of depth of cure and surface hardness of composite resin polymerized by Halogen and LED light curing units

Name: Muhyaddin Abdul-Rahman Ismaeel
Nature of the research: Academic
Degree: M.Sc
Specialty: conservative Dentistry
Date of the discussion: 27/4/2008
Supervisor: Dr. Raid Fahim
Dr. Ra'ad Niama

Abstract

This is an in vitro study evaluated the effect of two different light curing units (halogen and LED) on two different composite resin materials (Hybrid and micro-filled) by assessing the depth of cure and hardness.

Materials and methods

Depth of cure test: Forty eight acrylic molds were prepared whose internal diameter was 4mm and the height was 10mm, 24 of them were filled by hybrid composite and the remaining 24 were filled by micro-filled composite, 12 of the hybrid composite and 12 of the micro-filled composite were light cured by halogen and the remaining samples were light cured by LED light curing unit. Samples were removed from their molds and the uncured composite at the bottom surface of the specimens were gently scraped away with a plastic instrument until the cured composite is reached. The height of the remaining composite sample is measured with digital vernier.

Hardness test: Forty eight samples of the composite resin were prepared. They were 3mm in height and 5mm in diameter, 24 samples were made from hybrid composite and the remaining 24 were made by micro-filled composite, 12 of the hybrid composite and 12 of the micro-filled composite were light cured by halogen and the remaining samples were light cured by LED light curing unit. Samples were placed in a light proof container and stored for 24 hours at 37º C in incubator. After that, the hardness of the samples was measured using Indentec hardness devise.

Results: The results showed that hybrid composite had a statistically significant higher depth of cure than that of the micro-filled composites. LED light curing unit had a statistically significant higher cure depth than the halogen light curing unit regarding the hybrid composite. There was no significant different between the halogen and LED light curing unit ($p>0.05$) for curing micro-filled composite.

Regarding the hardness study, the results showed that hybrid composite had a higher hardness value than that of the micro-filled composites regardless of the light curing units, however, the difference was non significant ($p>0.05$). There was no significant different in the hardness value of composite cured by either the halogen or LED light curing unit ($p>0.05$) for curing micro-filled composite.

Conclusion: The LED light curing unit can perform as the halogen light curing unit in regard to the depth of cure and hardness of two different composite resin materials.

Oral Health Status, Treatment Needs and Dentofacial Anomalies among (5-16) Years Patients with β-Thalassemia Major Syndrome in Comparison to Healthy School Children in Erbil City

Name: Vian Omer Majeed Salayi
Nature of the research: Academic
Degree: M.Sc
Specialty: Preventive Dentistry
Date of the discussion: 1/4/2008
Supervisor: Asst. Prof Dr. Lamia Abdul-khaliq Al-Azzawi

Abstract

The purpose of this study was to evaluate the oral health status, treatment needs and dentofacial anomalies in beta thalassemia major patients and to compare them with a matched non thalassemic healthy control subjects. The study group consisted of 238 patients (127 males and 111 females) with β-thalassemia major who were attending the Thalassemic Center in Erbil City with an age range (5 – 16) years. A control group consisted of 258 healthy subjects (138 males and 120 females) in kindergartens, primary and secondary schools matching with age and gender were included. Decayed, missing and filled teeth /surfaces index was used for detection of caries experience. Oral health status was recorded by application of plaque index, gingival index and calculus index. Dentofacial anomalies was also recorded. Results of the present study showed that 16.80% of beta thalassemia major patients and 22.86% of students were caries free with statistically no significant difference between the two groups ($p > 0.05$). The (dmfs) in β-thalassemia major group was found to be equal to (5.839 ± 6.588) which was higher than that in the control group (4.713 ± 5.011) with statistically no significant difference. The (DMFS) in the study group was recorded to be (3.478 ± 3.865) while in the control group it was (2.239 ± 2.857). A statistically highly significant difference between the two groups was found ($p < 0.01$). One surface filling was the highest treatment needed in both study and control groups (78.15%, 62.79), respectively. Values of plaque, calculus and gingival indices were recorded to be higher among the study group (PlI= 1.570 ± 0.321, CalI =0.106 ± 0.179 GI =1.525 ± 0.308) compared to control (PlI= 1.266 ± 0.239, CalI =0.029 ± 0.063, GI =1.205 ± 0.195), differences were statistically highly significant for all indices ($p < 0.01$). It was found that 8.51% of the total sample of study group having crowding of anterior teeth in one or both segments compared to 7.75% for the control group with statistically no significant differences ($P > 0.05$). For spacing in the incisal segments it was higher 19.32% in beta thalassemia major patients compared to 13.61% in the control group with statistically significant difference ($P < 0.05$). Nearly similar percentages of children in the study group were found to have an overjet grades (0-3.5mm, 3.51-5mm and >5mm) which were 22.26%, 22.28% and 22.68% respectively. For the control group the higher percentage of children was those having an overjet grade (0-3.5mm) 57.97%. A statistically significant and highly significant differences were found between the two groups for the grades (0-3.5mm and >5mm) respectively. A higher percentage of both study and control groups were having overbite grade (0-3.5mm), 49.59% and 56.81%, respectively. A statistically differences were not significant ($p > 0.05$). It was found that the percentage of beta thalassemia major group with distal deviation from the normal antero posterior molar relation was (37.13%) compared to control group (10.89%) with statistically significant and highly significant differences was found for scores (0 and 2) and score (1), respectively between the two groups. Thalassemia is associated with higher dental caries experience, increased level of gingivitis and dentofacial anomalies.

Occlusal Features and Upper dental arch Dimensions in a sample of controlled thalassemic patients (in Duhok city)

Name: Anees Mahmood Mudher
Nature of the research: Academic
Degree: M.Sc
Specialty: Orthodontic Dentistry
Date of the discussion: 21/5/2009
Supervisor: Assist. prof. Dr. Nagham Almothaffar

Abstract

This study was performed in Duhok city, to determine any variations in occlusal features and upper dental arch dimensions between β-thalassemic major patients, who were under treatment regimen and skeletally normal subjects. Sixty three thalassemic patients were selected (32 males and 31 females), who were attending the thalassemia center in Duhok city with an age range 13-23 years. A selected matched group of 30 healthy subjects (16 males and 14 females) with class I occlusion were selected as a control. Study models for upper and lower arches were constructed to evaluate occlusal features which were over jet, over bite, molar and canine classification; and ten linear measurements for the upper dental arch and these included dental arch widths, lengths and palatal measurements. Digital sliding caliper gauge had been used and the following results were obtained:-

1. Class I molar relationship ratio is more than class II, while Class II canine relationship ratio is more than class I.
2. Increased overjet represented with the lowest percentage in both total and males thalassemic patients, while females showed with the highest percentage.
3. Normal overbite was the highest percentage in thalassemic patients' males, females and total group.
4. Crowding was seen in 41.3% of the thalassimic sample, whereas spacing form 36.5% and the minimum percentage represented with a normal alignment (21.2%).
5. Maxillary arch measurements in thalassemic patients were lower than controls.
6. Thalassemic patients with crowded arches were significantly different from the control group unlike those with spaced or normal alignment.
7. Maxillary arch measurements in thalassemic patients had more independent correlations compared with the control group.

Pain and swelling after lower 3rd molar surgery (a comparative study between three methods of wound closure)

Name: Omed Ikram Shahab
Nature of the research: Academic
Degree: M.Sc
Specialty: Oral & Maxillofacial Surgery
Date of the discussion: 1/4/2008
Supervisor: Lecturer Dr.Tarik M. Abdulla
Lecturer Dr.Ahmed Abdulla Haider

Abstract

Three closure techniques after surgical removal of impacted third molars were compared in terms of post-operative pain and swelling. Ninety patients with impacted third molars were randomly divided into three groups of thirty each (from March 2007 to September 2007). Panoramic radiographs were taken to assess the positions and angulations of third molars, and the relation to inferior dental canal. In Group 1, the wound was completely closed. In Group 2, a 5-6 mm wedge of mucosa distal to the keratinized mucoperiosteum of mandibular 2nd molar was removed for drainage. In Group 3, a polythene tube drain inserted through the buccal mucoperiosteal flap of mandibular 2nd molar for drainage. Pain and swelling were evaluated for 7 days after surgery with the visual analog scale (VAS scale). The effect of age, gender and duration of surgery on postoperative pain and swelling was also evaluated. The statistical analysis (analysis of variance for repeated measures, P < 0:05) showed no significant difference between the three groups with regard to pain (P = 0.183) except for day 7, in which a significant difference was reported (P = 0.0.19), between Group I and Group II. Swelling was not significantly different between the three groups (P = 0.349). No correlations were found between age, or duration of surgery, and postoperative complications. Gender has no significant effect on postoperative pain (P = 0.061) or swelling (p = 0.285). We conclude that different closure techniques have no significant effect on postoperative pain and swelling. Age, gender, and duration of surgery have no significant effect on postoperative pain and swelling.

Digital panoramic radiographic study of the mental and the mandibular foramina locations in the (23-25) year's old age group patients

Name: Khoshi Salih H. Al-Mufti
Nature of the research: Academic
Degree: M.Sc
Specialty: Dental Radiology
Date of the discussion: 7/4/2009
Supervisor: Prof Dr. Ali F. Al-Zubaidee
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Abstract

The mental and mandibular foramenina are frequently needed to be encountered in a number of maxillofacial surgical procedures. Their positions have been shown to vary according to race and age. The aim was to study on digital panoramic radiographs the relative vertical and horizontal position of mental foramen image and its relations to the apices of lower premolar roots and also to study the relative anteroposterior position of mandibular foramen image. The digital panoramic images of a selected age group with their date of birth between (1982-1984),that means (23-25) years old were collected from the records of Specialized Dental Poly Clinic and were analyzed according to patient's gender and side . This study includes 93 saved images with a male to female ratio of (0.94:1). Mental foramen was visible in72 cases (77.41%) while mandibular foramen was visible in 55 cases (59.13 %). The relative vertical position of mental foramen on digital panoramic images on the right side of male and female groups were (0.614±0.05 and 0.625±0.02) respectively and on the left side of male and female groups were (0.627±0.06 and 0.619±0.04) respectively. Unpaired student t-test showed no significant difference between the sides of both groups.Comparison using paired student t-test showed no significant difference between the right and left of each group alone; for male group was (0.611±0.04.on right side and 0.626±0.06 on left side) respectively and for female group was (0.628±0.04 on right side and 0.621±0.03 on left side) respectively. The most frequent horizontal position of mental foramen was in the area between the long axes of first and second mandibular premolar teeth. The most frequent relations of mental foramen to the apices of lower premolar roots was below the level of apices of mandibular premolar teeth roots. The relative anteropostrior position of mandibular foramen on the right side of male and female group were (0.590±0.08 and 0.582±0.1) respectively, and on the left side of them were (0.607±0.09 ,0.569±0.1) respectively. Unpaired student t-test showed no significant difference between them. Paired student t-test showed no significant difference between the right and left of each group alone, for male group which was (0.600±0.07 on right side and 0.607±0.08 on left side) respectively, and for female group was (0.574 ±0.09 on right side and 0.582 ±0.1 on left side) respectively which include those cases which mandibular foramenina were clear on both sides only. We have concluded that the relative vertical position of mental foramen on digital panoramic images was slightly below the midpoint between 2nd premolar cusp tips and lower border of mandible in both group and sides. The most frequent horizontal position of mental foramen was in the area between the long axes of first and second mandibular premolar teeth. The most frequent relations of mental foramen to the apices of lower premolar roots was below the level of apices of mandibular premolar teeth roots. The relative anteropostrior position of mandibular foramen on digital panoramic images was slightly posterior to the midpoint of mandibular ramus in both groups and sides.