

Poster Communications

CARIOLOGY/EPIDEMIOLOGY/ PREVENTIVE DENTISTRY

1. PREVALENCE OF DENTAL CARIES AMONG SCHOOL CHILDREN IN THE DEPARTMENT OF HEALTH OF DENIA BETWEEN 2003 AND 2014

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Introduction: Dental caries is the most common chronic childhood disease and it can lead to serious general health problems. It is an infectious transmissible disease with a multifactorial origin involving the characteristics of the host (saliva and dental enamel), the oral flora (bacterial plaque) and the substrate on which it develops (oral hygiene and diet). In the Community of Valencia annual oro-dental examinations are carried out in schools of children aged 5-6 years since the start of the Oro-dental Health program.

Objective: The aim of this work is to measure the prevalence of caries, in the primary as well as the permanent dentition, in school children aged 5-6 years in the department of health of Denia from the year 2003.

Material and methods: Data was collected of the oro-dental checks carried out by the Preventative Dentistry Unit of the Department of Health of Denia (Alicante, Spain) from the year 2003 to 2014 in all the teaching centers of the area. The examinations were carried out by hygienists and/or dentists of the UOP first thing in the morning in order to avoid food remains from lunch. The materials used were a sterile examination mirror per schoolchild, nitrile gloves, mask, torch and registration sheets. An area with natural light was found in the teaching center for better vision during the examination.

Results: The data from 2003 to 2014 were gathered, and the school children examined totaled 15,552 (n = 15,552). Caries prevalence in the primary dentition was between 25.26 and 35.8%. This figure fluctuated depending on the year but it showed no increase or decrease pattern. In the permanent dentition it was between 0.37% and 5.02% descending over recent years. However, in the latest epidemiological study carried out in the Community of Valencia in the year 2010 caries prevalence in the primary dentition was 30.0% and 5% in the permanent dentition.

Conclusions: The prevalence of caries continues to be high in the primary dentition although it is within the Comunidad de Valencia index. Intervention should be focused on prevention at an earlier age and on checks during the first school year at the age of 3 years.

2. ETIOLOGY OF MOLAR INCISOR HYPOMINERALIZATION: A SYSTEMATIC REVIEW

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Introduction: The prevention of MIH (Molar Incisor Hypomineralization) has increased notably over recent years in the child population, in particular in European countries. However, there are very few studies with a proper methodology that permit reliable conclusions on its etiology, prevention and control.

Objective: The aim of this investigation was to carry out a systematic review of the literature published over the last 15 years as well as to evaluate the quality and reliability of the evidence in these publications.

Method: A search of the literature was performed online using various databases (Medline, Embase, Scopus and WOS), using a combination of 6 MeshTerms: “molar incisor hypomineralization”, “etiology”/”aetiology”, “dental caries”, “dental fluorosis”, “amoxicillin” and “MIH”. All the possible combinations of these words were examined. Two independent examiners evaluated the titles and abstracts of all the papers and they agreed on those articles to be used and those to be discarded. After this the papers were studied in depth and the quality of the evidence was assessed using a checklist developed by these authors based on Strobe’s criteria.

Results: Of the 165 publications found, 25 were finally chosen. After reviewing these, firm conclusions were not found to clarify the etiology of MIH at the present time. The level of evidence of the publications on the subject was low with regard to methodology, and not all the studies were specific for MIH. Infections, pharmacological treatment and conditions related to nutrition in the first three years of life were the most repeated variables in the publications as possible etiological or risk factors for developing MIH.

Conclusions: The current evidence on the etiology of MIH is limited in number of publications as well as in quality. New studies are needed, preferably with a prospective design, with improved identification of MIH, and that follow standardized protocols that can easily be reproduced.

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3. ORAL HEALTH EDUCATION FOR PREGNANT WOMEN AND BABIES

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Introduction: It is well known that the mouths of pregnant women may experience changes that can be physiological as well as pathological, and that these changes are related to the systemic health of the mother and baby.

Objective: The aim of this study was to examine the knowledge and attitude of pregnant women with regard to their oral health that of a newborn baby, of a child and of an adolescent, as well as to assess dental and soft tissues disease.

Methodology: The study was carried out by an orodental health unit of the Health Service in Albacete over ten years with the consent of the pregnant women who were attending the care program.

Results: The changes are presented in oral health knowledge during the pregnancy, the increased motivation of the mothers and the reduction of habits leading to oral disease in children aged 0-6 years.

Conclusion: It can be said that the creation of the prevention program on oral disease among pregnant women in this unit was a success based on the pregnant women and the staff attending them.

4. PREVALENCE OF MOLAR INCISOR HYPOMINERALIZATION (MIH). A REVIEW OF THE LITERATURE

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Introduction: Molar-incisor hypomineralization (MIH) is a qualitative defect of the enamel of systemic origin and still unknown etiology that affects permanent first molars and sometimes permanent incisors. The prevalence in the literature varies from 2.8 to 40.2% of the world's child population. Following the reduction in the prevalence of caries among children, European countries have seen over the last ten years a greater interest in research into the developmental defects of enamel that are on the increase, and especially into hypocalcification of the enamel.

Objectives: To carry out a review of the literature and an update on the prevalence of molar-incisor hypomineralization.

Methodology: A search was carried out in the databases of EBSCO, PubMed, Google Academic, WOS of the literature published between 2003 and 2004 with the key words: "hypomineralization tooth", "MIH" "molar", "incisor" and "dentistry".

Results: A total of 64 articles were found, of which 28 were used. The criteria chosen were the most current papers and those that dealt with prevalence. *Analysis:* The rates reported in Europe vary from 3.6% to 37.5%. In Spain a prevalence of 7.94% was registered in Barcelona by Hernández et al. in 2004, which is less than the

prevalence registered by Martínez et al. in 2012. Outside Europe there have been fewer studies, although these do show a prevalence that is very low such as in Hong Kong (2.8%), Libya (2.9%) and very high in Brazil (40.2%). The prevalence of this disturbance is variable at a world level, a situation that is explained in part because the studies do not contemplate patients of the same age, or because the diagnostic or inclusion criteria for the patients is different.

Conclusions: The prevalence of molar-incisor hypomineralization varies considerably from study to study. However, the increase of this entity around the world is of concern. MIH is a condition that has been accepted worldwide, however, certain diagnostic criteria should be brought up to date in order to standardize the bases for new research.

5. MANUAL BRUSHES VERSUS ELECTRIC BRUSHES. HAVE YOU CHOSEN THE BEST ORAL HYGIENE OPTION FOR YOUR CHILD?

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Introduction: Plaque control is the daily removal of bacterial plaque, which prevents its accumulation on tooth surfaces or adjacent gingival areas. If carried out efficiently, it will prevent the appearance of gingivitis, resolve the incipient stages and delay the formation of calculus.

Teaching patients about dental plaque and how to remove it is one of the fundamental steps of all dental treatment. For this, certain substances can be used that color the bacteria and make it more visible.

Plaque control is a fundamental part of prevention and the success of any dental treatment. Efficient brushing is considered to be the mechanical elimination of supragingival and subgingival plaque that is carried out at home personally or if the person's psychomotor capacities are limited, by his caregivers. There are different types of brushes and different techniques for brushing teeth.

The World Dental Federation has established that there is no best technique for brushing teeth personally. "There is no ideal technique for brushing teeth" the best brushing technique is the one each person develops to achieve what is most important, which is the total elimination of bacterial plaque.

Objective: The aim of this study was to compare the efficiency at reducing the plaque index of manual and electric toothbrushes in school-age children.

Materials and methods: The type of toothbrush (manual and dental) was assessed through anamnesis of parents and medical history of the school-age patients attending the dental clinic.

Next the presence of bacterial plaque was evaluated clinically by means of tri-color disclosing tablets. The tablets permit identifying recent plaque (pink color), plaque that is more than 48 hours old (blue or purple color) and mature plaque with strong acid production (light blue).

Results: This study revealed that the manual brush was the most used by patients in comparison with the electric brush. Significantly statistical differences were not found and determining the most efficient brush was therefore not possible.

Conclusions: The results of this study indicate that the efficiency of manual and electric brushes is similar if used correctly.

6. EARLY CHILDHOOD CARIES: A REVIEW OF THE LITERATURE OF THE CAUSES, DIAGNOSIS AND TREATMENT

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Introduction: Early childhood caries (ECC) is an infectious disease that can appear at a very early age and it represents a serious public health problem. ECC can be a virulent form of caries, starting shortly after tooth eruption, developing on smooth surfaces, progressing rapidly with a lasting negative impact on the primary and secondary dentitions. The relationship between breastfeeding and ECC is complex and confused given the many variables that intervene such as *Streptococcus mutans*, enamel hypoplasia, sugar intake, as well as the social variables, such as the education of parents and socioeconomic level. Carious teeth require professional treatment in order to eliminate the foci of infection, restore the stability of tooth function, and improve the aesthetic and phonetic aspects of the children affected.

Objective: To describe the epidemiological and clinical characteristics of EEC, to analyze the pertinent risk factors, and to provide an update on the prevention and treatment methods possible.

Material and method: A review of the literature was carried out using Medline-PubMed of papers written in English or Spanish, published in dental journals and within the last ten years.

Results: With these criteria 17 articles were found, the abstracts were read and only those that dealt with ECC, its etiology, influence of feeding type, and application of fluoride were chosen. Non-accessible articles were excluded.

Conclusions: ECC has increased lately and it goes largely untreated in preschool children. Indicators of considerable risk that are accepted are excessive exposure to fluoride, consumption of sugary foods, low socioeconomic status of family, visible biofilm on teeth, knowledge of the family on ECC and levels of *Streptococcus mutans*.

7. BREASTFEEDING: ADVANTAGES AND RISK FACTORS ASSOCIATED WITH EARLY CHILDHOOD CARIES

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Introduction: Breastfeeding is one of the best habits that a mother can offer a newborn baby as it favors the development of orofacial structures. The correlation between prolonged breastfeeding and early childhood caries is a very controversial subject as caries has a multifactorial origin and it cannot be associated to just one factor.

Objectives: To review the literature on the benefits of breastfeeding for nursing babies; To analyze the correlation between breastfeeding and the risk factors of early childhood caries; To draw attention to the importance of adopting preventative measures for controlling early childhood caries.

Methodology: A search was conducted of the literature in the databases of PubMed and EBSCO between 2009 and 2014 using the keywords: “breastfeeding”, “lactation”, “dental caries”, “early childhood caries”.

Results and analysis: The American Academy of Pediatrics has established that breastfeeding on its own is the ideal nutrition for the first 6 months of life. It recognizes that there could be a potential risk of caries in children who are being breastfed and who are exposed to repetitive and prolonged feeding with fermentable carbohydrates and without the right oral hygiene. However, the Spanish Association of Pediatrics affirms that there is no scientific evidence to demonstrate a relationship between breastfeeding and the appearance of early childhood caries.

Some authors claim that prolonged breastfeeding, on demand and at night, is one of the principal causes of early childhood caries, but that there are other factors such as: diet, hygiene and education received. They argue that breastfeeding on its own should be encouraged up until sixth months, and that nocturnal feeding should be discouraged after the eruption of the first tooth.

Conclusions: It can be concluded that there is consensus on the many and diverse advantages of breastfeeding. Prolonged breastfeeding, on-demand and at night, is one of the main causes of caries appearing. The duration and time of day appear to be decisive factors. Diet is also very important, and education on oral health and hygiene. However, there is a lack of unanimity on the role of breastfeeding in early childhood caries. The importance of visiting a pediatric dentist during the first year of life so that parents receive information on preventive guidelines should be stressed.

8. ORAL HEALTH STATUS OF PEDIATRIC PATIENTS WITH TYPE I DIABETES MELLITUS

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Introduction: Diabetes mellitus (DM) is a metabolic disorder that is characterized by chronic hyperglycemia due to peripheral insulin resistance, secretory dysfunction of this hormone or both. This produces a disturbance in the metabolism of carbohydrates, lipids and proteins.

The sustained increase of high blood glucose levels generates a reduction of salivary flow, and it reduces peripheral vascular response which favors an accumulation of bacterial plaque and the formations of tartar. It is also attributed with the development of caries, halitosis, xerostomia and periodontal disease.

Diabetic patients have certain characteristics that put them at a higher risk of suffering complications in the oral cavity.

Objectives: To determine the prevalence of caries, accumulation of bacterial plaque, gingivitis, periodontitis, xerostomia and halitosis in pediatric patients with type I diabetes mellitus.

Methodology: For this study we carried out a search in the literature over the last 6 years. The bibliographic material was found in text books, doctoral theses, and articles were accessed using the search services of PubMed, Medline and Google scholar. The key words used were: Type 1 diabetes mellitus, juvenile diabetes, dental caries, oral hygiene, salivary glucose and xerostomia.

The inclusion criteria used were patients in studies with type 1 diabetes mellitus without other diseases and who were aged between 3 and 15 years. Patients over the age of 16 were excluded as were patients with other associated pathologies such as cardiovascular disease, obesity or smokers.

Results: 118 articles were obtained from the search previously mentioned, of which 24 were chosen for the review.

Conclusions: Based on the results obtained, diabetic patients showed a high incidence of oral lesions, and there was a highly significant relationship between periodontitis, gingivitis and dental caries. Dentists should be aware of these manifestations and they should be taken into account when the diagnosis is given, and any dental treatment should be suitable for diabetic patients.

9. UPDATE ON DECIDUOUS TOOTH ERUPTION: DIFFERENT STEPS TO BE TAKEN

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Introduction: The primary or deciduous dentition erupts, in general terms, between the ages of six months and three years. The physiological process triggers both general and local symptoms. The systemic symptoms include fever, gastroenteritis and skin irritations. At a local level there is dribbling, pain and puritus.

This has led to tooth eruption being the object of study by many authors, as treating babies with high fever, gastroenteritis and other "milk teeth" related problems is increasingly common.

The manifestations during primary tooth eruption are currently a challenge that should be properly managed and followed by both a general practitioner and dentist.

Objective: The present study is aimed at setting out the symptoms and manifestations of tooth eruption in

babies, as well as the palliative methods that can be used during this period such as: teethingers, gels for drooling and homeopathy.

Methodology: To develop this subject, a review of the literature was carried out using a search in the electronic databases (PubMed/Medline, Google Scholar and Web of Sciences) of articles published over the last 15 years. Keywords were used such as "deciduous tooth" / "primary teeth" / "síntomas erupción" / "dentición temporal" / "deciduous teeth manifestation" "eruption treatment", in order to be able to perform a literature review on the subject.

Results: 43 articles were found on tooth eruption and its consequences. The main manifestations in this process were: fever, gastroenteritis, skin irritation, dribbling. Treatment consisted chiefly in homeopathic products, teethingers, cold and gels as palliative products.

Conclusion: Being familiar with the signs of primary tooth eruption is essential for pediatric dentists. Deciduous teeth that are breaking through require proper care and management, and for this family guidance on the use of natural remedies such as cold, teethingers, gels and analgesic or homeopathic medication will help to alleviate these symptoms.

10. UPDATE ON AGE AT ERUPTION OF THE FIRST TOOTH AMONG A POPULATION OF 120 CHILDREN

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Introduction: As a child grows the appearance and development of the first teeth are the easier aspects to observe and monitor. Tooth eruption is the movement of a tooth from its position in the alveolar process to its functional position within the oral cavity, and it is closely related to the growth of the jaws. According to the literature the most common chronology of eruption of the primary teeth is understood to be the lower central incisors that erupt within a time frame of 6 to 8 months. Despite this, many factors may lead to chronology disorders such as sex, race, weight, size and some systemic disturbances, socioeconomic status, or bottle and breastfeeding habits and duration.

Objectives: To determine the age at eruption of the first primary tooth among a child population and to find out which tooth erupts first by comparing the study sample.

Material and method: A cross-sectional descriptive study was designed of a population of 120 pediatric patients, 56 boys and 64 girls aged 0 to 12 months who attended a healthcare center in area 2 of Cartagena (Murcia, Spain). A pediatrician collected the data during the corresponding checks at zero, two, four, six, eight and twelve months. She noted in their medical file the date the first tooth erupted.

Results: Of the cases reviewed in this study, 1% of eruptions took place between 0 and 2 months. The first

tooth erupted between 3 and 4 months in 12%, between 5 and 6 months in 43%, between 7 and 8 months in 17%, between 9 and 10 months in 20%, but between 11 and 12 months the first tooth only erupted in 5%.

Conclusions: Tooth eruption varies considerably from one case to another. There is variability in the chronology and eruption sequence of the first teeth. More studies are needed to determine the exact cause of tooth eruption as many factors could be involved.

11. LACK OF AWARENESS REGARDING CARIOGENIC FOOD AMONG A SPANISH POPULATION SAMPLE

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Introduction: A study was carried out together with a review of the literature in order to obtain information on the type of diet consumed by pediatric patients and to identify and summarize the most commonly consumed cariogenic food. In this study a series of surveys was carried out on which food parents considered most influenced the appearance of caries and which they considered did not.

Objectives: To evaluate the lack of knowledge of a Spanish population sample with regard to what food has a greater cariogenic risk.

Material and method: Pediatric patients were examined between the ages of 2 and 14 years. We asked the parents to fill in a diet sheet which was handed in during the second visit.

In addition we put together a survey in order to determine what food was most commonly consumed, and in which the parents answered what food they believed to be the most cariogenic and what food they believed was not.

Results: We observed that responsible behavior in this oral health was the repeated intake of sugars, many unknown to patients and their parents.

Conclusion: Early childhood caries can mostly be attributed to a lack of knowledge by parents as to what food has a lower cariogenic index.

12. TURNER'S TOOTH. CASE PRESENTATION AND MINIMUM INTERVENTION TREATMENT

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Introduction: Turner's tooth is defined as a localized defect of the surface of the enamel that is characterized by hypoplasia and/or hypocalcification. It affects only the permanent dentition and the most likely etiology is inflammation or traumatic injury to the primary dentition, examples being: the presence of retained root fragments

with a focus of infection, traumatic extraction of ankylosed teeth and pulp treatment failure during the early development of the crown of the successor.

This type of hypoplasia arises when there is extensive local destruction of the ameloblasts that determine the deposit of an acellular cement-type material, as a result of a metaplastic effect on the dental crown. The treatment can be given at two different points of the child's development and it can either be preventative or remedial.

Objective: To demonstrate the treatment of Turner's tooth with minimum intervention in an adolescent patient.

Case report: Male patient aged 12 years who attended the pediatric dental clinic of the UACH complaining of sensitivity of tooth 35, but that did not require analgesic treatment. The oral examination revealed that the structure of the tooth had been affected and a hypoplastic type IV tooth according to Silberman's classification. His relevant medical history included a pulpotomy four years previously and a chrome crown on tooth 75. He reported sensitivity to air, cold food and chocolate of tooth 35. Treatment was started in two phases. In order to eliminate the sensitivity remineralization was carried out with a topical paste with bioavailable calcium phosphate for ten minutes. The patient remarked that he immediately felt a reduction of the excessive sensitivity.

The patient was told to use the topical paste at home after brushing twice a day for two weeks. The second phase of the treatment consisted in placing type II glass ionomer cement for three months. The third phase was reconstruction with photocurable resin so that the tooth had aesthetic function.

Conclusion: As a result of the development of new biomaterials, minimally invasive restorations are now possible. The results are immediate and long-term and the structure of the tooth is not affected. Symptoms such as pain and dental sensitivity can be reduced and even eliminated, prognosis improved and sequelae diminished while obtaining the best aesthetic results.

13. RELATIONSHIP BETWEEN SALIVARY pH AND THE APPEARANCE OF CARIES

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Introduction: Dental caries is a disease that is influenced by multiple variables that are directly and indirectly interrelated. It is considered that saliva is the most important factor in the mouth. It prevents demineralization of the enamel because it contains calcium, phosphate and fluoride in addition to buffer agents. The acid-base balance in plaque is essential. The acidogenic bacteria in dental plaque rapidly metabolize carbohydrates, the final product is acid, and the result will be a change in plaque pH. Very low levels of saliva mean that the pH goes below 3-5 increasing the demineralization of the enamel. This results in increased caries.

Objective: To evaluate the association of salivary pH and the appearance of caries.

Material and methods: Study of a group of children of the European University of Madrid (Spain) and of a private clinic from Italy between the months of March-May 2015. The study was comprised of a total of 100 children aged between 5 and 10 years of both sexes. Salivary pH was evaluated with pH test strips, and the caries index present was registered.

Results: It was observed that in an acid media there was a greater prevalence of caries.

Conclusions: Salivary pH could be considered a risk factor for the development of caries in the population studied.

14. EARLY CHILDHOOD CARIES. A REVIEW AND CASE REPORT

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Introduction: Over the last two decades the American Association of Pediatric Dentistry (AAPD) adopted the term “early childhood caries” (EEC) recognizing that it is a disease defined by the existence of one or more decayed (cavitated or non-cavitated), missing (due to caries) or filled teeth in the primary dentition, in children under the age of six years. In children under three years the term adopted is severe early childhood caries (S-ECC). It has multifactorial clinical features and it is frequently associated with diet and poor oral hygiene. Microbial markers will reveal the presence of *Streptococcus mutans* (SM) and *Lactobacillus* (L).

Case report: The case is presented of early childhood caries with regard to treatment options and restoration materials. A review of the recent literature on the subject was carried out.

The female patient, date of birth 27/03/2011, approximate weight 14 kg, no relevant disease nor medication, followed by a pediatrician, balanced diet, absence of parafunctional habits, no family history of relevant diseases. Before her first consultation (13-05-2014) she was not using fluoride toothpaste so she was prescribed with 1500 p.p.m. fluoride toothpaste. She had good oral hygiene, first carried out by the mother and then by herself. She had inactive carious lesions in teeth 5.5 and 6.5 and active lesions in teeth 8.5 and 7.5. She received treatment for teeth 8.5 and 7.5 on 06-10-2014 and 20-10-2014, respectively. A spherical turbine drill and a dental excavator were used, and the teeth were restored with Ketacfill glass-ionomer.

Results: This case report is curious given the early age the caries appeared and the patient’s medical history which contained neither diseases, nor poor oral hygiene nor an unbalanced diet. Only demineralization/caries was observed in the primary teeth. According to the AAP-AAPD (2014), epidemiologically, ECC cases have a high prevalence in low-income families. Moreo-

ver, Darmawikarta et al. (2013) reported in Canada that a low percentage of children had been for a dental visit who were; under one year, from low income families, with prolonged bottle use and high intake of sweetened drinks, which is in contrast to the case presented.

During the treatment of the carious teeth, a favorable reaction was observed in the girl when we stopped using the turbine drill and started using the dental excavator. Treatment was continued using *atraumatic restorative treatment* (ART) according to the regulations of the AAP-AAPD (2014). Ketacfill glass ionomer was used given the fluoride release characteristics of this material. There is not much information with a statistically significant value on its function compared with other materials: modified glass ionomer, compomers and amalgam (Yengopal, V., 2009).

Conclusions: The review carried out shows that there are real advantages, backed by scientific evidence, of an early visit to a pediatric dental office. In this way, regular observation and checks can be made of children with a low caries risk, and conservative treatment carried out in children with moderate to high caries risk.

With this case report and after the review performed, it can be affirmed that prevention and motivation are increasingly important factors that should be kept in mind for correct oral hygiene, as well as regular dental visits in order to avoid early tooth loss.

Providing oral health education programs is essential in order to make parents and those in charge of pediatric dental education more aware of putting special emphasis on this area.

15. AGE AND REASON FOR FIRST CONSULTATION OF PEDIATRIC PATIENTS IN THE UNIVERSIDAD INTERNACIONAL DE CATALUNYA

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Introduction: For proper preventative oral healthcare in children, a first visit to the pediatric dentist is recommended at an increasingly earlier age. The American Academy of Pediatric Dentistry and the Spanish Society of Pediatric Dentistry recommend that this first visit is carried out on the eruption of the first milk tooth or before the first year of life.

Objective: To determine the mean age and the most common reason for the first consultation of pediatric dentistry patients at the University Dental Clinic of the Universitat Internacional de Catalunya (UIC).

Materials and methods: The sample was made up of pediatric patients who attended the UDC from December 2012 to December 2014. The medical histories of each patient were reviewed and a document was designed in order to register the mean age and main reason for the consultation of each child during their first visit. The patients with incomplete medical histories were excluded and/or those who had been seen previously by a dentist. The data were analyzed with the statistical program

Statgraphics® Plus version 5.1 (Statpoint Technologies, Warrenton, VA, USA).

Results: The initial sample was of 198 patients but 10 incomplete medical histories were excluded, and the final sample was of 188 patients. Of these 188 patients, it was observed that in 33.51% the main reason for the consultation was “Caries” and the mean age was 71 months. In 35.10% the reason was for a “Check” and the mean age was 85 months; 18.61% attended for “Orthodontic reasons” and the mean age was 104 months; and 12.23% due to an “Emergency” and the mean age was 87 months.

Conclusions: There was a greater prevalence of first visits to the pediatric dentistry department of patients at the UDC with a mean age of 87 months and the most common reason was caries.

ORAL SURGERY

16. PARANASAL TUMOR WITH HISTOLOGY OF ODONTOGENIC MYXOMA IN A PEDIATRIC DENTISTRY PATIENT

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Introduction: Myxomas are benign locally invasive mesenchymal neoplasms that can have an odontogenic, osteogenic or soft tissue origin. Facial myxomas represent only 0.5% of maxillary tumors. Generally they arise more commonly in adults during the third decade of life but in children only a few cases have been observed, and the patients were under the age of 2. The term infant odontogenic myxoma has been proposed due to the unusual and exceptional case in a pediatric dentistry patient.

Objective: To investigate and study a new case of infant odontogenic myxoma, its diagnosis and treatment.

Case report: Male patient 18 months of age, was presented to the pediatric maxillofacial department of the Hospital Universitario de la Paz in Madrid. He had a paranasal tumor on the right side, which had appeared after a traumatic nasal fissure, that was growing progressively and expanding.

A CAT scan was carried out to evaluate the size of the tumor. The presumed diagnosis was of post-traumatic bone cyst. The differential diagnosis was of mucocele and benign tumor of the maxilla.

A histopathological evaluation was considered necessary. This revealed an intraosseous nasal lesion with a proliferation of spindle and stellate shaped cells with a loose myxoid stroma. The changes observed were compatible with an odontogenic myxoma but the behavior did not correspond to a myxoma.

The treatment proposed was complete excision. An intraoral approach was carried out and an expansive bone lesion was removed. It was clinically compatible with an

odontogenic myxoma with destruction of the nasal bone, anterior wall of the maxillary sinus, and a small area of the infraorbital rim. After its removal a PDS (polydioxanone) plate was introduced and the surgical site was closed. The patient is currently being monitored regularly to follow his progress.

Conclusions:

- Infant dental myxoma is unusual in pediatric dentistry ages.
- A differential diagnosis should be carried out with benign tumors of the maxilla.
- The treatment of choice is complete removal of the tumor.

17. COMPOUND ODONTOMA. A CASE REPORT

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Introduction: Odontomas are the most common odontogenic tumors of the oral cavity (34.6%-73.8%). They are slow-growing benign odontogenic malformations of unknown etiology. Most are asymptomatic and are diagnosed radiographically. Generally, they cause retention and eruption delays. According to the WHO they are classified as compound or complex. Compound odontomas have tissues with an orderly shape and similar structure to teeth, but with different shapes and sizes. They tend to be located in the anterior segment of the jaw and they are usually solitary lesions.

Objective: To present a case report of a compound odontoma.

Case report: Male patient aged 9 years and 10 months who came for a first visit to the UVC Pediatric Dentistry Master Degree Course. The reason for the consultation was an eruption delay of tooth 2.1 with regard to 1.1 which had already erupted.

The oral examination revealed tooth 1.1 that was totally erupted and tooth 6.1 that had yet to erupt.

A radiographic examination was performed that included an orthopantomography and periapical X-ray. A well-defined collection of radio-opaque structures was observed with a varied number, size and shape, which were surrounded by a radiolucent halo that represented the capsule of the lesion.

The diagnosis was of compound odontoma located in the apex of 6.1.

In order to extract the odontoma, buccal infiltrative anesthesia was applied with palatal reinforcement. First of all tooth 6.1 was extracted and all the fragments of the odontoma were removed through the socket (approximately seven tooth formations from the size of a grain of rice to a lentil). Further X-ray monitoring confirmed the eruption and descent of incisor 2.1.

Discussion: The odontoma is a very common odontogenic tumor. Da Silva et al. in 2009 concluded that it represents 73.9% of all odontogenic tumors. The frequency of the compound odontoma is 61.3% for Hidalgo

et al, after carrying out a meta-analysis with a sample of 1.340 cases, and 62.3% for Amando et al. in a study of 61 odontomas.

Conclusions:

- Compound odontoma clinically manifests as a disturbance in the eruption of the permanent teeth. The definitive diagnosis should be radiographic.
- The treatment of choice for a compound odontoma is surgical extraction: recurrence is uncommon according to the reviews in the literature.
- The early diagnosis of an odontoma permits controlling and regulating dental eruption as well as preventing future complications.

18. SOLITARY MANDIBULAR CYST

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Introduction: The presence of a well-defined radiolucent image by the root apex of a tooth raises the suspicion of a cystic pathology. Often an examination is aimed at ruling out pulp necrosis secondary to caries or to antecedent trauma to adjacent teeth. When the pathology involves various healthy teeth and there is no previous history, the diagnosis forces us to reconsider the nature and classification of the maxillary bone cyst.

Objective: To present the case of a pseudocyst of the jaw bones with emphasis on the diagnosis, treatment and progress.

Case report: Male patient aged 12 years and 3 months who underwent a routine orthopantomography for orthodontic reasons. He had a well-defined radiolucent image by the apexes of 4.2 4.3 and 4.4. Clinically the soft tissues were not affected, there was no cortical expansion, the patient was not in pain nor were there associated lymphadenopathies. The teeth that were over and adjacent to the radiolucent area responded positively to cold testing. The clinical and radiographic examination endorsed the presumed diagnosis of solitary bone cyst, and a decision was taken to perform open surgery for enucleation and curettage of the bone bed. The surgery and progress later confirmed the initial diagnosis.

Comments: The solitary bone cyst is a benign bone cavity lesion that may contain serohematic fluid, blood or it may be empty. Since it does not have a capsule of epithelial tissue it is also called a pseudocyst. The etiology and pathogenesis are unknown, although various hypotheses exist, the most accepted being traumatic hemorrhage. However, these theories are being questioned as in 50% of cases there is no history of trauma. Usually the definitive diagnosis of maxillary cyst is confirmed by the histopathological study of the lesion. However, in the large majority of solitary bone cysts the cavity is empty. It has been suggested that solitary bone cysts resolve spontaneously, but the surgery on confirming the characteristics and nature of the lesion, rules out possible diagnostic errors.

Conclusions: The solitary mandibular bone cyst tends to be an incidental finding in young adults in the second

decade of life. In these cases the clinical examination should be careful and if adjacent teeth show vitality signs, open surgery will confirm the nature of the cyst and help to resolve the process.

19. PLACEMENT OF POST-TRAUMATIC IMPLANTS IN CHILDREN. A CASE REPORT

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Introduction: The use of plasma rich in growth factor (PRGF) compactors facilitates placing implants in bones of poor quality and solving narrow ridge problems. Replacing lost teeth at an early age is very important due to the possibility of tooth migration and extrusion.

Objective: To present a case report on difficult post-traumatic rehabilitation with dental implants given poor bone density for implant placement.

Case report: Patient aged 17 years came for consultation after suffering a traumatic dental injury with a complicated root fracture of teeth 15 and 16. After extraction and PRGF technology, orthodontic treatment was carried out to straighten the teeth. After this two implants were placed in the position of the extracted teeth when the patient was 19 years old.

Comments: As a result of the use of compactors and PRGF we were able to solve a case of poor bone quality. As claimed by Anitua (2004) good primary stability can be achieved with the use of both compactors and PRGF.

Conclusions: By using compactors and PRGF a high implant success rate can be achieved that a few years ago was practically impossible.

RESTORATION DENTISTRY

20. MULTIDISCIPLINARY APPROACH TO FUNCTIONAL AND AESTHETIC RESTORATION OF ADOLESCENT PATIENTS WITH CLASS III AMELOGENESIS IMPERFECTA

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Introduction: The term amelogenesis imperfecta (AI) refers to a group of hereditary disorders that are clinically and genetically heterogeneous and characterized by enamel defects. They may be accompanied by other disorders in or out of the oral cavity. Genetic transmission of AI is through the X chromosome, either in a dominant or recessive autosomal mode. It is classified according to phenotype, development mechanism and inheritance

mode into four main types: Hypoplastic, hypocalcified, hypomaturation and hypomaturation-hypoplastic with taurodontism.

Objective: To review the diagnostic/treatment aspects and to describe the therapeutic management of an adolescent with amelogenesis imperfecta, in order to reestablish aesthetics and function through conservative treatment consisting in transition, orthopedics and the restoration of occlusion and aesthetics.

Case report: Female patient aged 10 years who came for a consultation as a result of dental sensitivity to thermal change and dissatisfaction with her physical appearance. Her mother appeared in her family history with amelogenesis imperfecta that had been treated with porcelain crowns. On examination all her teeth had opaque enamel and yellow stains. There was considerable destruction to the teeth in the posterior region, and the permanent first molars had failed to erupt. There was considerable destruction of these crowns in the radiography. The clinical and radiographic diagnosis was of Hypoplastic amelogenesis imperfecta with moderate gingivitis associated with abundant bacterial plaque, anterior open bite, skeletal class III and dolichofacial pattern. Her treatment plan included a preventative phase simultaneous to the restoration phase with composite resin veneers for the incisors, orthodontic treatment facilitated by her growth delay, and occlusal/aesthetic restoration treatment with methyl methacrylate crowns.

Conclusion: The right diagnosis and proper transitional treatment is fundamental for maintaining function and restoring aesthetics of adolescent patients affected by this condition. In turn they can experience a better quality of life, while awaiting the definitive restoration.

21. TYPE II DENTINOGENESIS IMPERFECTA: A CASE REPORT

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Introduction: Inherited dentin defects are a rare pathology that mainly affects the dentin organic matrix. There are three classifications of dentinogenesis imperfecta (DI-I/DI-II/DI-III) and two types of dentin dysplasia (DD-I and DD-II). The extracellular matrix of dentin is made up of 10% non-collagenous proteins that are crucial in dentinogenesis. These proteins are coded by the dentin sialophosphoprotein (DSPP). Human mutations of DSPP are responsible for three isolated dentin diseases, DI type II, III and dentin dysplasia type II. DI type II is a localized mesodermal dysplasia that affects the primary and permanent dentition. It affects 1/8.000 live births with autosomal dominant inheritance and high penetrance.

The treatment for these patients tends to be complex and difficult, depending on the seriousness of the enamel fracture, wear, and pulp involvement. The teeth that are affected are not susceptible to dental caries; nevertheless,

they suffer from severe wear which may involve tooth loss and a marked reduction in the vertical dimension.

Objectives: To describe the development, treatment and updated therapeutic guidelines through the presentation of a case report and a review of the literature. This will enable us to reach conclusions on how treatment for this pathology should be focused.

Case report: The hereditary breakdown of the disease is given, with the therapeutic guidelines and monitoring of a male patient aged 8 years affected with type II DI, who attended the department of Pediatric Dentistry of the U.S. aged 4 years. The clinical and radiographic examination revealed generalized amber discoloration of the dentition, severe attrition and root fractures of the primary dentition, together with mastication discomfort and dental hypersensitivity. Currently he has mixed dentition of an amber color and the vertical dimension has been maintained with Cr-Ni crowns.

Comments: The more recent therapeutic recommendation of the AAPD (2013) describe the principal considerations of DI, the importance of preventative action, the different possibilities of the restoration phase and the endodontic considerations. Nevertheless, the moment to start treatment and the severity of the pathology condition these protocols and a multidisciplinary focus is always essential.

Conclusions: One of the greatest challenges for pediatric dentists is providing suitable treatment that will achieve functional and aesthetic restoration of DI cases, which implies early diagnosis and treatment.

BEHAVIORAL DENTISTRY

22. STRESS FACTORS RELATED TO PEDIATRIC DENTAL CARE

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Introduction: Stress makes up a process that encompasses many stimuli and responses and which lead the body to adjust to a certain stress factors (Klatchoian, 2002). Dental academics, as well as dental surgeons, are subjected to various potentially stressful factors on a daily basis that can lead to professional exhaustion (Cardoso, Loureiro, 2004).

Objective: To evaluate the perception of students on the dentistry course of the Universidade Federal de Santa Catarina (UFSC) on the main stress factors related to pediatric dental care.

Materials and methods: Information was gathered using a questionnaire that was applied collectively to the class. The first part was made up of open-ended questions such as sociodemographic data, the specialty identified and relationship with pediatric dentistry. The second part was made up of closed-ended questions with a list

of the main stressor factors when practicing dentistry (Klatchoian, 2002) that were related to child patients. Students who were enrolled in the theory of Pediatric Dentistry in the 8th period participated by responding to the questionnaire a semester previously, before starting dental care, and students in the 9th period who were studying Supervised Practice of Children and Adolescents (ESCA) I. The 9th period was divided into group A that replied to the questionnaire when they were already carrying out pediatric dental care and group B, who had yet to start clinical care.

Results: 130 students participated in the study, 39 were male and 91 were female, and they were aged between 21 and 32 years (mean = 24 years). The students identified three specialties in particular, Aesthetic Dentistry (23.1%), Prosthetics (16.9%) and Endodontics (16.9%). Despite Pediatric Dentistry being chosen by 3.8% of students, 114 (87.7%) replied that they liked children and 77 (59.2%) answered that they enjoyed attending children.

The main stress factors pointed out were: management of non-cooperative behavior (84.6%), patients who did not accept treatment (67.7%); treating pain or anxiety of patient (65.4%) and parents who did not follow instructions (60.8%)

Conclusion: Dealing with non-cooperative behavior was the main stress factor related to pediatric dental care.

23. ADOPTION AND PEDIATRIC DENTISTRY

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Introduction: Adoption is an increasingly common phenomenon involving children of different nationalities and age groups arriving to different countries. In times gone by, due to a high birth rate and lower socio-economic development, children were abandoned in institutions or orphanages, and there was a huge offer of children for adoption. The present study will enable us to discover how these children are affected physically and neuropsychologically depending on the different countries of origin of each child.

Objective: To determine the problems of children adopted from different countries of origin and the relationship with dental care.

Methodology: Literature search of neurological reviews, in articles related to behavior, disorders and psychological adjustment of adopted children, in English and Spanish. Key words: behavior/*conducta*, adoption/*adopción*, pediatric dentistry/*odontopediatría*, neurologic disorder/*trastornos neurológicos* autism/*autismo*.

The inclusion criteria were articles in English and Spanish as from the year 1990 until the present.

Results: According to the literature it appears that the origin of adopted children plays a very important role, and there was a greater tendency for them to be from Asia (China, India and Thailand), Eastern Europe (Romania, Russia and Ukraine) and Latin America (Colombia, Ecuador, Peru, Guatemala and Nicaragua).

Given that a high percentage of children adopted from abroad in their initial medical evaluation have health problems (malnutrition and infections from their country), and once the social and health risks to which the children have been exposed are known, they are children with a risk of having problematic behavior disorders and social adjustment. In view of all this, cooperation at the dental office may be affected.

Conclusions: Adoption is a complex procedure that takes time, and it requires both the family and the child to adapt. The care these children receive is very important, as is being familiar with any diseases they may have. This care will depend largely on where they come from but this knowledge will help us to have a better idea of the health problems that they may have.

As pediatric dentists it is our duty to care for these children properly and to facilitate their adjustment to the new family and their integration into a new social and community environment. For this we will have to put into practice all the techniques we know to for improving the behavior of the child in order for any treatment to be successful.

24. UPDATE ON BEHAVIOR MEASUREMENT SCALES IN PEDIATRIC DENTISTRY

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Introduction: Due to the educational and generational changes that we are witnessing, behavioral problems in children are increasing, which has made dental practice more difficult. According to the literature there are various scales to help pediatric dentists measure behavior and anxiety levels in children, which will help us to anticipate and become familiar with the behavior of a child, thus enabling the successful completion of the different treatments.

Objectives: Our aim was to investigate which scales are currently the most used and the reason for this.

Methodology: A literature search was carried out in PubMed with the key words: *escala/scale*, *comportamiento/behaviour*, *niños/child*, *odontopediatría/pediatric dentistry*.

The inclusion criteria were articles in English and Spanish as from the year 1997 until the present.

Results: Scales can be a useful method for forecasting the behavior of a child in the consultation room, and for providing the most suitable care. On reviewing the literature we found various scales, the most used being: Corah's Dental Anxiety Scale, which is made up of 5 basic questions that can be answered by the patient or in very small children by their parents. The Frankl scale is divided into four categories, definitely negative to definitely positive. The Houpt scale that measures crying, drowsiness and movement, made up of four points, is used mostly for cases of sedation. The visual analogue scale (AVS) by Wong and Baker, and faces pain rating scale, is based on the child's expression and it serves to tell us if the treatment is causing pain or not.

Conclusions: Behavior direction or management is the means by which pediatric dentists efficiently carry-out their treatment, and for this reason it is up to them to select the most suitable scale. Each scale depends on the observation of specific behaviors. Up until now the most used by Pediatric Dentists is the Frankl scale given that it is the most specific and the easiest to apply, and it can also be adapted to any age.

25. THE EFFICIENCY OF PHARMACOLOGIC AND INHALATION CONSCIOUS SEDATION FOR REDIRECTING BEHAVIOR IN THE PEDIATRIC DENTISTRY CONSULTING ROOM

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Introduction: Phobia, stress, and anxiety are factors that stop regular treatment being carried out in the pediatric dentistry office. Redirecting this disruptive behavior using pharmacologic techniques, such as nitrous oxide inhalation combined with hydroxyzine and/or benzodiazepines, is advantageous. However there is another type of disruptive behavior with origins that are not based on dental fear. These are defiant children, and the use of inhalation anxiolysis techniques for this group of patients is controversial.

Objectives:

- To analyze if conscious sedation redirects or not the behavior of a patient during and after sedation.
- To become familiar with the profile of a patient who is referred for conscious sedation, the drugs that are more efficient and the possible combinations depending on the child.
- To evaluate if conscious sedation allows the scheduled treatment to be carried out.

Material and methods: A search of the literature was carried out in the scientific literature that dealt with the criteria for channeling pediatric patients to inhalation conscious sedation. For this the databases of PubMed, Scielo, EBSCO and the Spanish Society of Pediatric Dentistry were consulted using the keywords: behavior, children, pediatric dentistry, conscious sedation, nitrous oxide, midazolam, hydroxycyane, Atarax®, child, dentistry.

Results and discussion: The results of the literature review for assessing the profile of pediatric patients who are referred for inhalation conscious sedation, show that the majority of authors agree that pediatric patients with cooperation difficulties should be treated with combined inhalation conscious sedation.

Conclusions: It was concluded that the use of nitrous oxide for dealing with patients with disruptive behavior was positive, and in most cases it allows scheduled treatment to be carried out. Inhalation sedation may be contraindicated for defiant zero cooperation children who may lose their inhibition, leading to even worse disruptive behavior. More studies are needed to analyze if the behavior of a patient after sedation can be redirected,

which would permit dental care without oral drugs and/or inhalation.

26. THE INFLUENCE OF PROTECTIVE BARRIERS IN THE BEHAVIOR OF A CHILD

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Introduction: There are various factors that can affect the behavior management of a child during dental treatment (age, a previous disagreeable dental experience, parental attitude...) and this will influence the cooperation of the child during the consultation. For this reason the pediatric dentist should keep in mind all these factors and personalize the behavior management of each child. This will ensure the best treatment conditions and the safety of both the child and the dentist. Over recent years a positive change has taken place with regard to protective barriers during dental practice. The use of gloves, glasses and masks is now used routinely in order to protect both the operator and patient from cross-infection as well as to increase the degree of safety and confidence of patients.

Objective: To observe if protective barriers influence the behavior of a child in the dental consultation room.

Methodology: A literature search was performed using the databases of PubMed of articles in English and Spanish published between 2007 and 2014 as well as the guidelines by the American Academy of Pediatric Dentistry.

Results: The protective barriers in Pediatric Dentistry have a positive effect on parents, providing increased satisfaction, safety and comfort before the pediatric dentist. Moreover, no statistically significant differences were observed with regard to the behavior of the child when the treatment was carried out with or without protective barriers, nor was the color or shape of these significant.

Conclusions: The behavior of a child in the dental consulting room has a multifactorial etiology (environmental, psychological, familial and educational factors), however, this behavior can be improved with behavior management that is particular to each pediatric dentist. Protective barriers are a necessary way of preventing cross-infection between patients and dentists and they do not influence the behavior of a child during dental treatment.

27. INFLUENCE OF THE AGE OF THE PEDIATRIC DENTIST ON THE COOPERATION OF A CHILD

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Introduction: The cooperation of a child is an important factor in dental procedures. The success of dental practice depends not only on the technical skill of the

dentists but also on their capacity for achieving and maintaining child cooperation. Most children try to cooperate, in these cases the dentist should not only support this behavior but he should try to maintain it. Anxiety and fear have been identified as a source of problems in behavior management in the dental clinic. However, factors that may influence the anxiety of being before a dentist are related to sex, age of the patients and other factors.

Objectives: To find out through a literature search and a study based on surveys if the age of the pediatric dentist influences the behavior of a child.

Materials and methods: A search of articles in Pubmed was performed with the key words fear, anxiety, influence on behavior of a child with age of the pediatric dentist.

Results: Articles that related age of the pediatric dentist with behavior of the child were not found, but other aspect related to pediatric dentists were found. Sixty pediatric patients of whom 38 were girls and 22 were boys and who were being seen at the dental hospital of the University of Barcelona (Spain), participated in a survey on the subject using visual material. Children who were older than 8 years were chosen. They replied that they would chose a younger dentist given that they are more accessible, friendly and patient.

Conclusions: According to the study carried out, young pediatric dentists can influence the behavior and cooperation of a child and they will obtain a positive response to dental treatment. However, being able to relate to children depends more on skill than on age. Successful treatment will depend on pediatric dentists searching for options to reduce fear and anxiety.

28. CONVENTIONAL VS. COMPUTERIZED LOCAL ANESTHESIA

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Introduction: One of the problems we face as pediatric dentists is fear of the needle and sensitivity or pain from the infiltration of local anesthesia. Topical anesthetics eliminate the unpleasant sensation of the needle being introduced, but the pressure exerted manually with the syringe and the speed at which the anesthesia is injected is difficult to control. The sensation of the surrounding tissues expanding can be quite unpleasant and it may be confused with pain.

Objectives: To compare two anesthesia techniques by means of the subjective assessment of the degree of pain on carrying out local infiltration anesthesia techniques, one conventional with a syringe and one with the Calaject® system, in order to assess which system had the greatest acceptance as a result of being the least disagreeable and producing a lower sensation of pain. And to study, at the same time, the possibilities of using the Calaject® system as a distraction technique in child behavior management.

Materials and methods: The Calaject® system from the manufacturers Akura with computerized anesthesia, a syringe of local dental anesthesia, 2% lidocaine carpules with vasoconstrictor. After duly informing the parents or tutors of patients between 4 and 12 years who were attending the Dental Clinic of the UCH-CEU for the practical classes of Pediatric Practicum, a subject in the 5th year of Dentistry, and after having received informed consent, the technique of infiltrative anesthesia was carried out in the upper arch with the two systems available, the conventional one and Calaject®. The patients were given pain scale faces in order to obtain their opinion on the sensation produced by each of these.

Results: The anesthetic technique using the Calaject® system was the most accepted (between 95 and 98%) out of a total sample of 100 children. They had experienced no sensation of discomfort or pain during the perfusion of the liquid anesthesia and in addition they were easily distracted.

Conclusions: The Calaject® system is a great help in Pediatric Dentistry as it minimizes the extension of tissues during anesthetic infiltration and it also offers distraction possibilities due to its design characteristics and acoustic signals.

ORTHODONTICS

29. ORTHODONTIC EMERGENCIES ON THE MASTER DEGREE COURSE IN PEDIATRIC DENTISTRY

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Introduction: Over recent years the increase in the demand for orthodontic treatment has been very evident and, as a result, so have the emergencies related to this field. These emergencies represent an inconvenience for the patient and it may even interfere in their daily lives. There is a great variety of adverse effects related to this discipline, some are more banal and can be minimal lesions produced by rubbing, or more complicated problems may arise such as root resorption.

Objectives: A literature review was carried out in order to study the most relevant orthodontic emergencies that may be encountered in the dental consulting room. A follow-up was carried out of emergencies occurring on the masters degree course of the European University in Madrid in order to provide guidance on treatment and prevention.

Material and methods: A review of the literature was carried out over the last 15 years using the databases of PubMed and medical journals (*Dental Press Journal of Orthodontics, Journal of Oral Rehabilitation, American Journal of Orthodontics and Dentofacial Orthopedics...*), and text books.

Results: After studying the different emergencies that occurred in the consulting room of the Master Degree Course of the European University of Madrid between the years 2014 and 2015, the emergencies that arose most frequently were identified as: loose appliances, boils, ulcers, lip cheek or tongue wounds from different parts of the orthodontic treatment (loosening of arch wire, sores produced by brackets...), loosening of brackets and gingivitis.

Conclusions: Prevention is our greatest ally with regard to these emergencies. We should give our patients advice on their new situation. Patients with deficient oral hygiene should receive motivation as they will experience a greater accumulation of plaque and their new appliance will make brushing harder (they should receive instruction on the type of brush, technique, toothpastes and accessory elements such as irrigators...). They should be told how to look after their appliance, wax brackets and any sharp points that may lead to lesions in the mucosa and different oral surfaces, and what type of food they should avoid in order to minimize the risk of the apparatus loosening and falling off. When prevention has not been sufficient we recommend the use of different palliative treatments for the different emergencies that we have mentioned.

30. BREASTFEEDING AND POSTERIOR CROSSBITE IN THE MIXED DENTITION

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Introduction: The WHO recommends exclusive breastfeeding for the first six months of life as the risk of infectious diseases of the gastrointestinal and respiratory tracts are reduced. Breastfeeding has also been associated with more favorable growth of the jaws and it could have a beneficial effect on the development of occlusion.

Objectives: The main aim of this investigation was to analyze the relationship between the duration of breastfeeding and occlusion at the age of 9 years.

Material and method: This was an observational study. The sample was made up of 170 children who belonged to a longitudinal follow-up of a cohort. A calibrated dentist carried out an orodontal examination at the age of 9 years in a dental chair using epidemiological indexes of malocclusion. The information on breastfeeding was gathered from questionnaires that were answered by the children's mothers when these were 1 year old. The weeks of breastfeeding with regard to posterior cross-bite (absence, posterior unilateral and posterior bilateral crossbite) were analyzed with one-way ANOVA and *post hoc* tests.

Results: An inverse relationship was found between the weeks of breastfeeding and posterior cross-bite, to the extent that children who were breastfed for fewer weeks had a greater prevalence of posterior cross-bite. A one-

way ANOVA was carried out and the results indicated a significant difference with a lineal trend from the non-presence of posterior crossbite and a greater number of breastfeeding weeks, to bilateral posterior cross-bite and a lower number of weeks breastfeeding.

($p = 0,007$). Breastfeeding turned out to be a protective factor against posterior crossbite (*post hoc* tests $p = 0,022$).

Conclusions: There is a statistically significant relationship between breastfeeding and the absence of posterior crossbite at the age of 9 years. The greater the number of weeks breastfeeding during the first years of life, the lower the prevalence of posterior crossbite at the age of 9 years.

Financing: This study was carried out within project PI12/02570 which was financed by the PN of I+D+I 2008-2011 and ISCIII-General Subdirectorate of Evaluation and Research Development co-financed by the FEDER.

31. DIFFERENT TREATMENT OPTIONS FOR THE SAME CLINICAL SITUATION: TWIN PATIENTS. A CASE REPORT

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Introduction: Class II malocclusion is a dental or skeletal disorder and the most common on a world scale. It manifests at a very early age and it leads to dysfunction in breathing, mastication, swallowing, speech, etc.

Due to the extensive variety of class II malocclusion, it would be illogical to treat all of these equally. The differential diagnosis is the basis for the treatment. Therefore the discriminatory traits in each individual should be identified.

A cephalometric evaluation is needed for the diagnosis and treatment plan of class II malocclusions, and it should locate and identify the anatomic regions affected so that a suitable treatment plan can be suggested, taking into account the etiological factor.

Currently the most appropriate treatment in maxillary orthopedics has gained ground among researchers and clinicians, who are trying to demonstrate which is the best moment and what individual conditions favor the response to the treatment with functional orthopedic appliances.

Objectives: To compare the results obtained with two possible treatment options used for class II in twins.

In one of the cases a functional appliance (Klammt open elastic activator) was used which requires the jaw to move forward in order to correct the malocclusion and maxillary expansion with a coffin spring. In the other case the interposition of the lip was eliminated with a lip-bumper, and a maxillary expander with a Hawley Plaque was used so that the mandible could continue growing.

Case report: The case is presented of twins aged 8 years and 11 months, who attended the dental university clinic for orthodontic reasons. They underwent a clinical examination which revealed that they both had class II div. 1 with lip interposition.

The boy was treated with a Klammt open elastic activator while the girl used a Lip Bumper and a Hawley plate.

Conclusions: Treatment for class II malocclusion is varied and it depends on the right diagnosis, the growth moment and patient cooperation. Similar results were obtained in both patients. The results will depend largely on the skills and preferences of the professional and the type of patient.

32. EARLY EXTRACTION OF PERMANENT FIRST MOLARS WITH SEVERE HYPOPLASIA: FACTORS TO BE CONSIDERED

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Introduction: The term molar-incisor hypomineralization was introduced to describe the clinical appearance of various permanent teeth with very porous and fragile enamel and dentin with a yellow, white or brown color. The reason for this is a disorder in the maturation stage of amelogenesis, that is to say in the first three years of life, when the crown calcification of these teeth should take place. It has a prevalence of between 3.6% and 25%. The treatment varies from just sealing a fissure to more aggressive treatment such as extraction. This option should be kept in mind when a large area is affected, when restoration is not feasible and when long-term maintenance has disadvantages.

Objectives: To consider if the extraction of permanent molars with considerable crown destruction is a valid therapeutic option. To determine the ideal period for this extraction that will encourage spontaneous closure of the space and by posterior orthodontic treatment.

Methodology: A search of the literature was performed using the databases of Medline (PubMed) on the early extraction of permanent first molars affected by hypomineralization, their progress over time and the advantages and disadvantages of early extraction.

Results: The extraction of permanent first molars with severe hypomineralization is a good treatment alternative for cases involving overcrowding and the tooth bud of third molars. Extraction of upper first molars does not tend to be a challenge when trying to achieve mesialization of the permanent second molar, and the first molar can be extracted after it has emerged. With regard to the lower molars, in order for there to be optimum space closure, extraction of the permanent first molars is recommended before the emergence of the permanent second molar, at which point the bud of the third molar can be observed. The final decision should be taken bearing in mind the facial and skeletal characteristics of the patient together with the malocclusion.

Conclusions: The extraction of permanent first molars with severe hypomineralization is a good treatment option for patients badly affected by MIH. A certain amount of spontaneous space closure can take place on

the extraction of the upper molars before the emergence of permanent second molars, and in lower molars before these emerge. This will facilitate orthodontic treatment at a later date and stable occlusion will be achieved.

33. EARLY TREATMENT FOR UNILATERAL CROSSBITE IN THE PRIMARY DENTITION

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Almería

Introduction: Unilateral crossbite (UCB) should be corrected as early as possible in order to establish correct dental and skeletal development. Although there are auxiliary appliances to correct this at an early age in the primary dentition, it is possible to treat UCB with selective filing of teeth and placing composite guide ramps when the crossbite is generalized due to a displacement of the mandible because of occlusal interference. Nevertheless, every case should have medical records reflecting any habits that could cause the malocclusion.

Objective: To correct UCB in patients at an early age with primary dentition.

Material and method: Presentation of two cases of pediatric patients with primary dentition and one case +with mixed dentition and in the first replacement phase. They had unilateral crossbite, selective filing and guide planes for correction. There was a follow-up of these cases for three years after the treatment.

Results: After reviewing 23 cases treated with selective filing and composite wedge placement, the unilateral crossbite was corrected in the primary dentition in all the cases. In the permanent dentition there was one case that continued to have unilateral crossbite, possibly due to an inclination towards the palate of the permanent first molar. Nineteen cases had skeletal class I and 4 skeletal class II at the start of the treatment, and in all cases there were antecedents of oral habits. The results obtained were maintained during the three year follow-up of the 23 cases.

Conclusion: The correction of unilateral crossbite at an early age involves the correct reestablishment of dental and skeletal development at a transverse level, which will prevent future malocclusion and skeletal dysfunction.

34. ALLERGIC CONTACT DERMATITIS DUE TO THE USE OF FACIAL MASKS IN MIXED DENTITION PATIENTS

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Introduction: Allergic contact dermatitis is an allergic reaction after contact with a substance that can be absorbed by the skin. An allergic reaction from an oral orthodontic apparatus containing nickel is relatively

common in orthodontic patients, as are allergies due to extraoral appliances such as the facial mask for the interceptive treatment of class III.

These allergic reactions appear because of the metallic, elastic or plastic materials that are part of these extraoral orthodontic appliances. In patients with extraoral appliances this type of allergic reaction can appear as dermatitis on the face and neck. There may be intraoral allergic reactions, but in most cases the severity is slight or medium and it does not alter the course of interceptive orthodontic treatment.

Objectives: The objectives of this study were: a) To describe the characteristics of these types of lesions in each of the three patients chosen; and b) to propose suitable treatment for each one of them.

Case reports: Three cases of patients are described in the mixed dentition diagnosed with class III malocclusion and treated with a fixed intraoral expander-type appliance with a Petit facial mask. The patients had skin lesions both on their chin and on their forehead (contact areas of the extraoral appliance). These were well-defined, with inflammation, red in colour, and a hot stinging sensation.

Comments: The lesions of the patients presented were similar to those found by other authors in the limited studies to be found in the literature. These studies describe the allergic reactions to appliances with neck or occipital traction but no study made reference to the use of a facial mask as in our study. To date there are no studies in Spain that quantify the prevalence of allergic reactions among patients who wear orthodontic appliances.

Conclusions: Early diagnosis of this condition is fundamental if we are to treat it efficiently. Pediatric dentists should keep in mind that patients using an extraoral appliance such as a facial mask may suffer these types of lesions.

35. PREDICTING AN IMPACTED UPPER CANINE BY MEANS OF THE ERUPTIVE PATH OF THE LOWER SECOND PREMOLAR

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Introduction: The palatally impacted upper canine is an eruptive disturbance and its etiology and early diagnosis is very important. Recent investigations have linked impacted canines with other dental anomalies such as the deviation of the eruptive path of the lower second premolar, and this deviation could be used as a predictive factor for the early detection of an impacted maxillary canine.

Objectives: a) To develop a measuring method that suitably determines the inclination of mandibular second premolars in a panoramic radiograph; b) to determine if there is a relationship between the slant of these and the palatal displacement of the maxillary canine; and c) to establish an angle that allows us to foresee if we have a patient that may be susceptible to a palatal displacement of a maxillary canine.

Material and method: The sample was made up of 100 patients, 51 who had maxillary canines with palatal displacement and a control group of 49 patients. A new system was introduced to determine the angle of the second premolars. For this 4 angles in each panoramic radiograph were measured: angle pm-MP and pm-OP angle +on both sides of each patient.

Results: The method for measuring the inclination of mandibular second premolars had an intraobserver error of 2.7% and interobserver error of 3.5%. Statistically significant differences were found among both groups (control and patients with PDC) and a p value of 0.003 for pm-MP and 0.004 for pm-OP was found.

Conclusions:

1. The method proposed for measuring in a panoramic radiograph the angle of the lower second premolars that have not erupted is a suitable way of determining the inclination and it can be reproduced.
2. The relationship between the inclination of non-erupted lower second premolars and the palatal displacement of the maxillary canine is statistically significant.
3. A value over 35°, of the total of the values obtained for MP-pm and OP-pm should raise the suspicion of a patient at risk of palatal displacement of the maxillary canine.
4. This finding can be used in clinical practice for the early detection of palatally displaced maxillary canine with a positive predictive factor.

36. PREDICTION OF TOOTH SIZE IN NON-ERUPTED TEETH IN CHILDREN BY MEANS OF REGRESSION EQUATIONS

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Introduction: Knowing the size of non-erupted teeth in the mixed dentition is a very important tool for diagnosing a patient. Moyers tables or Tanaka-Johnston tables are not used in clinical practice due to their complexity and because they are not based on the tooth sizes of the Spanish population.

Objectives: a) To evaluate the applicability of the methods of Moyers and Tanaka-Johnston in Spanish children; b) to propose new regression equations using the size of the four permanent lower incisors in order to discover the size of the canine and premolars; and c) to compare our results with those of other populations.

Material and method: 359 Spanish children were chosen for the study which was approved by the Ethics committee of Investigation into Humans of the University of Valencia. The tooth sizes were measured on study models using the digital system 2D. In first place the real measurements for teeth were compared with the predicted sizes in the Moyers tables and the equations of Tanaka-Johnston. In second place some regression equa-

tions were developed using the size of the four lower permanent incisors in order to predict the size of the canines and premolars.

Results: The results showed that the size predictions of the canines and premolars were very different depending on the methods used. The regression equations for estimating the total size of the canines and premolars in both the upper and lower arch in both sexes were: Boys: canine and upper premolar = $12.06 + 0.43$ lower incisor. Canine and lower premolar = $10.71 + 0.46$ lower incisor.

Conclusions: Moyers tables tend to underestimate the real size of teeth while the equations of Tanaka-Johnston tend to overestimate them. The regression equations described are a suitable instrument for predicting dental size of canines and premolars.

37. EVALUATION OF THE RADIATION DOSES OF CONE BEAM COMPUTED TOMOGRAPHY IN CHILDREN AND ADOLESCENTS

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Introduction: The introduction of cone beam computed tomography (CBCT) has meant a big step in imaging diagnosis as it provides information on all the three planes of space. CBCT offers many advantages such as the possibility of viewing high quality images without the limitations of superposition or distortion, real scale reconstruction, speed and ease of examination by means of shorter scans, possibility of measuring the images and lastly, an acceptable cost for the patient. The only disadvantage is the high radiation dose, with this being one of the aspects that should be kept in mind when carrying out this diagnostic examination especially in pediatric patients or adolescents.

Objectives: To analyze the radiation dose of CBCT compared with conventional radiographs and to describe the parameters of influence when assessing this radiation in a child and adolescent.

Methodology: A search of the literature was performed using the PubMed search engine for articles in English and a manual search was made of orthodontic and pediatric dentistry journals for articles published in Spanish.

Results: All the studies highlight the high dosage of radiation in CBCT as opposed to conventional digital radiography, depending on various aspects (type of beam, quantity, type and shape of the filter of the appliance, scan time, imaging parameters used, rotation of 360° of the tube and field of vision). The studies conclude that special care should be taken when children are treated, as the differences in weight factors make them more susceptible to the effects of radiation, despite most to the studies consulted being based on young adults.

Conclusions: Therefore, taking into account the radiation dose from these type of registers, CBCT is not considered a routine diagnostic tool for children and

adolescents, and it is only justified for reasons such as: impacted teeth, presence of supernumerary teeth and agenesis, cases of skeletal anomalies, traumatized teeth with suspected root fractures or suspected cystic lesions or tumors.

PATIENTS WITH SPECIAL NEEDS

38. THERAPEUTIC ATTITUDE TOWARDS A CHILD PATIENT WITH MASTOCYTOSIS

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Introduction: Mastocytosis is a heterogenous group of diseases that is characterized by an increase in the number of mastocytes in various body tissues. The skin is the region that is most commonly affected, although the mastocytes tend to increase in other tissues such as in bone marrow, bone and in the gastrointestinal tract.

Mastocytes are a type of cell that is found in normal situations in our organism and that participate in inflammatory and immunological reactions. Mastocytes have cytoplasm with varied granules that contain histamine and other chemical substances that when released into surrounding tissues cause reactions that include the dilation of blood vessels, swelling and itching.

There are different types of mastocytosis that stand out because of the symptomatology, amount of mastocytes, number of organs affected and other aspects. It can appear in children at the age of 3-4 years and three types have been described: solitary mastocytoma, urticaria pigmentosa and diffuse cutaneous mastocytosis.

Objective: To provide an update of the literature regarding the use of specific protocols for the dental management of pediatric patients with mastocytosis.

Methodology of the review: A search was performed in the scientific literature using the databases of PubMed using the key words "dental", "oral", "management", "mastocytosis".

Results: Patients with mastocytosis have a greater risk of suffering an anaphylactic reaction related to the massive release of mediators secondary to various triggering agents. For this reason it is essential that both the guardians of the child and dentists are perfectly acquainted with these so that precautions can be taken to avoid the stimuli, materials or drugs that can trigger a reaction.

Stress and anxiety are among the emotional triggers and these are very common in the dental environment. With regard to materials, allergens such as latex, eugenol or nickel have been described, and among drugs penicillin and salicylic acid should be highlighted.

Therefore, establishing a sedation protocol is very important in order to avoid any risk of anxiety, as is premedication with H1 and H2 antihistamine and the avoidance of certain materials.

Conclusions: Pediatric dentists should provide special care for patients with mastocytosis, not only when managing their dental treatment but also in the prescription and use of drugs for treating complications that can trigger a case with a clear risk of anaphylactic reaction.

39. CHERUBISM: DIAGNOSIS AND THERAPEUTIC APPROACH

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Introduction: Cherubism is an inherited disease with an autosomal dominant pattern. It is a progressive non-neoplastic entity that is characterized by affecting only the bones of the jaw in a bilateral and symmetrical fashion, producing bone tissue resorption and fibrous tissue substitution. This condition is due to a mutation of unknown origin. The prevalence is greater in males than in females with a 2:1 ratio and it does not show racial predilection. The name refers to a characteristic facial deformity that progressively gives the patient the look of a cherub. The oral manifestations that accompany the disease should be highlighted: agenesis, premature loss of primary teeth, impacted teeth and malocclusions, etc.

Objective: To present two case reports of cherubism of different severity, stressing the differential diagnosis and the therapeutic approach.

Case reports: Case report 1: Boy aged 8 years and 2 months who on clinical examination had caries, premature loss of primary teeth and diastemas. His facial features did not stand out. The radiographic evaluation revealed lesions with a bilateral multilocular cystic appearance in the jaws, agenesis and impacted teeth. *Case report 2:* Boy aged 9 years and 5 months who had on clinical examination caries, malocclusion, ectopic eruption of 4.6, a tooth that had erupted on the buccal aspect of another in the third quadrant and pronounced bone protuberances in the palatal and buccal aspects of the horizontal ramus. His facial appearance was remarkable. The radiograph revealed multilocular cystic lesions like soap bubbles in both jaws, impacted teeth and number disturbances that were difficult to identify.

Comments: In both cases, given the clinical and radiologic data, a presumptive diagnosis with entities such as brown tumor of hyperparathyroidism, Noonan syndrome and giant cell lesions was made. The treatment stipulates that it depends on the severity of the disease, of the functional and esthetic compromise and the psychological repercussions on the patient. Nevertheless, most of the cases resolve spontaneously over time.

Conclusions: Cherubism is a benign bone dysplasia with lesions that require close long-term monitoring given their progressive nature and the esthetic and functional compromise. Pediatric dentists should be familiar with this disease as they may be the first to diagnose it early on.

40. VISUAL SUPPORT FOR COMMUNICATING WITH SPECIAL PATIENTS IN THE DENTAL OFFICE

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Introduction: There are increasingly more families with autistic spectrum disorder (ASD) searching for specialized dental care.

Communication, social interaction and a lack of flexibility in the reasoning and behavior of patients with ASP makes carrying out any dental treatment very complex. For this reason dentists fall back too often on sedation and general anesthesia.

The use of visual aids (photographs, videos, pictograms, drawings, gestures, etc.) is basic when treating patients with AED. These strategies reduce the anxiety of the unknown that patients suffer and the aids will develop their independence, encourage their understanding and guarantee their cooperation.

On performing the literature search in order to investigate this area, it was observed that there were guidelines for pediatric emergencies and primary care nursing but that in dentistry there was no action protocol for these patients. Being familiar with the characteristics of patients with ASD and using the necessary visual aids improves dental care and orodental health.

Objectives: To draw-up a communication signboard for children with ASD that is applicable to other patients with special needs in order to facilitate an ODH examination.

Methodology: A literature analysis was carried out on these subjects using the databases of PubMed, Scielo, Medline and Google Scholar. In order to start the study we contacted the association ARASSAC and the multidisciplinary team that carries out the work, made up of dentists, hygienists and a teacher who specialized in hearing and speech.

Results: In the review described there were visual methods for other medical procedures but not specifically for dental care.

Based on this, a visual communication board was designed for dental treatment and management in the consulting room of the dental needs of these patients.

A series of pictures was presented that was associated with the most important aspects of the dental consulting room and ODH treatment, instruments and instructions using mainly pictograms.

Comments: We believe that creating a poster-board is advisable as it permits desensitization in the dental office, as is a multidisciplinary approach that involves the usual health professionals involved in check-ups for children (pediatricians and nurses), parents, and teachers who are specialists in hearing and speech.

This material can be used for other types of patients with other special needs such as attention deficit disorder with or without hyperactivity, patients suffering from fear, mental retardation, etc.

Conclusions: All the ODH team dealing with patients with ASD should be familiar with systematic desensiti-

zation procedures, with the use of visual aids and they should be very familiar with the tell-show-do techniques.

Parents/caregivers should be given very precise instructions on the importance of oral prevention, and periodic visits should be protocolized in order to minimize the risk of oral diseases in these patients.

41. CARDIOFACIOCUTANEOUS SYNDROME AND AGGRESSIVE PERIODONTITIS. A NEW PHENOTYPIC VARIANCE? A CASE REPORT

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Introduction: Cardiofaciocutaneous syndrome (DFCS) is a congenital anomaly that is characterized by intellectual deficit and psychomotor delay, and a series of common physical findings such as congenital cardiac defects, craniofacial anomalies and disorders of the hair (loss of eyebrows), nails and skin. Its prevalence is unknown. The definitive diagnosis is genetic, although all the cases diagnosed are spontaneous, presumably due to a *de novo* mutation. To date the intraoral findings described by patients with SCFC are: submucosal cleft palate, hypoplasia of the enamel and supernumerary teeth.

Objective: To describe a case of aggressive periodontitis in a patient with DFCS.

Case report: Patient aged 7 years with a clinical suspicion of DFCS, confirmed by genetic study (Tyr130Cys heterozygous mutation in MAP2K1 gene). She attended the Special Patients Unit in the Faculty of Medicine and Dentistry of the Universidad de Santiago de Compostela (USC) with an initial diagnosis of "premature loss of primary teeth and mobility of the remaining teeth". The clinical and radiological examination confirmed the diagnosis of aggressive periodontitis and the subgingival culture gave predominant anaerobic flora (*F. nucleatum* *P. intermedia*). Conventional periodontal treatment was carried out (scaling and root planing); despite acceptable plaque control, six months later the periodontitis had exacerbated and antibiotic treatment and more curettage was required.

Comments: We have been unable to find in the literature a case of aggressive periodontitis in patients diagnosed with DFCS. The patient had hyperkeratotic papules during the first days of life that periodically recurred, which forces us to rule out immunological factors in the etiopathogeny of the periodontitis, especially in relation to cell immunity and/or the functions in neutrophils, as occurs in other hyperkeratosis syndromes such as Papillon-Lefevre.

Conclusions: The diagnosis of aggressive periodontitis in a patient with DFCS could form part of a phenotypic expression of the syndrome which means that an underlying immunological component can be ruled out.

42. ROLE OF THE PEDIATRIC DENTIST IN CRANIOFACIAL DISTRACTION OSTEOGENESIS IN A PATIENT WITH GOLDENHAR SYNDROME

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Introduction: Goldenhar syndrome is a complex of unilateral and vertebral craniofacial anomalies. The incidence is estimated in 1 out of 25.000 live births. The pathogenesis is based on inadequate tissue oxygenation that leads to hypogenesis of the stapedia artery and the supraorbital and maxillomandibular divisions. It typically involves the face generally unilaterally and the right side is more commonly affected with: hypoplasia of the malar region, maxilla and/or mandible of the side affected. Osteogenic distraction is a biological process to regenerate adjacent newly formed bone and soft tissues using progressive and controlled traction of the bone segments separated surgically.

Objective: To explain the role of the pediatric dentist in the pre-surgical stage of craniofacial distraction osteogenesis.

Case report: Male patient aged 8 years with a diagnosis of Goldenhar syndrome, who attended the pediatric dentistry clinic. This corresponded to the 4th gestation period, premature, with a single ventricle. When he was four years old he underwent partial surgery, and was treated by a cardiologist periodically, taking 75 mg of acetylsalicylic acid every 24 hours. On examination he had dolichocephalic cranium, facial asymmetry, non-concordant interpupillary line, a cataract in the left eye, agenesis of both ears, depressed nasal bridge, lip incontinence. Intraoral examination revealed gingival hyperplasia, triangular arches, deep narrow palate, mobile and compressed tongue, dental calculus, deficient oral hygiene, posterior left-sided crossbite, anterior open bite of 7 mm, tooth malpositions and filling leakage. Radiographically tooth retention could be observed, compression of the airways as well as agenesis of the left mandibular ramus. The treatment consisted in bacterial plaque control, elimination of carious lesions and dentofacial orthopedic treatment.

Comments: The literature reports that multidisciplinary treatment, and the surgical correction of the anomalies should be proposed early on. Canalization to allow feeding through the mouth, reconstruction of the lip and palate, resection of the preauricular outline, shortening or lengthening of mandibular bones, reconstruction of the malar bone and ear are important.

Dental treatment involves the surgical correction of malocclusion by means of orthopedic appliances, which concurred with this case except for the suggestion of oral rehabilitation under general anesthesia due to the difficulty of managing the airways and the lack of patient cooperation.

Conclusion: With patients who are starting a surgical protocol, interdisciplinary treatment should be carried out, the main objective being the optimization of dentofa-

cial growth, improving the psychological-biological and social aspects for the patient, and achieving a balance in their health as a whole.

43. CLAPO SYNDROME. WHAT SHOULD PEDIATRIC DENTISTS KNOW ABOUT THIS RECENT NOSOLOGICAL ENTITY?

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Introduction: CLAPO or López-Gutiérrez syndrome is a genetic malformation disorder of unknown etiology. It has only recently been described, and is characterized by the presence of a symmetrical capillary malformation along the midline of the lower lip, lymphatic and/or venous malformation of the face and neck with a different degree of severity, asymmetry and partial or generalized overgrowth of the face and neck area or of other areas of the body such as limbs.

Objective: To provide a general description of the syndrome, as well as to become acquainted with the most important signs and symptoms and the influence in the orofacial region, in order to determine possible pediatric dentistry treatment.

Material and method: A search was carried out in the scientific literature using different electronic search engines related with the entity known as CLAPO using the key words: “capillary malformation”, “lower lip”, “CLAPO syndrome”, “overgrowth” and “lymphatic malformation”.

Case report: The case is presented of two female patients who were diagnosed with this entity aged 8 and 17 years respectively. They were evaluated by the Medical Department of Oral and Maxillofacial Surgery and Pediatric Dentistry of the Hospital Universitario de La Paz in Madrid. On examination both patient had macroglossia, multiple lesions on the dorsal and ventral aspects of the tongue and floor of the mouth, capillary lesion on the lower lip located along the midline and a veno-lymphatic malformation of the face and neck of variable severity. Within the most common secondary complications there was a high risk of bleeding, bad oral hygiene, gingivitis, multiple caries and development of malocclusions.

The treatment is mainly surgical under general anesthesia and directed mainly at tongue reduction and treatment of vascular lesions with radiofrequency and diode laser, and post-surgical treatment aimed at reducing post-surgical complications.

Conclusions: CLAPO syndrome progresses with severe vascular and lymphatic malformations that significantly affect the orofacial region and that have important repercussions on the development of the jaws with infectious pathologies such as caries and gingivitis. It requires an early diagnosis and multidisciplinary treatment, however, further investigation is required in order to become acquainted with the disturbances in the mouth and to improve the pediatric dentistry management and treatment of these patients.

44. PREVENTION AND ORAL HYGIENE GUIDELINES FOR PEDIATRIC PATIENTS WITH CLEFT LIP AND/OR PALATE

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Introduction: Cleft lip (CL), cleft palate (CP) and cleft lip and palate (CLP) are the most common craniofacial clefts. The surgical treatment in very early stages is fundamental and, given this, it is vitally important that a preventative program is applied before and after surgery. While caring for a baby with C/LP is the same in many aspects as for any other baby, these babies will require special care with some of their daily needs, for example oral health and diet prevention.

The studies in the literature that analyze these aspects in pediatric cleft patients are limited, and on many occasions contradictory. In addition, the samples studied have not been described adequately with regard to size, race, and geographical area nor cleft type, which makes the interpretation and extrapolation of results difficult.

The Hospital Universitario La Paz in Madrid has informative guidelines for parents on cleft patients but these lack oral health information and advice. The multidisciplinary cooperation that we are involved with in this center allows improving the quality of life of these pediatric patients with special needs.

Objective: To put together a protocol/guide for oral health prevention, including recommendations and guidelines for patients with CL/P based on scientific evidence in order to improve the quality of life of pediatric special patients.

Methodology: a review of the literature was carried out with a search strategy in various electronic search engines. The MeSH terms used were: “cleft palate”, “cleft lip”, “oral hygiene”, “oral health”, “dental caries”, “breastfeeding” and “feeding methods” that were inter-related with Boolean Operators AND and OR.

Results: An informative and procolized triptych leaflet was presented to parents and educators that included recommendations and evidence-based advice on the type of breastfeeding to be carried out depending on the cleft, auxiliary devices for more productive feeding, the most effective posture for breastfeeding and oral hygiene techniques for correct food in-take and oral health in patients with CL/P.

Conclusions: Including a pediatric dentist in the multidisciplinary team for treating cleft patients is vitally important for improving the quality of life of these pediatric special patients. Creating informative guidelines/protocols permits intervention and training of family members and educators.

PULP/ENDODONTICS/TRAUMATOLOGY

45. IS REVASCULARIZATION OF PERMANENT IMMATURE TEETH AN EFFICIENT AND REPRODUCIBLE TECHNIQUE?

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Introduction: The treatment objectives of young permanent teeth are directed towards maintaining pulp vitality, obtaining physiological root development, and achieving a crown-root proportion that is correct for the tooth. On some occasions, either because negative pulp vitality of the tooth is diagnosed, or because there is treatment failure of vital pulp, physiological closure of the root apex is not achieved and we therefore have to use induction methods for artificially closing the apex.

Given this clinical situation, a new treatment option has emerged with a positive future perspective. Unlike apexification, it permits continued root development and revascularization. The technique is based on the stimulation of a blood clot from periapical tissues, before disinfecting the root canal with a mixture of three antibiotics, which permits the reinforcement of dentinal walls and increases the success of the treatment.

Objective: To carry out a literature review with the aim of examining this revascularization technique, analyzing the biological base and the viability or success in dental treatment.

Material and method: A search of the literature was performed using the databases of PubMed and Medline of articles published between 2005 and 2015. Key words were used such as: “pulp revascularization”, “immature tooth” “revitalization”. Of the literature consulted, the case reports were studied in which an analysis was made of the anamnesis, treatment and follow-up in order to assess viability.

Results: Revascularization is a technique that has a high success rate with non-vital young permanent teeth. Of all the cases reviewed, there were only very few failures with revascularization technique.

Analyzing the clinical and radiographic criteria, a high percentage of teeth gained an increase in root thickness and length, and a small proportion achieved apical closure. The efficiency of this treatment has therefore been demonstrated.

Conclusions: Revascularization therapy of young permanent teeth, according to the literature reviewed, has a high success rate regardless of variations in the protocols used. The low failure rate could be due to the tendency of authors not to publish failure cases or to the subjective interpretation of radiographies when deciding or not if there are signs of apexogenesis.

46. REVASCULARIZATION OF PERMANENT TEETH WITH IMMATURE APEXES

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Introduction: Revascularization is a new treatment method for permanent teeth with immature apexes and

pulp necrosis. Up until now apexification either using calcium hydroxide or an MTA apical plug, was the treatment of choice for this type of case.

Objective: To carry out a review of the scientific literature in order to assess the main protocols for the revascularization of permanent teeth with an immature apex.

Material and method: A search of the literature was carried out using the databases of PubMed and Medline. The key words used were “pulp revascularization” and “immature permanent teeth treatment”.

Result and analysis: Most authors agree on the use of triple antibiotic paste (minocycline, ciprofloxacin and metronidazole) as a good antibacterial agent on the first treatment appointment, and on the importance of creating a good blood clot that permits stimulating the development of the apex in the second appointment; and, on the third appointment, sealing the crown properly to stop long-term contamination. Some authors claim that the use of anesthesia without a vasoconstrictor favors the formation of a blood clot during the second appointment. Another point that should be studied regards the instrumentation of the root canal during the appointment, as a high percentage of authors agree that non-instrumentation of the root canal raises the success rates of revascularization.

Conclusions: Permanent teeth with immature apexes are always a challenge in endodontics. We can conclude that revascularization stimulates the development of the root apex as well as the thickening of dentinal walls, reducing in this manner the risk of fracture. Moreover, tissue engineering is opening up the field of revascularization with the aim of finding biological alternatives.

47. ANTIMICROBIAL ACTIVITY OF TRIPLE ANTIBIOTIC PASTE AND CALCIUM HYDROXIDE IN PULP REVASCULARIZATION: IN VITRO EVALUATION

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Introduction: Treatment of young permanent teeth with necrotic pulp represents a challenge for pediatric dentists and regenerative endodontics appears to be a promising alternative for these teeth. However, in order to obtain a favorable result using pulp revascularization protocols will depend to a large extent on the elimination of microorganisms given that a root apex cannot be repaired when there is infected tissue.

Objective: To investigate how two different anti-septic solutions act against one of the main facultative anaerobic bacteria present in young permanent teeth with necrotic pulp. The antibacterial materials used were calcium hydroxide paste and modified triple antibiotic paste (ciprofloxacin, metronidazole, clindamycin), with purified water or propylene glycol solvents.

Material and methods: The bacterial strain *E. coli* (ATCC® 25922) was grown in a Petri dish in order to test the susceptibility of triple antibiotic paste *versus* calcium

hydroxide using purified water (Mili-Q) and propylene glycol as solvents with the agar diffusion method. The results were analyzed 48 hours later using the measurement of the inhibition halos in the dishes.

Results: Based on the criteria to evaluate antimicrobial efficiency of the materials used, it was observed that the triple antibiotic paste had more favorable results *versus* the dishes with calcium hydroxide. With regard to the solvents, purified water had better results than propylene glycol with both types of medications.

Conclusions:

1. The success of regenerative endodontic treatment depends on the eradication of bacteria in the root canals.
2. Triple antibiotic paste is more effective against facultative anaerobic microorganisms than calcium hydroxide, regardless of the solvent used.
3. Purified water used as a solvent is more effective than propylene glycol regardless of the antiseptic solution used.

48. UPDATE ON TRANSPORT MEDIA FOR AN AVULSED TOOTH

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Introduction: Traumatic dental injury is a common reason for visiting a dentist. Approximately 30% of children with primary teeth and 22% of children with permanent teeth suffer considerable dental trauma. Approximately 0.5-3% of all traumatic injuries consist in tooth avulsions. One of the most important factors for the treatment of an avulsed tooth to be successful is the choice of a suitable transport medium.

Objectives: To describe a suitable transport medium for maintaining the vitality of the periodontal ligament cells for as long as possible during the extraoral time period, until the replantation takes place of the avulsed permanent teeth.

Material and methods: A search of the literature was carried out with the keywords “transport medium”, “avulsion”, “storage media”, “storage medium”, “permanent tooth”, “Hanks balanced solution”, “HBSS”. In the following databases: “Medline” “PubMed”, “Library of the European University of Madrid, Dulce Chacón”. Between the years 1997 y 2015.

Results and discussion: Within the transport media that currently exist, water is used as a negative control, due to it producing cell lysis of the periodontal ligament because of the pH and chloride content. All the articles reviewed agree that the best transport medium for an avulsed tooth is the oral cavity of the patient. Hanks saline solution is the most studied medium but there is controversy among authors as success depends a lot on the temperature of this medium. It has been determined that milk is the most convenient medium due to its low price and accessibility for the patient.

Oral rehydration salts have been described as a transport medium with a very high success rate for maintain-

ing periodontal ligament cell viability. In the literature other transport media have been described with less success than those previously described.

Conclusions: The ideal media for transporting an avulsed tooth should be economical and readily accessible for the patient. There is controversy among authors when determining which is the ideal transport medium. Prevention with mouthguards when carrying out contact sports is essential for preventing dental avulsions.

49. BIOLOGICAL RESTORATION OF A CROWN FRACTURE IN THE PRIMARY DENTITION. A CASE REPORT

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Introduction: Tooth fractures are the most common traumatic lesions in the permanent dentition, while in the deciduous dentition it is luxations that mainly affect upper incisors. The prevalence varies greatly (11.7% to 58.6%), they are multifactorial (excessive horizontal overbite, oral breathing and malocclusion) and due to traumatic injuries (practicing contact sports, automobile accidents, etc). In the deciduous dentition, males are largely affected, between the ages of 2 to 3 years.

Objective: To present a case report that shows the biological restoration of a non-complicated crown and root fracture as a therapeutic alternative in the primary dentition.

Case report: The case is presented of a male patient aged two years who attended the pediatric dentistry clinic of the Faculty of Dentistry of the UACH with a traumatic injury of the upper right central incisor as a result of direct trauma to the tooth involved. The fragment of the crown of the affected tooth had been brought in an aqueous solution. The parents of the patient mentioned that the fragment had become detached 24 hours previously. The oral examination revealed complete primary dentition for his age and an uncomplicated crown root fracture of the upper central incisor with no mobility of the root fragment or of any other tooth. The treatment consisted in the complete isolation and disinfection of the area and fragment to be repositioned. A photo-curable liquid resin was used for adhesion. After a 5 month follow-up, no filtration or dimensional changes were observed in the restoration.

Comments: Given the above, we believe fragment repositioning to be an excellent therapeutic alternative for cases in which there is no loss of tooth structure. It represents a biological restoration that restores function in addition to maintaining an aesthetic appearance. It is supported by Asian and Díaz who suggest that repositioning surpasses resin restoration, but they only carried this out in the permanent dentition. Sheen recommends various treatment options for deciduous teeth which include restoration with resin and extraction of the tooth as the last resort.

Conclusions: There are few reports on dental repositioning in the primary dentition, and the technique is

considered a treatment option with a long-term follow-up that takes into account the severity, involvement of the successor tooth and the age of the patient. In spite of there currently being highly aesthetic materials available none of these surpasses that of an actual tooth.

OTHERS

50. ANOMALIES IN TOOTH NUMBER, SHAPE AND ERUPTION

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Introduction: One of the most common dental anomalies that are seen in pediatric dentistry is a variation in tooth number, and the absence of one or more teeth: dental agenesis. Certain dental characteristics that accompany this anomaly tend to be a reduction in the size and shape of the teeth, as well as an eruption delay. It occurs during the early stages of tooth development. The prevalence of agenesis and which teeth are the most affected has ethnic variability. The permanent dentition is most affected. Multiple agenesis tends to be found associated to syndromes: ectodermal dysplasia, Down syndrome, Tricho-dento-osseous (TDO) syndrome etc. It rarely appears as an isolated condition.

Objectives: To present a case of multiple agenesis associated with shape and eruption anomalies.

Case report: The case is presented of a female patient aged 9 years and 11 months with no relevant family history, who was referred from a health center for orthodontic treatment. Her medical records included: early puberty, asthma treated with bronchodilators and corticoid medication, gastroesophageal reflux under treatment. During her early childhood she suffered various episodes of bronchiolitis and upper airways disorders. After the clinical and radiographic examination multiple agenesis was diagnosed, conoid teeth of upper and lower central incisors and lateral incisor-lower canine transposition.

Comments: Finding cases of severe agenesis is extremely rare, however the patient was missing eight teeth without counting the third molars. The upper lateral incisors and lower second premolars are commonly affected and the girl was missing these teeth in addition to the four permanent second molars.

The reason for these disturbances is not very clear as various theories have been described. The most accepted suggests a type of polygenic inheritance with modifying genes and environmental factors (Thesleff I, 2000). Our patient had not undergone genetic testing, nor was there any knowledge of a family history of agenesis.

Most of the authors observed that tooth agenesis tends to arise more commonly in women, which was confirmed in our case.

In the literature examined on dental transpositions it was observed that the upper canine-upper lateral incisor

is the most common transposition, but in this patient the transposition was in the mandible.

Conclusion: If we encounter a child patient with multiple agenesis we should investigate an association with other dental anomalies in order to establish a suitable treatment plan.

51. THE USE OF TRANSILLUMINATION IN PEDIATRIC DENTISTRY

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Introduction: Transillumination has a diagnostic purpose in dentistry, and it is to be found within a group called optical diagnoses. The main aim is to locate caries using a beam of light that illuminates the tooth and shows the demineralized areas, and it could even serve to differentiate the depth of these areas and to ascertain if these reach the pulp or not.

It is currently used as an alternative to bitewing radiographies for children who in certain situation do not accept them.

Objectives: To evaluate if transillumination can substitute other diagnostic methods such as bitewing radiographs, to compare the diagnostic efficiency of this technique and to ascertain if it can, as least, become part of our clinical examinations.

Material and methods: A review of the literature was performed over the last 15 years using as scientific bases PubMed, Medline, ScienceDirect, Ovid and Google Scholar.

The key words used were the terms: “transillumination” “FOTI” “caries” “diagnostic” and the age filter of the patients was 0 to 18 years.

A series of cases are also presented that were seen at the University Clinic of the European University. The patients underwent bitewing radiographs which were compared with transillumination.

Results: This tool is a complementary method for a visual and radiographic examination and the latter is the best option for diagnosing interproximal lesions in both the enamel and dentin, with cavities or without. However some authors stress that transillumination detects caries that other methods do not. Most authors highlight the sensitivity and specificity that it has for detecting incipient lesions especially on interproximal surfaces.

Conclusion: The premature detection of interproximal caries is very important for halting their progress, and it has been demonstrated that despite its limitations this technique increases the clinical diagnoses when there are no bitewing radiographs, or when these are very difficult to take, and it is therefore a very useful tool that should be included in optical examinations.

52. INCIDENCE, ETIOLOGY AND CLINICAL MANAGEMENT OF INFRAOCCLUSION OF PRIMARY MOLARS

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Introduction: The infraocclusion of primary molars is an eruption disorder that manifests as a lower position of these teeth with regard to the occlusal plane of adjacent teeth. As a result, the growth and development of the alveolar bone is affected, and the height of the bone is reduced, which impedes the eruption of the primary tooth that remains in infraocclusion.

Objective: To examine the incidence and etiology of this pathology while investigating other pathologies related to infraocclusion and to find the most effective treatment.

Methodology: A search was carried out in the databases of PubMed, Scopus and Cochrane that included all the articles published over the last 10 years using the key words “infraocclusion” “deciduous molars”, “ankylosis”.

Results: The etiology is controversial and it can be due to multiple factors: impacted teeth, absence of the permanent successor, mechanical trauma, abnormal pressure of the tongue, infection or damage to Hertwig’s sheath. Some authors have also suggested a genetic etiology.

The greatest prevalence was found at between six and eight years of age, which demonstrates that infraocclusion arises more frequently in the mixed dentition. No gender difference was found.

Early diagnosis is important as not receiving the correct treatment can lead to an infraoccluded tooth not allowing supporting bone to develop its width and height. Insufficient bone quantity can lead to dehiscence, periodontal sacs and root exposure of adjacent teeth, in addition to the ensuing occlusal problems such as tilting of adjacent teeth, extrusion of the antagonist, loss of space and lateral openbite.

The treatment described in the literature goes from placing a lingual arch to avoid the mesialization of the permanent first molar on the primary infraoccluded one and waiting for the exfoliation and posterior eruption of the permanent tooth; the extraction at the time of the exfoliation or early extraction of the primary tooth together with a space maintainer until the eruption of the permanent tooth either naturally or with orthodontic traction.

Conclusion: The early diagnosis of infraocclusion and correctly planning treatment is essential for preventing complications, as is the follow-up of any developments.

53. PSYCHOLOGICAL REPERCUSSION IN A CHILD OF DEMAND BREASTFEEDING

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Introduction/justification: Breastfeeding is the natural medium for giving a child the nutrients it needs to develop and grow. The WHO recommends breastfeeding on its own for the first 6 months of life. From this point complementary food can be introduced until the age of 2

years. From the moment of birth, the body and mind of the child are joined to that of the mother. Progressively this emotional link will widen and other figures such as the father and the family circle will enter it. It is important to be aware of the psychological consequences that demand breastfeeding will have in the development of the child, and to find out if this will have any repercussions at a cognitive level.

Objectives: The main objective of this study was to revise the existence of a direct relationship between breastfeeding and the psychological development and cognitive level of a child.

Methodology: A literature search was carried out using the databases of Cochrane and PubMed with the key words: “breastfeeding” “psychological development” “behavior” in Spanish and English.

Results: According to the articles revised, breastfeeding in addition to being beneficial for the mother is also beneficial for the child, and a bond is created as a result of this connection. Some authors suggest that the infants that have been breastfed have a higher cognitive level, although this is not conclusive due the existence of other external factors. Breastfeeding is useful for the correct development of the mother-child bond, attachment security and ego development.

Conclusion: Breastfeeding is beneficial for a child and it is a means of connection between mother and child during infancy. A possible relationship between breastfeeding and cognitive development has been demonstrated although more studies are necessary to confirm this relationship.

54. KNOWLEDGE ON DENTAL EROSION IN A SAMPLE OF ADOLESCENT STUDENTS

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Introduction: Dental erosion is the pathological, chronic, localized and painless loss of dental tissue as a result of the chemical action of acids. It does not involve the action of microorganisms. It is a multifactorial disease in which chemical, biological and behavioral factors intervene. The literature reflects a high tendency not only in the prevalence of erosion, but also in the number and severity of teeth affected which increases with age. This increase has led to greater interest in research on this pathology, as well as the need to educate the population on the etiology and clinical manifestations that are aimed at prevention.

Objective: To determine the knowledge on erosion of a sample of students of the I.E.S Gilabert de Centelles de Nules (Castellón), as well as to analyze the possible chemical, biological and behavioral factors that can influence the development of this disease.

Material and methods: A correlational, non-experimental cross-sectional study was carried out of a sample of 352 adolescents who had to fill-in a questionnaire.

The sample was selected using a consecutive non-probability sample system, in which the participants who met the following inclusion criteria were incorporated: The consent had to be signed, the questionnaire had to be filled in correctly, and the participants had to be able to read and understand Spanish. The questionnaire had several questions that permitted obtaining information on the knowledge of participants on dental erosion as well as the etiological factors that influence dental erosion such as food, drink and habits. The data collected in the questionnaire were analyzed statistically using R Commander software and a basic descriptive analysis was made.

Results: Of a total of 352 questionnaires collected, 348 were considered apt for analysis. The mean age of participants was 14 years. Of these 82.18% did not know what tooth erosion was, 73.56% had never heard of the term erosion and 62.35% thought that the term erosion and dental caries were synonyms. However, only 14.08% of the participants knew which were the factors associated with dental erosion.

Conclusion: The level of knowledge regarding dental erosion in adolescents is low. Society today needs an update on oral health education in order to make the population aware of the oral pathologies that are increasingly common and important such as dental erosion.

55. MULTIPLE AGENESIS IN PEDIATRIC DENTISTRY: A CASE REPORT

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Introduction: Dental agenesis can have functional, aesthetic and psychological consequences in a pediatric patient. Cases of multiple agenesis tend to be treated in a multidisciplinary manner and it is the pediatric dentist who will diagnose and carry out the follow-up. The etiology is in the process of being discovered, and most cases are related to genetic disorders, although there are other causes such as local disorders, systemic pathologies or syndromes that are also related. The treatment options that have been put forward are diverse and they should be proposed to the family.

Objectives: To describe a case of multiple agenesis, to carry out a literature review on the etiology, and to set out the different action protocols for treating this condition.

Case report: Female patient aged 12 years came for a consultation regarding multiple teeth and caries. She did not have a personal or medical history of interest. The anamnesis revealed four other members of the family with multiple agenesis, but none with a diagnosis of systemic pathology. During the clinical examination atrophy was observed of the alveolar process, agenesis of 16 permanent teeth was confirmed radiographically through panoramic radiography.

Comments: Based on the review of the literature, the most common etiology of multiple agenesis is genetic, as odontogenesis is under strict genetic control. Certain

genes were identified, such as those coding transcription factors MSX1, PAX9 and PITX2, the signaling protein EDA and its receptor EDAR, in which certain mutations are responsible for the different patterns of agenesis. Multiple agenesis has been described associated with local, systemic or syndromic disturbances, with ectodermal dysplasia standing out since it is the most common. When diagnosing these patients we should carry out a detailed medical history as well as a radiographic examination. Today there are various therapeutic possibilities for patients with agenesis. In the case of multiple agenesis having a multidisciplinary team made up of a pediatric dentist, orthodontist, periodontist and restoration dentist is important.

Conclusion: The etiology of multiple agenesis that is described most frequently is genetic disturbances. Multiple agenesis in children and teenagers is difficult to resolve, and it should be replaced with prosthetic treatment. In order to establish a correct treatment plan a multidisciplinary team is required. The treatment during childhood will be with oral rehabilitation until the growth period finishes and we can suggest long-term treatment. Functional prosthetic and aesthetic solutions that are financially viable should be proposed to the patient and family.

56. REVIEW OF THE LITERATURE ON THE SOCIO-ECONOMIC AND FAMILY FACTORS THAT CAN POSSIBLY TRIGGER CHILD BRUXISM

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Introduction: Bruxism is a parafunctional activity involving the grinding of teeth without the physiological acts of mastication and swallowing, with different degrees of intensity and persistency over time, generally unconsciously and without functional movements.

The exact etiopathogeny of sleep bruxism is still unknown. It is a parafunctional habit with a multifactorial origin, however, chronic anxiety and stress have been considered the main precipitating and predisposing factors that perpetuate bruxism.

Child bruxism is one of the most damaging habits for the stomatognathic apparatus and even worse if in an infant in whom all the functions and anatomic structures (muscles, bones, teeth, joints) are developing. Becoming more familiar with the stress factors of western society that can generate child anxiety and stress is essential, as these can lead to a predisposition to bruxism.

Objectives: a) To evaluate if children with sleep bruxism can be defined as having greater levels of social anxiety than children with no history of bruxism; b) to determine a possible learnt inheritance pattern for bruxism, and if children with parents or legal guardians with high levels of anxiety and a history of bruxism are more likely to develop bruxism than children with parents or legal guardians without a history of bruxism; and c) to

generate awareness of the severity that sleep bruxism can have and to inform dentists and educate parents so that this bad habit can be prevented in children.

Methodology: An advanced search was carried out in PubMed, Ebsco and Google Scholar using the key words: “bruxism”, “children bruxism”, “sleep bruxism”, “nocturnal teeth grinding”, “childhood sleep bruxism”, “performance anxiety”, “social stress”.

Results: 45.000 articles were found with the key words mentioned and 40 of these were analyzed for this study.

Conclusion: It was established that the most important factor to be analyzed when bruxism is suspected is anxiety. The most important treatment is prevention, and the family plays an essential role that will prevent children being under a lot of stress.

If bruxism is present, the pediatric dentist has the responsibility of diagnosing this as soon as possible and of carrying out the most suitable treatment. This treatment should have the support of a child psychologist and of the legal guardians of the child.