

Oral Communications

CARIOLOGY/EPIDEMIOLOGY/ PREVENTIVE DENTISTRY

1. PROFILE OF A CHILD WITH SECC IN A POPULATION OF CHILDREN UNDER THE AGE OF 4 YEARS IN A HOSPITAL MEDIUM

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Introduction: Early childhood caries (ECC) is a disease that is currently considered a public health problem that affects infants all over the world. Many studies have identified the associated risk factors and, of these, the following stand out: dietary errors, mature bacterial plaque, no oral hygiene at all, and early acquisition and colonization of *S. mutans*, as well as the socioeconomic and educational level of the parents or carers of the child.

Objectives: To describe the profile of children with SECC in a population of patients under the age of 4 years who were seen in the HSJD in order to investigate risk factor incidence.

Material/Methodology: Cross-sectional study of patients diagnosed with SECC between December 2014 and February 2015 at the Hospital San Joan Déu, Barcelona (Spain). An orodental exam was carried out of both the child and the person accompanying the child (mother/father/guardian), and the following was registered: dentition, oral health, hygiene habits, dietary habits and DFT index. They were given instructions on oral hygiene, use of chlorhexidine and fluoride as well as the necessary dietary guidelines.

Results: A total of 50 children were evaluated, mean age 29 months, with a greater percentage of females (56%). The deft index in both sexes was 6.94 and the caries pattern associated with habit was 68%. Nocturnal and demand breastfeeding was 76%. In addition, carbohydrate-rich diet (70%) was found together with a late brushing index of over 18 months (95%), and a mean starting age of 29 months.

With regard to the mothers accompanying the child (73%) the mean age was 34 years, and 62% were foreign. They had a high level of active caries (65%). The DEFT index was 10.3 per individual in both sexes and the educational level was low at 76%.

Conclusions: The population studied had high dental caries levels, which is to be expected as the children attending the hospital did so because of severity. There was a high percentage of BF and nightly and demand bottles, a late oral hygiene start and a high percentage of foreign mothers with active caries representing a higher risk of bacterial transmission. All this reflects that promoting oral health policies during early childhood is still necessary.

2. RELATIONSHIP BETWEEN ORAL HEALTH KNOWLEDGE AMONG A TEAM OF TEACHERS AND PRESENCE OF SECC

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Introduction: The Junta Nacional de Jardines Infantiles (National Association of Kindergartens) is a Chilean institution created in 1970 under Law N° 17.301. It is an autonomous unit linked to the Chilean Ministry of Education in order to oversee the early education in the country. It is committed to providing quality Primary Education for boys and girls, preferably to those under the age of four years and who are socially vulnerable, in order to generate better educational conditions and to contribute to equal opportunities. At this stage the children are taught for the first time values, rules and customs and their educators become important pillars for promoting oral health and preventing disease.

Objectives: To determine if the educators' knowledge of oral health is a factor that influences the development of Severe Early Childhood Caries (SECC) among the children attending the National Association of Kindergartens in Valparaíso and Viña del Mar, V Region, Chile, in the year 2012; to determine the prevalence of early childhood caries; to evaluate the educators' knowledge on oral health and hygiene.

Materials and methods: Cross-sectional descriptive study of 6 kindergartens in Valparaíso and Viña del Mar. The sample consisted of 350 children and 75 educators. An oral clinical exam was carried out of the group of children, while the group of educators participated in a survey on oral care and healthy habits ($p \geq 0.05$).

Results: 64% of the educators passed the evaluation. The teachers had a better pass rate (64%) than the auxiliaries (58%). Significant statistical differences were not found with regard to the level of knowledge of the educators and the presence of ECC in the children they were in charge of. The total prevalence of ECC was of 45.7% and SECC was 33%.

Conclusions: A high prevalence was found of SECC in the children examined in this study. The educators in the survey had sufficient knowledge of oral health. A direct relationship was not found between the knowledge of the educators and the presence of early childhood caries.

3. ORODENTAL STATUS AND ORAL MUCOSITIS IN PEDIATRIC ONCOHEMATOLOGY PATIENTS: THE IMPORTANCE OF EFFECTIVE ORAL PREVENTION

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Introduction: Oral mucositis (OM) is a term that describes the inflammatory response of epithelial cells of the oral mucosa to the cytotoxic effects of oncological treatment. Its high incidence, impact on quality of life as well as on patient prognosis has led to numerous studies and interventions in order to prevent and treat it which becomes more complicated because of uniform regulations.

Objective: To develop a protocol that can be applied on an outpatient basis and to study its implementation in hospitals, following an evaluation of the dental health of a sample of oncohematologic pediatric patients.

Material and methods: The sample was made up of 36 patients in the Department of Pediatric Oncohematology of the Hospital General Universitario Gregorio Marañón in Madrid. They were examined in order to describe their oral health status (descriptive status). A cross-sectional study was also carried out in order to determine if the oral hygiene recommendation followed by the Department were efficient against mucositis and to determine the importance of oral health for preventing mucositis.

Results: 67% of the patients had not been evaluated by a pediatric dentist before. 72% had not received oral hygiene recommendations. 17 patients had mucositis when the evaluation was carried out, 11 had high levels of the entity. Paradoxically, after examining the data analysis and the evaluation of the variables, according to the results in our study, the patients who received advice on hygiene had a greater degree of mucositis values.

Conclusions: Unifying therapeutic criteria and protocols that can be applied clinically is necessary, as has been proposed in this study.

4. RELATIONSHIP OF BREASTFEEDING ON CARIES AND MALOCCLUSION IN PRESCHOOL CHILDREN

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Introduction: Maternal breastfeeding is feeding a baby with milk from the maternal breast. According to the WHO and Unicef, it is the ideal type of food for the correct growth and development of children. Both institutions recommend exclusive maternal breastfeeding for newborn babies for the first six months.

Early childhood caries (ECC) is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing teeth (due to caries) or filled surfaces of any primary tooth in a child under the age of 71 months.

Moreover, early weaning and the lack of physiological sucking can affect the oral-motor development of the child, with repercussions on chewing, swallowing, breathing and/or speaking. As a result, oral breathing and malocclusion may be encouraged.

Objective: To evaluate the relationship between prolonged breastfeeding and the appearance of early childhood caries (ECC) and malocclusion.

Case reports: A series of cases is reported of patients under the age of 5 years who attended the University Dental Clinic of the Universitat Internacional de Catalunya for their first dental visit. After the anamnesis and clinical/radiographic exam, the patients were diagnosed with ECC that in some cases was related to malocclusion.

Comments: According to the guidelines of the AAPD, breastfeeding after the age of one year is associated with an increase in the risk of ECC. Therefore, it is important to start an oral hygiene protocol as from the eruption of the first tooth.

Conclusions: Since many of these patients eventually require hospital treatment, educating parents on orodental health and prevention from the moment of pregnancy is important, in order to reduce the appearance of these clinical entities.

5. EPIDEMIOLOGY AND ETIOLOGICAL FACTORS IN MOLAR INCISOR HYPOMINERALIZATION (MIH): A SYSTEMATIC REVIEW

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Introduction: Molar-incisor hypomineralization (MIH) is a disturbance with a systemic origin that affects one or more permanent first molars and/or incisors. This structural defect was given different names in the 80s, but it was in 2001 that Weerheijm et al. defined it as MIH, the term that is currently in use today. The prevalence of this condition is rising, and recent epidemiological studies have revealed that these defects are increasing in world populations. The etiology of MIH has yet to be clearly established. However, in the literature various factors have been studied that are related with its development: prenatal, perinatal and postnatal factors.

Objectives: To carry out a review of the literature in order to study the epidemiology and etiological factors involved in MIH.

Material and methods: A search was conducted of the literature using the databases of PubMed, Medline and Scielo of articles published between the years 1987 and 2015. The key words used were: "HIM, molar-incisor hypomineralization; MIH AND: prevalence, aetiology, clinical characteristics, enamel defects, amoxicillin, dioxin". The languages used were Spanish and English. Articles that studied other congenital or acquired structural defects such as amelogenesis imperfect, hypoplasia of the enamel and fluorosis were excluded.

Results: According to the studies published in recent years, a rise in the prevalence of MIH has been observed together with increased variability depending on the country or geographic area. In Spain studies have been published with figures that waver between 12.4% and 21.8 %.

The scientific evidence in the literature is not sufficient to enable determining clearly and precisely the relevant etiological factors. There are various associated factors: prematurity, presence of dioxins in maternal milk, gastrointestinal disturbances, breathing problems, urine infections, otitis or medication described during the first years of life.

Conclusions: Given the obvious increase in the prevalence of MIH over time, this phenomenon should be considered an important oral health problem given its repercussions. We consider it essential that more studies are carried out in order to clarify the etiological factors and to have a better knowledge of these, so that early diagnosis can prevent complications.

6. CASEIN PHOSPHOPEPTIDE, AMORPHOUS CALCIUM PHOSPHATE. PEDIATRIC DENTISTRY UPDATE

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Introduction: Caries is a chronic, bacterial, infectious, and contagious disease. It progresses with the destruction of dental tissue as a result of the demineralization of the acid produced by bacterial plaque. It has a high prevalence at a world level and it represents a public health problem for those countries that are less developed.

Objectives: To analyze casein phosphopeptide amorphous calcium phosphate as an alternative in the prevention of dental caries in order to improve the oral health of the population affected and to provide the results.

Methodology: A search of the literature was carried out in the databases of: PubMed (MeShDatabase), Medline, Dialnet, Compludoc and Google Scholar, using the key words: "casein phosphopeptide, amorphous calcium phosphate, Recaldent, early carious lesion, non-invasive treatment, remineralizing agent". Articles from the last 12 years were selected.

Results: The demineralization and remineralization process is related to the activity of dental biofilm, as well as to salivary flow and competition. In order to prevent the appearance of carious lesions the topical application of products that alter the activity of bacteria is recommended together with the remineralization of dental structures. With regard to prevention methods, in addition to the action of fluoride, there is the action of casein derivatives that are found in milk products. Fluoride affects the metabolism of biofilm and it is an intermediary in the remineralization process. Casein phosphopeptide and amorphous calcium phosphate (CPP-ACP) is a casein derivative, a predominant phosphoprotein in bovine milk, with amorphous union of calcium and phosphate solubility, which is easily released in acid mediums and which is able to hydrolyze hydroxyapatite favoring the remineralization of incipient carious lesions. Recent studies have found that there is a greater diffusion of calcium and phosphate ions when CPP-ACP is applied in combination with fluoride.

Conclusions: The CPP-ACP complex strengthens dental enamel and prevents caries formation, reduces dental sensitivity and open tubules occlusion. In addition acid is neutralized and salivary flow is increased. However, in order to endorse its benefits more clinical studies are needed

7. HYPOMINERALIZATION OF PRIMARY MOLARS AS A PREDICTIVE FACTOR OF MOLAR INCISOR HYPOMINERALIZATION

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Introduction: Molar incisor hypomineralization (MIH) affects the first permanent molars and incisors, altering their structure and encouraging problems such as loss of enamel and dental caries. The etiology is not clear and being familiar with the predictive factors is therefore necessary in order to control and diagnose as early as possible those teeth affected by MIH. The development and calcification times overlap of deciduous second molars and first permanent molars, and a noxa may act in this interval leaving its stamp on both teeth.

Objectives: A cross-sectional study was made of a sample of 414 children on the INMA Valencia Project. The presence of molar-incisor hypomineralization and hypomineralization of primary second molars was carried out by visual exam according to the EAPD codes.

Material and methods: A cross-sectional study was made of a sample of 414 children on the INMA Project in Valencia. The presence of molar-incisor hypomineralization and hypomineralization of primary second molars was carried out by visual exam according to the EAPD codes.

Results: Of the children examined 100 had MIH and 314 were healthy for MIH. Of the 100 children with MIH some 76.6% also had PMH. Of the 314 children without MIH only 23.3% had PMH and the difference was statistically significant (p-value < 0.001) and OR = 18.2 (9.39-35.48). Some 76.7% of the children with PMH had or will have MIH, while 84.7% of children without PMH will not have MIH.

Conclusion: There is a clear relationship between PMH and MIH as a child with PMH will be on average 18.2 times more likely to suffer MIH than a healthy child. For this reason early diagnosis of hypomineralization of primary second molars will make the need for monitoring the eruption of permanent first molars and incisors more clear. Action can then be taken quickly to preserve and protect these teeth.

Financing: This study was carried out with in the PI12/02570 project and it was financed by the PN of I+D+I 2008-2011 and the ISCIII- General Sub-directorate of Evaluation and Research Development, and co-financed by the FEDER.

8. PIT AND FISSURE SEALANTS: SELF-ETCHING COMPOSITE RESIN VS. TRADITIONAL SEALANTS

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Introduction: Dental caries is an infection of a tooth, in other words, it is a destructive bacterial disease of the dental structures produced by a series of microbes that live in our mouth. Dental caries is a common chronic disease that if left untreated can lead to pain, loss of teeth and edentulism. Although the occlusal surfaces of the teeth represent only 12.5% of all the surfaces of the permanent dentition, 50% of caries in children arise here.

The use of pit and fissure sealants as a method for preventing caries in occlusal surfaces (Beltrán-Aguilar et al., 2005) has been widely substantiated, especially for the more susceptible pits and fissures, such as those in the upper molars and premolars, as their morphology prevents proper chemical cleaning by saliva.

Objectives: To study the clinical behavior at 12 months of the materials used as pit and fissure sealants: a resin sealer (Helioseal[®]) and two self-etch liquid composites (Vertise[®]Flow and PreventSeal).

Material and methods: 214 children aged between 6 and 16 years who were not wearing orthodontic appliances participated in the study. A total of 855 caries-free molars and premolars were sealed, which were divided into four groups. In each of the groups we used: AdheSE[®] ONE F + Helioseal[®] (group A), orthophosphoric acid + Helioseal[®] (group B), PreventSeal (group C), Vertise[®] Flow (group D). The clinical evaluation of the treatment was carried out at 12 months. The controls were carried out by the same dentist.

The presence or absence of pit and fissure sealants was assessed and, if affirmative, we used the direct clinical evaluation of Van Dijken de 1986.

Results: At 12 months the orthophosphoric acid group + Helioseal[®] and AdheSE[®] ONE F + Helioseal[®] behaved in a similar manner and the values were always acceptable. However, in the PreventSeal and Vertise[®] Flow groups, although they acted in a similar manner, as time progressed they showed values that were far from acceptable.

Conclusions: The conventional composite sealant Helioseal[®] showed better clinical behavior in all the variables studied than the self-etching composite. The new self-etching sealants are no better than the traditional pit and fissure sealants.

9. PREDICTING FUTURE CARIES USING THE CARIOGRAM[®]

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Introduction: The Cariogram[®] program is a risk prediction model that shows the interactions of the factors

that intervene in the development of caries in a simple and graphic fashion. Dental caries is currently the most prevalent dental disease and for this reason, we should adopt preventative measures from very early ages for pediatric patients in order to halt and prevent possible future treatments.

Objective: The aim of this study was to estimate caries risk in pediatric patients attending the masters course in dentistry of the European University of Madrid. This was based on a caries study of the mixed dentition with the Cariogram[®] program and on classifying the patients according to their caries risk.

Material and methods: 60 patients were included in the study who were aged between 6 and 12 years. In order to obtain the caries risk of each individual a clinical examination was carried out that analyzed the dft and Sillness and Löe plaque index (taking account related diseases). Questionnaires on diet were given to parents and the conditions of the host were studied, using the Cariogram[®] software. For instructions on the use of the program the data bases of PubMed, Scielo and Google Scholar were used.

Results: 60% of children were high risk. Two very significant factors were dental plaque and carbohydrate intake.

Conclusions: The use of the Cariogram[®] program permits classifying patients will low, moderate and high caries risk. Caries, oral hygiene and the frequency with which cryogenic food is consumed are the variables that show a high correlation in caries risk.

Cariogram[®] is a useful tool for dentists as well as for patients, as it can be used for patient awareness and education on oral health.

10. COMPARISON OF THE RISK FACTORS OF SECC IN PRESCHOOLERS OF DIFFERENT SOCIOECONOMIC LEVELS

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Introduction: Most epidemiological studies on early childhood caries (ECC) coincide in that it is the children from low socioeconomic families that are most affected. However, an increase in caries has been observed in preschool children from high socioeconomic levels.

Objective: To compare the risk of children with severe early childhood caries SECC of families belonging to different socioeconomic levels.

Material and methods: Comparative study of patients ≤ 3 years with SECC who were visited between 2012 and 2014 at a private dental consulting room in Barcelona and the Hospital Sant Joan de Déu. All the data were obtained from a common questionnaire on caries risk factors which the parents completed, as well as through a clinical examination of the children. Information related to the background of the child and parents, dietary habits, oral hygiene habits, early bacterial transmission and caries risk of the parents was included.

Results: A total of 80 patients with SECC were included in the analysis. The mean age of the hospital patients was significantly higher. Among risk factors for common caries were: starting oral hygiene late (> 12 months), cariogenic diet (> 3 snacks a day), high caries risk of the mother and early bacterial transmission. Among the specific risk factors in the hospital group were: parents who were originally foreign with a medium-low socioeconomic background (62.5%) and in the private group maternal breastfeeding on demand and nightly (100%). It was observed that both the children from the private area (100%) and from the hospital area (95%) maintained demand breastfeeding beyond 12 months.

Conclusions: The results of the present study reveal that despite the different socioeconomic levels, there are common caries risk factors in both groups, especially with regard to starting oral hygiene late (> 12 months), cariogenic diet (> 3 snacks a day), high caries risk of the mother and early transmission of bacteria. With regard to dietary habits, demand and nocturnal breastfeeding was a significant risk factor in both groups. This study confirms that there are new tendencies in SECC. Caries in small children crosses social, cultural and economic boundaries, and increasing the knowledge of the population is imperative.

11. PREVALENCE OF ANOMALIES IN TOOTH NUMBER AMONG PEDIATRIC DENTISTRY PATIENTS OF THE UNIVERSITY DENTAL CLINIC OF THE UIC

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Introduction: Being aware of the prevalence of anomalies regarding tooth number is important in order to establish an early diagnosis and a suitable treatment plan.

Objective: To determine the prevalence of anomalies in tooth number among pediatric patients of the University Dental Clinic of the Universitat Internacional de Catalunya (UIC).

Material and methods: The sample was made up of patients aged 6 to 12 years who went to visit the university dental clinic between January 2010 and December 2013. The clinical records and orthopantomographies of each patient were reviewed and a self-styled document was put together in order to register the following data: sex, age and number of anomalies. Patients diagnosed with a syndrome or those with orthopantomographies with a dubious diagnosis were excluded, as were patients with a medical history of tooth loss due to dental trauma, caries, periodontal disease, or orthodontic extraction. The data were analyzed using the proportions test of the statistical program Statgraphics® Plus version 5.1 (Statpoint Technologies, Warrenton, VA, USA).

Results: Of the final sample of 437 patients, it was observed that 10.76% had anomalies in number that affected at least one tooth. Hyperdontia was found in

1.37%, and 100% were mesiodens-type supernumerary teeth. 9.38% of the patients had agenesis of some tooth. Of these 53.33% corresponded to the female sex and 46.66% affected the male sex. With regard to location, some 45.33% consisted of agenesis of the maxilla and 54.66% affected the mandible. With regard to the distribution by sectors, the right side had 52% unlike the left side which had 48%.

Conclusions: The prevalence of anomalies in this study was 10.76%. 9.38% had agenesis of some tooth, affecting to a greater extent: the female sex, the jaw, and the right side. And 1.37% had hyperdontia, with a greater prevalence of mesiodens in patients of the female sex.

12. TRAUMATIC DENTAL INJURY KNOWLEDGE BEFORE AND AFTER ATTENDING A CONFERENCE ON THE SUBJECT

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Introduction: Within the field of dentistry, it has been properly demonstrated by researchers that there is a high rate of traumatic dental injury. In order to guarantee efficient care, the dental profession requires a constant update on the different types of dental trauma and the treatment recommended for each type. In addition, various studies have concluded that education on the subject can significantly improve the probability of taking the right action, and in particular with regard to tooth avulsions.

Objective: The aim of this study was to assess dental trauma knowledge of the first year students in the Faculty of Dentistry of the Universidad Complutense de Madrid. A comparative analysis was carried out on the knowledge acquired after the attending a conference.

Materials and methods: A total of 68 first year students at the faculty filled in a questionnaire which had previously been validated by 215 Health Sciences students (Dentistry, Medicine and Pharmacy), and which included questions on the management of traumatic dental injury and other related questions. A conference was then given on the subject and immediately afterwards the students completed the same questionnaire.

Results: The study revealed a lack of previous knowledge on the subject. The individuals were more familiar with the correct approach for crown fractures than for avulsions. After attending an informative conference, the general results on the subject improved in a statistically significant manner ($p < 0.001$).

Conclusions: Educational campaigns are necessary for improving the prognosis of these lesions among the population. Training Health Science students on the subject during their first academic years is particularly appropriate.

13. STUDY ON THE ORAL HEALTH KNOWLEDGE OF A GROUP OF MIDWIVES

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Introduction: Oral health prevention requires early intervention, ideally during the perinatal period. However, dentists tend not to come into contact with patients at this point of their lives. Given their privileged position, midwives can play an important role in promoting perinatal oral health.

Objective: To determine the knowledge and usual practices of a group of midwives in the Community of Valencia with regard to the oral health of pregnant women and babies.

Material and methods: A specific questionnaire was designed for the study based on similar works that were recovered after a search in the databases of PubMed/Medline. Thirty four closed-ended questions were included with a true/false dichotomous response and they were divided into four sections: knowledge on the oral health of pregnant woman, on babies, usual practices and personal opinion. The questionnaires were filled in at health and hospital centers or using telematics.

Results: The Ethical Committee of the University of Valencia gave approval in November. Between December 2014 and March 2015 100 questionnaires were collected. Of the participants 94 were women with a mean age of 41.58 years and 13.45 years of experience. Some 82.6% had not received training on oral health in the last 5 years. With regard to the oral health of pregnant women, 70.1% were unaware of the vertical transmission of bacteria. However, 93.8% knew about the relationship between pregnancy and gingivitis. With regard to the oral health of babies, 67.3% believed that breast milk could not produce caries under any circumstance. 48 of those in the survey did not associate a white spot with initial carious lesion. With regard to usual practices, 85.4% referred all pregnant women to their dentist. On the other hand only 24.6% recommended cleaning the babies' mouth with gauze after every feed. 88 of those surveyed considered the training received insufficient and 92.7% wanted to widen their oral health knowledge.

Conclusion: The results obtained show that midwives as a group consider they have received very little information on oral health. Those questioned were not aware of important aspects of caries prevention such as vertical transmission or detection of white spots. However, most wanted to widen their knowledge as they considered playing a role in oral health prevention important.

ORAL SURGERY

14. ANTERIOR UNERUPTED SUPERNUMERARY TEETH. A REVIEW OF 50 CASES

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Introduction: Supernumerary teeth are considered one of the most common dental disturbances in the primary and mixed dentitions. They can cause a variety of pathological disturbances to the developing permanent dentition. Early diagnosis and a treatment plan are necessary for preventing any negative effects on the alveolar bone or eruption disturbances of the permanent teeth.

Objectives: To carry out a comparative study of anterior supernumerary unerupted teeth over two time periods, in the Hospital Sant Joan de Déu in Barcelona. And to evaluate the disturbances to the permanent teeth and the influence of patient age on development.

Material and method: A study was carried out on 50 pediatric patients with anterior unerupted supernumerary teeth between 2006 and 2010. Age and the characteristics of the supernumerary teeth were evaluated together with the eruption of the permanent teeth and post-operative progress. All this was compared with the 125 cases in the study published by A. Cahuana-Cárdenas et al. in 2003 in the same hospital center.

Results: The mean age was 9.2. Of the sample 78% were males and 72% involved eruption disturbances. After surgery in this group, there was spontaneous eruption in 40%, ectopic eruption in 28%, and in 32% of cases failure of eruption. When age was related to eruption failure, a statistically significant relationship was found, to the extent that the interventions carried out before the age of 9 years evolved favorably.

Conclusions: The results obtained in this study were similar in both periods. The presence of supernumerary teeth is associated with eruption disturbances of the permanent teeth. The age of the patient on being treated is extremely important for the eruption sequence of the permanent teeth. On the other hand, in this study the age at diagnosis was earlier and the complications associated with the extractions of the supernumerary teeth diminished.

15. TREATMENT FOR HEREDITARY GINGIVAL FIBROMATOSIS (HGF) IN CHILD PATIENTS

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Introduction: Hereditary gingival fibromatosis (HGF) is defined as a benign fibrotic overgrowth of the gingiva that is non-hemorrhagic, and which appears as an isolated condition or as part of a syndrome. It has an autosomal dominant hereditary pattern. Clinical examination reveals coral pink gingiva with prominent tips that practically cover the teeth, and which on many occasions prevent tooth eruption. The etiopathogenesis of this excessive tissue growth is unknown.

Objectives: To describe the diagnostic approach and therapeutic focus in two cases of hereditary gingival fibromatosis in child patients emphasizing the clinical and histopathological aspects, and to analyze the therapeutic options and their repercussions on the gingiva in the future.

Case reports: Two cases of HGF are presented. One of the cases serves as a central axis in this communication for explaining the diagnostic-therapeutic aspects as well as the clinical, histological and genetic characteristics. In both cases a gingivectomy was carried out in order to expose the teeth, but different techniques were employed.

The surgical procedures details are presented, the possible effects of each procedure on the dento-gingival junction are discussed, as are the consequences on tooth eruption and the macro and micro-structural characteristics of the tissue eliminated.

Comments: The prevalence of HGF is 1/175000, but within the same family there may be multiple cases. The gingival overgrowth can be of such a magnitude that often there are aesthetic and functional consequences, and the physiological eruption of teeth can be prevented. Given that it manifests at an early age and it usually intensifies as the permanent teeth erupt, HGF can also have a negative psychological impact on the development of a child. Precisely because of this, and because HGF has a high risk of recurrence, treatment is necessary and the most reliable focus continues being a gingivectomy.

Conclusions: There is no information in the literature on gingivectomy techniques for children, but any decision should take into account the changes occurring at the dento-gingival junction, physiologically and as a result of the surgical procedure used.

16. MUCOCELES IN INFANCY AND ADOLESCENCE

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Introduction: These cysts with a salivary origin make up a group of non-neoplastic lesions that originate in the duct system of the major and minor salivary glands. They encompass a varied group of entities, from the etiopathogenic as well as clinical manifestations aspect.

Objectives: Based on a series of case reports, we aim to go over the clinical aspects of the mucocele, its diagnosis, histopathological characteristics and treatment, taking into account its high recurrence rate.

Material and method: A review of the mucocele cases diagnosed between 2005 and 2015 was carried out.

Results: 10 patients with mucoceles and a mean age of 9 years were observed. All cases underwent surgery. In two cases there was recurrence. The case is highlighted of a girl aged 7 years who returned at the age of 14 as a result of a second mucocele.

Comments: The differential diagnosis will be kept in mind with other lesions, in particular with infectious and

traumatic pathologies, as increased prevalence in children as well as in adolescents has been observed.

According to Batsakis and Piazzetta, the mucocele is the most common pathology of the salivary glands. However, other authors such as Bhargava and Wu claim that it rarely appears in pediatric patients.

According to Rioboo et al. this could be due to the great geographical variability of these lesions in the oral mucosa. Or it could be due to a lack of a standardization of criteria in the different studies.

The origin of these lesions could be traumatic due to an incorrect use of pacifiers according to Alves, or to bottles according to Kumar.

Conclusions: The mucocele is a relatively common pathology with a high recurrence rate. It is easy to diagnose given its location although often a differential diagnosis has to be made with tumors of the salivary glands. For this reason dentists, pediatric dentists and orthodontists have extensive knowledge of the pathology as on numerous occasions they are the first to see these patients, and they should be able to diagnose, and on occasions, treat these processes.

17. ERUPTION FAILURE OF MAXILLARY CENTRAL INCISORS, STUDY OF 45 CASES

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Introduction: Tooth eruption is a complex biological process that occurs naturally. A developing tooth will move axially from its point of development in the jaw to its functional position in the occlusal plane. This process involves various structures and biological facts, not all known, which require very precise coordination of both time and sequence.

On occasions the eruption process is altered as a result of obstruction or traumatic injury, or even unknown causes, which may lead to a failure of eruption.

Objective: To evaluate eruption failure in patients with eruption disturbances not associated with detectable physical barriers.

Material and methods: Longitudinal case study of severe incisor disturbances not associated with a detectable physical barrier of patients who attended the Hospital Sant Joan de Déu in Barcelona between 1990 and 2012. The following was registered: age, sex and follow-up in years, previous traumatic injury, and teeth affected. The degree of ectopia was registered and the developmental disturbance. If the eruption occurred with orthodontic or surgical help was registered, as was extraction due to failure.

Results: The sample was made up of 45 patients, 24 boys and 21 girls and there was a total of 67 teeth with severe eruption disturbance. The mean age registered was 8.7 years (range 6-12 years).

Antecedents of traumatic injury to the primary dentition was noted in 32 patients (avulsion in 4 cases, intrusion in 10 cases and 18 cases had trauma related necrosis).

Thirteen patients could not remember suffering any trauma. A persistent necrotic primary tooth was observed in 6 cases.

Some had one or more teeth associated with severe ectopia of a central incisor. With regard to outcome, spontaneous re-eruption was observed of 12 teeth after the extraction of the primary teeth, 6 teeth were successfully replaced in the arch and 12 teeth required orthodontic treatment. Surgical extraction was carried out of 36 teeth due to eruption failure.

Conclusions: Serious eruption disturbances of incisors are observed equally in both sexes. In a high percentage this is related to traumatic injury of the primary dentition, often unnoticed by parents. The rate of eruption failures is very high and it is probably related to being diagnosed at a later age. The sequelae from the traumatic injury can be minimized with monitoring and with appropriate action by dentists.

18. PIEZOCISION FOR ECTOPIC CANINES IN PEDIATRIC DENTISTRY PATIENTS. A REPORT OF 2 CASES

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Menorca

Introduction: Many future impacted or retained canines can currently be solved through prevention. The ideal age for this is considered to be 9 years approximately. Despite this, many cases have to undergo fenestration but these could benefit from piezocision, a technique described by Dibart in 2009.

Objectives: To present the piezocision technique used in case reports for non-erupted canines. To explain the biological basis and principles of the technique.

Case reports: Two cases are presented of 3 non-erupted canines that underwent fenestration and piezocision as part of the treatment. The postoperative period and clinical progress were very favorable as the canines emerged in an average period of 1.5 months.

Comments: Piezocision is a minimally invasive surgical process that accelerates the biological process and diminishes treatment time considerably, to the point that the eruption of the canines will be three or four times faster when compared to conventional orthodontics for these patients. The cost-benefit ratio is also very favorable. The two cases are compared with corticotomies but not with other piezocision cases as to date there is nothing published in this area. A comparison is therefore made with pre-eruptive fenestration described by Kockich and single-use PROPEL which has been proposed as less invasive, in order to accelerate orthodontic tooth movement.

Conclusions: From our experience of these 2 cases we can affirm that: the same number of visits are needed but these have to be more frequent, low biological cost, dental movement that is three times faster and a low execution time. We recommend this technique is carried out routinely. A wider sample is needed to confirm this prediction.

19. AUTOTRANSPLANTATION AS AN ALTERNATIVE TO ORTHODONTIC TRACTION IN MAXILLARY INCISORS WITH A DOUBTFUL PROGNOSIS

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Introduction: Autotransplantation is defined as the procedure to surgically reposition an autogenous tooth. It often represents a replacement solution when a tooth is missing or lost as a result of traumatic injury. More infrequently it is carried out as a repositioning method after specific cases involving impact.

Objectives: To present a comparative model based on two case reports on the potential indications for autotransplantation of impacted teeth in the anterior region when these ectopic teeth have a dubious or negative prognosis for orthodontic traction.

Case reports: The diagnosis, procedure and monitoring is described in the short term of two patients who underwent autotransplantation and orthodontic traction respectively in the department of Pediatric Dentistry of the University of Sevilla. *Case report 1:* Autotransplantation: The medical history of the patient, aged 10 years, included intrusive luxation that had displaced a permanent tooth to a very apical and horizontal position. After an exhaustive orthodontic, clinical and radiological exam, the space was opened by means of a palatal arch and fixed apparatus. A decision was made to transplant the ectopic N.º 11 tooth to its correct position in the arch as, given its position, orthodontic traction was ruled out. Oral sedation and antibiotic prophylaxis was administered, and the surgery was performed to relocate the tooth. This included preparation of the recipient socket, extraction, preservation of the buccal plate, reimplantation and splinting. The initial stability, absence of mobility, healing of tissues and functional integration of the tooth was monitored as well as the absence of periradicular disease. *Case report 2:* Orthodontic traction: patient aged 13 years with an odontoma in the upper anterior region. Rescue surgery was decided on with orthodontic traction as this met the clinical and radiological criteria of proportion, length and root shape as well as good position. Guided eruption was achieved using the continuous force of the incisor which produced changes in the soft tissue and bone.

Comments: The case is presented of an autotransplantation that permitted the periodontal tissues and pulp to stay healthy as well as the natural growth of the alveolar process, preservation of the aesthetic appearance and function of the periodontal tissues. A case is presented for comparison of an impacted tooth in the anterior region with a prognostic value and specific differences that permit guaranteeing the indication of assuming a process of orthodontic traction and that analyzes the results obtained.

Conclusions: Autotransplantation is an option that should be chosen especially in growing patients with lost

anterior teeth, agenesis or ectopic eruption that cannot be redressed by means of orthodontic traction. A clear diagnosis, careful indication and a correct multidisciplinary focus are essential.

20. EVALUATION OF AUTOTRANSPLANTATION SUCCESS RATES

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Introduction: Replacing lost or missing teeth is one of the objectives of a dental clinic. One of the treatment options is autotransplantation that consists in transplanting an embedded, impacted or properly erupted tooth from its original position to a space prepared surgically or to a post-extraction socket in the same person.

Objective: To describe a group of patients who underwent a tooth autotransplantation in the Hospital Sant Joan de Déu and to present the success factors for tooth autotransplantations.

Material and method: A retrospective study was carried out using the medical histories of autotransplantation cases performed between 1994 and 2014 by the same operator. An analysis was made of the indications for the intervention, the donor tooth (type and root development), the receptor bed (post-extraction or new socket), periodontal, pulp and bone healing and the survival rates.

Results: 18 cases were studied that involved 23 autotransplantations, 11 females (61%) and 7 males (39%). The indications were agenesis (53%), regional odontodysplasia (17%) ectopia (13%), caries (13%) and cysts (4%). The autotransplantations were incisors, canines, premolars and third molars. Root formation was incomplete in 20 teeth (87%) and complete in the other 3 teeth (13%). The receptor beds arose largely as a result of post-extraction of a primary tooth or of a decayed permanent tooth. In most cases there was bone, pulp and periodontal healing, with the exception of three cases that required endodontic therapy. The survival of the autotransplantations was 96%. The success factors before the interventions included those related to the patient and the professional, the characteristics of the donor tooth and the preparation of the receptor bed. Pulp, periodontal and bone healing were assessed clinically and radiographically. Root development and gingival adaptation of the transplantation were success factors that were monitored.

Conclusions: Autotransplantation is not extensively carried out nor are dentists very familiar with the procedure, but the results are very favorable. The survival rate is very high and it is related to patient selection and to taking into account the success factors described. They are a useful treatment alternative for growing patients, the continuity of the dental arch and alveolar process is preserved, and the aesthetic appearance is acceptable. Pediatric dentists should be able to detect cases and they

should be familiar with the techniques for carrying out an autotransplantation.

RESTORATIVE DENTISTRY

21. GROPPER APPLIANCE IN PRE-SCHOOL CHILDREN: REPORT ON A SERIES OF CASES

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Introduction: The most common causes of destruction to primary teeth are tooth decay, traumatic injury and structural anomalies. Of these the main cause of premature tooth loss in preschoolers is, without doubt, early childhood caries (ECC) that can lead to the loss of many anterior primary teeth in a short period of time. The reasons for replacing lost anterior teeth include: re-establishing mastication function, swallowing, speech, avoiding the appearance of incorrect habits, improving aesthetic appearance, and avoiding psychological repercussions. The Groper appliance is one of the most used devices for aesthetically replacing primary teeth.

Objective: The aim of this study was to describe the advantages and disadvantages of Groper appliances in 14 pre-school students, who were treated by the department of Pediatric Dentistry of the Hospital Universitario de Bellvitge, between June 2004 and January 2015. Three areas were registered: general characteristics of the patients, psychological and functional advantages of prosthetic substitution and complications with the appliances. The general characteristics of the patients and complications with the appliance were obtained after a review of their medical records, and the psychological and functional advantages were obtained through a survey of parents and children that is carried out as part of the clinical protocol a month after placing the appliance.

Comments: There is certain controversy with regard to the influence of premature tooth loss in the anterior region on aesthetic appearance and self-esteem in children. However, the present study reflects that the large majority of children report feeling better looking (100%), eating better (100%), speaking better (36%) after being fitted with a Gropper appliance. Parents report that their children are happier (93%) and that they smile more (57%).

Conclusions: Most parents and children report an improvement at a personal and social level after the placement of the appliance. The complications with the appliance include problems with the cement, fracture and gingivitis. Premature dental loss in the anterior region can affect safety and the interpersonal relationships of children, and for this reason we should support aesthetic replacement at an early age. In turn parents should be informed of the possible long-term complications with the Groper appliance.

22. AMELOGENESIS IMPERFECTA. A CASE REPORT WITH A 5-YEAR FOLLOW-UP

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Introduction: Amelogenesis imperfecta (AI) is a structural defect of the enamel that is clinically and genetically diverse, and which is caused by mutations of critical genes (Chromosome X) during its formation. The incidence of AI can vary according to the population studied and it wavers between 1/718 and 1/14.000. It can affect the primary or permanent dentitions or both, as well as just one tooth or all the dentition.

Taking into account the phenotype, development mechanism and mode of inheritance, AI can be classified into four main types: hypoplastic, hypomaturación, hypocalcified and hypomaturación-hypoplasia with taurodontism.

Among the clinical implications of AI there is low caries susceptibility, masticatory problems, thermal and chemical sensitivity, speech and articulation problems, deep overbite, low self-esteem, excessive calculus deposits and gingival hyperplasia.

Objectives: To present a case report of a patient diagnosed with hypocalcified AI who was followed for 5 years.

Case report: Male patient aged 7 years and 8 months who attended the Masters Degree Course in Integral Pediatric Dentistry of the Universitat Internacional de Catalunya for a dental check. After anamnesis and a clinical exam, hypocalcified-type amelogenesis imperfecta was diagnosed of all the primary and permanent teeth. After the usual radiographic tests, carious lesions were diagnosed in the four first permanent molars with unilateral posterior right-sided crossbite as a result of which conservative and orthopedic treatment was decided on. The patient attended for periodic checks and was followed for a total of 5 years.

Comments: AI not only affects the dentition of the patient but it also has an impact on psychosocial development. Dental management should be focused on preserving dental structure, improving function, reducing tooth sensitivity as well as improving aesthetics, especially during pre-adolescence and adolescence.

Unfortunately there are no long-term results with regard to dental rehabilitation of these patients, and most of the scientific evidence emanates from the management of specific clinical cases.

Conclusions: An early diagnosis of AI is necessary in order to prevent and avoid the patient losing orofacial and aesthetic functions, as is carrying out interdisciplinary and diagnostic treatment.

23. IN VITRO COMPARISON OF THE COLOR STABILITY OF AESTHETIC PEDIATRIC ZIRCONIA CROWNS

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Introduction: Stainless steel crowns offer durability, reliability and low cost, but they have one considerable inconvenience which is their aesthetic appearance. In order to improve this aspect other therapeutic options arose such as stainless steel crowns with an aesthetic facing. However, different studies have demonstrated that these affect gingival health, they are too expensive and bulky, and they lack a natural appearance. At this point the use of ceramic zirconia crowns was suggested for restoring the anterior teeth due to their optical properties, high flexural resistance and a reduction in thickness.

Objectives: To determine and compare the color stability of two types of aesthetic anterior zirconia crowns (Nusmile ZR[®] and EZ-PEDO[®]) in habitually consumed beverages.

Material and methods: A total of 80 pediatric aesthetic anterior zirconia crowns were included (40 of the Nusmile ZR[®] type and 40 of the EZ-PEDO[®] type). The staining solutions used were: chocolate milkshake (Cacaolat[®]), orange juice (Granini[®]) and Coca-cola[®] (Coca-cola[®]); and distilled water as the control group.

The solutions were changed every 7 days and maintained in an incubator at a stable temperature of 37 ± 1 °C. The color was measured with a Spectro[™] Microspectrophotometer with a Vita classical shade guide (A1-D4). The different measurements were taken after 24 hours (T0), at seven days (T1), at 15 days (T2), at 21 days (T3) and at 30 days (T4). The statistical method used was ANOVA multifactorial and the data was analyzed using StatgraphicsPlus[®] version 5.1 software. The statistical significance was fixed at p < 0.05 and the confidence interval at 95%.

Results: Statistically significant differences were obtained with both types of crowns in the staining solutions and the control group (p-value = 0.0068). This was based on the initial values of the EZPEDO-type crowns being lower than the Nusmile type, although both groups matched in that the experimental group of orange juice had higher staining values, followed by chocolate and lastly coca-cola.

Conclusions: Aesthetic anterior pediatric zirconia crowns do not have the color stability with habitually consumed beverages, although the values obtained were not clinically detectable.

24. DIRECT COMPOSITE RESTORATIONS FOR INFRAOCCLUSION OF PRIMARY MOLARS WITH AGENESIS OF THE SUCCESSOR

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Introduction: Infraocclusion is commonly associated with primary molars. The molar remains fixed in its position while the adjacent teeth continue to erupt. The term “ankylosed” and “submerged” are often used as synonyms for infraocclusion.

It is classified as mild, moderate or severe, and the occlusal surface of the affected tooth is taken as a reference. It is mild when 1mm below the occlusal plane, moderate when level with the contact point of adjacent teeth, and severe when next to or below the gingival level. Mandibular molars are the most affected, particularly the primary first molar followed by the second molar.

In moderate or severe infraocclusion there are disturbances to the occlusal plane such as the inclination of adjacent teeth, extrusion of the antagonist or displacement of the midline towards the side affected.

Objectives: To show that the reconstruction of submerged molars with indirect composite onlay is a good treatment option.

Case reports: 5 patients aged between 14 and 16 years with submerged molars and agenesis of the permanent successor. In all cases the affected molar was the second mandibular primary molar and the infraocclusion was mild or moderate.

Comments: Many authors report the good prognosis of primary molars with mild or moderate infraocclusion that remained in the mouth over a long period. With young patients proper function should be ensured and the reconstruction of a molar is necessary in order to re-establish the occlusal plane.

Conclusions: The restoration options go from reconstruction in composite to placing a stainless steel crown. Direct restoration with composite is complicated for several reasons as the work time is extensive and the results are not very satisfactory. Moreover, stainless steel crowns are increasingly less tolerated due to their poor aesthetic appearance. Indirect composite restorations achieve a good aesthetic appearance and optimal function and we believe they are a good treatment option for submerged molars that are going to remain in the mouth for a long period.

25. PSYCHOLOGICAL IMPACT FOR PATIENTS WITH AMELOGENESIS IMPERFECTA

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Introduction: Amelogenesis imperfecta (AI) is a hereditary-type structural anomaly of the enamel. All the teeth are affected to a greater or lesser extent and both dentitions. The most common disturbances include loss of tooth substance, varied tooth color and shape, open bite and sensitivity, among others. All these characteristics mean that patients with AI suffer emotionally and their daily lives are affected by psychological aspects.

Objective: To analyze the psychological impact of AI on quality of life of two child patients and their families, and their suitability in view of these aspects for the therapeutic option used following the AAP guidelines for these patients.

Case report: Two patients aged 6 and 8 years presented to the clinic of the Masters Degree Course of the University of Seville with AI. After a diagnostic, clinical and

radiographical exam, all the preventative and conservative treatment was carried out following the recommendations of the American Academy of Pediatric Dentistry. At the end of it, the aesthetic and psychological results and treatment of the disease were assessed by parents, siblings and patients using a test to evaluate the satisfaction and quality of life of the patients as well as their family.

Comments: Due to the loss of dental substance as a result of AI, patients tend not to show their teeth and they have problems interacting with people together with low self-esteem and a low perception of themselves. The test was comprised of 47 questions that evaluated function and aesthetic appearance following treatment in addition to the quality of life of each patient.

Conclusions: The results obtained were positive in general, and a high success rate was achieved with regard to quality of life. They were all satisfied with the treatment although family members as well as patients negatively singled out poor aesthetic appearance and post-treatment pain. More studies are needed with regard to satisfaction among AI patients who should take part in the complete treatment plan as it has a great repercussion on their daily lives. In future cases our treatment plan will be based on improving the negative aspects of the test, for example using zirconia instead of Cr-Ni crowns.

BEHAVIORAL DENTISTRY

26. PROTECTIVE DEVICE AGAINST SELF-MUTILATION IN AN ATYPICAL TERATOID-RHABDOID TUMOR CASE

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Introduction: Neuropathological mastication is a type of self-injurious lesion that arises from damage to the pathways in the brain cortex, pyramidal system, reticular formation, trigeminal nuclei or hypothalamus.

Tumors leading to a loss in brain control progress with these types of self-inflicted lesions, and they include the atypical teratoid-rhabdoid tumor (ATRT). It is a malignant and aggressive neoplasm, mainly pediatric, that appears in the central nervous system (CNS). Infratentorial ATRTs can appear in the cerebellar hemisphere or encephalous stem. They may be closely connected to cranial nerve pairs and in some cases they will cause neuralgia-type disturbances.

Objectives: To minimize the effect on orodental tissues from the contraction of the masticatory muscles due to trigeminal neuralgia. And, to design a restrictive and protective device to avoid self-mutilation of soft and dental tissues in a patient with ATRT.

Case report: Female patient aged three years, diagnosed with ATRT in the portion of the mesencephalon with episodes of self mutilation that was affecting the soft tissues and tongue in a repetitive manner due to biting and loss of primary teeth as a result of the contraction force of the masticatory muscles.

Comments: Stewart and Kernohan classify this type of injury as Type A self-injurious lesions that are superimposed on preexisting lesions or irritations. Trigeminal neuralgia is a condition that arises as a result of ATRT and it is an etiological factor.

In ATRT psychotic behavior can be observed as a result of the tumor, or from undesired side-effects of the drugs used in chemotherapy, such as myoclonus of certain muscle bundles or spasms of the masticatory muscles, as with high plasma concentrations they are able to penetrate the blood-brain barrier. The trigeminal nerve may be affected which will lead to neuralgia and self-inflicted lesions.

Numerous authors claim that the device used to avoid these injuries and for protection against these self-inflicted lesions should be designed according to what has to be treated, and it should be consistent and stable in the mouth.

Conclusions: Self-inflicted lesions associated with syndromes that have a biological base, neuralgia or a neoplasm affecting the CNS, have a first treatment option consisting in restrictive therapy based on protective devices. Damage to orodental tissue should be the first premise taken into account when designing protective and restrictive devices for the pathologies associated with self-injurious lesions.

27. GENDER INFLUENCE ON PARENTS SEEKING PEDIATRIC DENTAL CARE

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Introduction: From the 40's onwards the number of women in dentistry has been growing. In the last century it was a predominantly a male profession but today we will find that around 70% of new members of the dental associations in Spain are women.

With regard to the different branches of the profession, men appear more inclined towards surgery or prosthetics while women prefer orthodontics or pediatric dentistry.

Objectives: To demonstrate if the gender of a pediatric dentist is a factor that parents keep in mind when seeking orodental care for their children.

Material and methods: The present study was carried out of a sample of 100 fathers and mothers who attended the department of pediatric dentistry of the dental hospital of the University of Barcelona.

The parents were given a questionnaire and asked if the gender of the dentist was an influential factor when choosing a pediatric dentist for their child and, if so, whether they preferred a male or a female pediatric dentist, or one the same sex as their child. In addition they were asked about their relationship with the patient (father, mother, grandparent, uncle, aunt...).

Results: Of the 100 surveys carried out, 19 were answered by fathers and 81 by mothers. For 88% of those surveyed, the gender of the dentist did not influence the choice of pediatric dentist (17 fathers and 71 mothers) for treating their child, as opposed to 12% (2 fathers and 10 mothers) who did take this into account.

Out of this 12%, 58.3% preferred their child to be treated by a female pediatric dentist (2 fathers and 5 mothers) as opposed to 41.6 who preferred the professional to be the same sex of the child (5 mothers).

Conclusions: For most of the parents participating in our study, gender was not an influencing factor when seeking pediatric dentistry care. We believe that other factors such as the professional virtues and abilities of a pediatric dentist, their ethnic origins, proximity of the clinic or publicity, influence parents to a greater degree when choosing a pediatric dentist.

28. RELATIONSHIP BETWEEN THE PHYSICAL AND ORO-FACIAL CHARACTERISTICS AND BULLYING AMONG CHILEAN SCHOOL CHILDREN IN URBAN-RURAL AREAS

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Introduction: School violence exists all over the world and there is no discrimination between first and third world countries. Bullying is a complex social interaction, the different sides are unbalanced, it is repetitive and focused on being deliberately damaging. And, as a result, there is physical and/or psychological damage.

Objective: the aim of this study was to investigate the prevalence of abuse among second year school children in municipal schools in rural areas of Chile and to observe the relationship with physical characteristics and dento-maxillary anomalies.

Material and method: This was a cross-sectional descriptive study that included 6th to 8th grade students from three rural communities (Cañete, San Fabián de Alico and San Pablo), with a total of 1,144 adolescents. A sample was chosen out of a conglomerate of 288 students, mean age 13 years, of whom (following consent) 264 answered the survey adequately.

The survey used (Zaid, 2013) was translated, evaluated by a focus group of teenagers, followed by experts and finally applied anonymously.

Results: 9.5% felt unhappy at school, 5.3% reported having missed school because of bullying and 8.7% felt this had affected their performance at school (results "very much"). With regard to the general causal qualities identified in the victims, these were: weight (19.7%), height (19.3%) and teeth (17.4%). The oro-facial characteristics were: in 54.9% teeth that were not properly aligned, in 43.1% upper incisal protrusion, and in 37.3% shape and color of teeth. Significant associations were not found as a result of gender, age, area or others.

Conclusion: The physical characteristics as a result of which Chilean students from rural areas felt more commonly victimized were: weight, height and teeth in third position. It was observed that the geographic areas studied lack access to orthodontic treatment in public dental care.

29. ETIOLOGICAL FACTORS THAT INFLUENCE DENTAL FEAR AND ANXIETY IN THE PEDIATRIC DENTISTRY OFFICE

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Introduction: Anxiety and dental fear are two phenomena that affect the behavior of a child in the dental office and make behavior management difficult. Both are considered strong caries risk predictors. There is scientific evidence that patients with dental anxiety have a higher prevalence rate of dental caries due to the difficulty of performing the treatment and to failing to turn up for appointments. Evaluating the level of anxiety and dental fear in a child before the treatment is key for successfully redirecting their behavior before the required dental treatment and for avoiding future cooperation breakdown in the medium and long term.

Objectives: To carry out a review of the literature with the aim of studying what factors cause the most anxiety and dental fear in certain patients of pediatric dentistry. To find out to what extent previous experiences of parents and the patients themselves influence the development of anxiety and dental fear during successive visits to a dental office.

Material and method: A literature search was carried out using the databases of PubMed and Medline using the key words: “dental anxiety and fear, fear of dental pain, adaptive behaviour, general anxiety, dental anxiety scale, maternal anxiety, dental fear scale”. The articles, published between 2002 and 2015, were in Spanish or English.

Results: According to the articles analyzed, most authors agree that parents and especially mothers can be the ones transmitting dental fear and anxiety to their children. Previous negative or traumatic experiences suffered by pediatric patients with other dentists are another of the factors that authors agree have a great impact on anxiety and fear during the following visits to the consulting room. Sex and age appear to be important factors that are linked to dental fear and anxiety, and younger females suffer the most.

Conclusion: The most common etiology of dental fear and anxiety in patients is previous traumatic experience and adopting an attitude picked up from those around them. With regard to the family environment, the children whose parents communicated a fear of dental treatment showed higher levels of anxiety than the children whose parents had not communicated this anxiety.

30. INTRAORAL X-RAYS ARE NOT MADE FOR PEDIATRIC DENTISTRY

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Introduction: For a correct diagnosis we need to have the information that is provided by X-rays. Pediatric dentistry intra-oral radiographies are on many occasions very uncomfortable for patients. The design is proposed of a demountable film that is compatible with our vistascam.

Objective: To design a demountable X-ray film that enables taking X-rays in pediatric dentistry.

Material and methods: The problem of space when placing intraoral X-ray film in pediatric patients means that this is disagreeable and uncomfortable for them. Children will often fail to cooperate and on many occasions they will vomit.

Results: A detachable film for vistascam is proposed for cases in which the upper vertical dimension of the patient is below 31mm, and the distance from the distal portion of the canine to the retromolar trigone is under 41 mm, for bitewing and also periapical X-rays.

Conclusions: Designing demountable film to minimize the discomfort of pediatric patients is possible and this will facilitate better cooperation.

31. PEDIATRIC PATIENTS AND DENTAL PHOBIA: THE ROLE OF THE FIRST EXPERIENCE

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Introduction: Anxiety is a systemic response before imminent danger that is influenced by memory, personal experience and social context. Dental anxiety is a common problem that can affect people of all ages, although it is more common in children and adolescents.

Objective: The aim of this study was to determine the main sources of anxiety in a child as well as the influence of maternal anxiety on the development of anxiety in a child.

Material and methods: Six hundred and six children of the same dental clinic specializing in pediatric dentistry were invited to participate successively in the study. A calibrated version of a pain scale was used and adapted in order to determine the degree of anxiety of children and their mothers. The clinical variables were collected by the same experienced pediatric dentist in order to determine the potential influence on fear development. Descriptive statistics were used (mean, standard deviation), together with the Mann-Whitney U, and the correlation established using Spearman's coefficient ($p < 0.05$).

Results: Statistically significant differences were not observed in the levels of anxiety linked to patient gender ($p > 0.05$), but an increased percentage was observed in

the anxiety group of grade 4 (17.2%/20.15%) especially in the group of children aged 4-6 years. The increase in anxiety among the children with regard to their mothers was correlated. The patients with previous negative experience had a greater level of anxiety than those who did not (test Mann-Whitney U; $p < 0.001$). Moreover, significant differences were observed between previous negative experience of child patients with professionals who were not pediatric dentists and the development of increased anxiety, as opposed to children with no exposure to these experiences.

Conclusion: Dental fear in children is strongly associated with unsuitable dental care that causes an increase in the levels of anxiety in children, as well as in parents. Thus fear of the dentist in children is related to parents being anxious about the treatment their children are to receive.

32. CONSTRAINTS ON PEDIATRIC DENTISTS REGARDING THE APPLICATION OF BEHAVIOR TECHNIQUES THAT ARE SCIENTIFICALLY ACCEPTED AND VALID

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Introduction: Behavior control is one of the most important aspects of pediatric dentistry, as without the cooperation of the child, successful treatment will not be possible. Behavior techniques, which are valid and scientifically acceptable, and that are currently found in the literature are divided into two groups: pharmacological and non-pharmacological.

In the first group we will find minimal, moderate, deep sedation and general anesthesia. With regard to non-pharmacologic techniques, these should be divided into three groups: communication (instructions, pediatric language, distraction, play therapy, voice control, non-verbal techniques, triple E, parental anxiety reduction, etc.), motivation (previous visit, imitation, desensitization, reinforcement), and limitation (bite block or open mouth, medical immobilization).

Objectives: To evaluate and describe the limitations that pediatric dentists find with behavior techniques, and with pharmacologic and non-pharmacologic techniques, that are scientifically accepted and valid.

Methodology: A search of the literature in PubMed, Scielo and Cochrane with the key words: "child, behavior, behavior management" in English and Spanish.

The inclusion criteria were articles in English and Spanish from the year 2000 to 2014.

Results and conclusions: By performing a literature review, behavior techniques that are currently accepted and those that are prohibited were established. All behavior techniques have their limitations, therefore, it is essential that individual choices are made according to the patient and their surroundings.

Approval by parents/carers is one of the most important constraints, and we will find that communication techniques are the most accepted. Within these, the tell-show-do approach is considered the gold standard.

There is a certain rejection towards limitation techniques, and restriction by means of medical devices was the least accepted. As an alternative, most parents preferred general anesthesia or sedation.

33. INFLUENCE OF EDUCATIONAL LEVEL OF PARENTS ON THE COOPERATION OF CHILDREN

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Introduction: Behavior management of a child in a dental consulting room is vital if we want to achieve a positive attitude towards dentistry and dental health. As indicated by Skinner (1981), whatever our behavior philosophy, it is unlikely that we can deny that the environment has a considerable influence on us. Therefore, there are various factors (family attitude, previous experiences and personality of the dentist, etc.) that can influence the behavior and cooperation of a child in the dental office.

Objective: To discover if there is a relationship between the educational level of parents and the child in the dental consulting room.

Material and methods: A search of the literature was performed in PubMed and the inclusion criteria were articles in English and Spanish from 2005 to 2014. Classical books on Psychology and Pediatric Dentistry were also consulted.

Results: In 2008 Wang claimed that the level of understanding regarding treatment and guidelines for maintaining oral health varied according to the educational level of the parents. Most of the authors agreed that parental socioeconomic status influences a child's diet and therefore caries risk.

Various authors claim that parents influence the behavior of a child, however, there are other factors involved such as education received by children through their parents, anxiety transmitted by parents to their children, etc. But no single case has been described on the level of parental education influencing behavior, and therefore cooperation.

Conclusions: Despite family having a considerable influence on the development of a child, more studies are needed to demonstrate that the educational level of parents is one of these. Nevertheless, it should be taken into account that there are other influential factors. In addition we need to ensure that our recommendations are understood regardless of educational level.

34. BEHAVIOR GUIDANCE METHODS BASED ON THE DISTRACTION OF THE PATIENT. A REVIEW OF THE LITERATURE

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Introduction: Behavior related to anxiety and dental fear represents one of the most difficult aspects of dental

care and treatment. This behavior turns into a considerable obstacles when trying to administer safe, relaxed and efficient care, and for this reason pediatric dentists are constantly looking for non-pharmacologic techniques that will help to achieve the cooperation of patients and a positive attitude towards their treatment and oral health care. Distraction techniques are a useful tool that has been used traditionally, and they are becoming more relevant given developments in information and audiovisual technology.

Objective: To carry out a review of the literature in order to collect and standardize the information currently available on non-pharmacologic behavior guidance techniques based on distraction.

Methodology: A search of the literature was carried out of articles published between 1999 and 2015 using the databases of PubMed, Medline and Scielo, and using the search engines of Google Inc. and MedicLatina. The key words in the search were: "behavior management, distraction, audiovisual distraction, video eye glasses and pain distraction". Physical articles from magazines were also obtained from the Library of the University CEU-Cardenal Herrera. The articles included were published in both Spanish and English. The inclusion criteria, in addition to the publication date, were articles that presented distraction techniques that had been evaluated in pediatric patients in a pertinent manner during a procedure.

Results: The literature search was made up of 32 articles but only 19 that met the criteria were included in the review. 16 randomized clinical studies, 1 controlled non-randomized clinical study, 1 study without a group control and a review.

Conclusions: Various behavior guidance techniques are used based on the distraction of the patient. The review of the literature shows that most of these are effective and simple tools to apply that are useful for alleviating anxiety, feeling uncomfortable and the perception of pain that is sometimes associated with certain dental procedures especially with the infiltration of anesthesia.

ORTHODONTIC

35. SCUZZO'S MODIFIED PENDULUM OR HOW TO SOLVE CLASS II MALOCCLUSION EASILY AND PREDICTABLY

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Introduction: Correcting class II malocclusion on many occasions entails distalizing upper molars, especially in meso- and branchycephalic patients. For this, therapy that does not require patient compliance is very useful. A classical appliance that does not require compliance is Hilger's pendulum. However, on occasions considerable anterior

anchorage loss can take place as well as excessive tilting or tipping on the molar that it supports. In order to remedy these disadvantages Scuzzo, Pisani and Takemoto introduced modifications in the design of the pendulum which is known as the Modified Pendulum or M-Pendulum.

Objective: The aim of this communication is to explain the variations in the design of the pendulum introduced by the authors, its advantages and the simple manner required to activate it, by reporting on a typical case that required treatment with this type of appliance.

Case report: The case is presented of unilateral class II malocclusion of the right side and the application of the M-Pendulum. The case was completely resolved and good aesthetic appearance and function was achieved.

Comments: Scuzzo, Pisani and Takemoto's modified pendulum makes activation much easier for the dentist and Class II malocclusion can be resolved without any adverse effects as seen in this case and in many other cases treated. The opinion of these authors concurs with that of many other orthodontic authors.

Conclusion: The M-Pendulum or Modified Pendulum by Scuzzo, Pisani and Takemoto is a very useful tool that we should have in our orthodontic armamentarium when treating class II patients.

36. NEW APPLIANCES FOR THE TREATMENT OF MANDIBULAR HYPOPLASIA

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Introduction: Class II malocclusion is a very common condition and on most occasions it is due to mandibular hypoplasia. Many authors have over time treated this pathology with a removable functional appliance. Today patient compliance is very difficult to achieve and fixed functional appliances are increasingly being used.

Objectives: The aim of this study was to stimulate mandibular growth using a fixed appliance to force the jaw to a more anterior position 24 hours a day.

Material and methods: This was a study carried out on 20 patients with skeletal Class II, division 1 and mandibular hypoplasia. All the patients were treated with the Austro Repositioner. It is a fixed appliance that is anchored by two bands on teeth 16 and 26 and from each band there is a 0.9mm steel bar that goes to an acrylic wedge located in the rugae. A construction bite is taken from the patient, and an acrylic wedge is made on a sliding plane.

On closing the mouth the patient touches the wider part of the acrylic wedge which will displace the jaw along the inclined plane towards a more anterior position, forcing a more protrusive closure.

In dolichofacial patterns, the patient will slide and totally close the mouth which will avoid the extrusion of the posterior molars, and in branchyfacial patients the lower incisors touch a notch in the resin of the appliance which will move the posterior sector down and improve overbite.

Results: All the patients treated with the Austro repositioner obtained slight changes that were not significant in the maxilla. However, the changes in growth and position of the mandible were very significant.

Conclusions:

1. The Austro repositioner is a fixed appliance that is very comfortable, it is active 24 hours a day and it does not require patient cooperation.
2. In the mandible we obtained an improvement in the SNB and ANB angles that was very significant, and we were able to stimulate mandibular growth. The mandible grew and moved to a more anterior position.
3. There is no significant variation in the position of the maxilla.
4. The incisors improved slightly in relation to the Frankfurt plane.

37. PRESURGICAL ORTHOPEDICS IN NEONATES WITH UNILATERAL LIP AND PALATE FISSURES USING NASOALVEOLAR MOLDING: AN ANALYSIS ON STL MOLDS

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Introduction: Presurgical infant orthopedic treatment for cleft lip and palate (CLP) has been carried out since 1950. The aim is to bring together the alveolar segments while permitting normal development and to facilitate lip and dentoalveolar surgery.

In 1993 Grayson introduced nasolalveolar molding (NAM) that permits reducing the severity of cleft palates while enabling the surgeon to close the alveolar, lip and nose defects. The maxillary alveolar process and the nasal cartilages can be molded and the malleability of these immature tissues utilized. It is made up of an acrylic plate with resin nasal stents.

Objectives: The aim of this retrospective study was to describe the changes that arise in the shape of the arch of patients with unilateral cleft lip palates in patients treated with NAM.

Material and methods: The study was approved by the ethics committee of the University of Valencia. The sample was made up of 20 patients treated at the Dental Clinic of the University of Valencia, Valencia (Spain), Miami Children's Hospital, Miami (USA) and the Hospital del Niño Jesús, Madrid (Spain). STL files were obtained of patient models with CLP in the first week of life (T1) and the day of the surgery (T2) with the scanner iTero. Orthocad 5.1.1.113 software was used for carrying out linear measures on models.

Results: The width of the fissure was reduced. Maxillary compression did not occur nor was there any premaxillary protrusion.

Conclusions: NAM permits bringing together alveolar segments by means of their mesial rotation but without

hindering normal anteroposterior and transverse development.

Recommended literature

1. Grayson BH, Cutting C, Wood R. Preoperative columella lengthening in bilateral cleft-lip and palate. *Plast Reconstr Surg* 1993;92:1422-3.
2. Grayson BH, Santiago PE, Brecht LE, Cutting CB. Presurgical nasolalveolar moulding in infants with cleft lip and palate. *Cleft Palate-Craniofac J* 1999;36:486-98.

38. EARLY DIAGNOSIS OF UNILATERAL CROSSBITE FOR PREVENTING FUTURE COMPLICATIONS

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Introduction: Posterior unilateral crossbites are defined as those malocclusions in which the mandible shifts towards one side of the arch. Mandibular shifts that are not treated in time can cause skeletal, dental and muscular difficulties that will have a notable effect during adolescence.

Objective: The aim of this study is to show that early treatment of unilateral posterior crossbite is key for preventing mandibular asymmetry in the future.

Case report: Different case reports are presented showing patients with unilateral crossbite at different ages, thus highlighting the importance of early detection.

Comments: Having a knowledge of transverse cranial development and of establishing occlusion will help to understand the origin of posterior crossbite. Reaching a correct diagnosis is very important for determining the etiology of crossbites, as they may be genetic, environmental or functional. Mandibular functional deviation is frequently observed during the primary dentition, and it can become a skeletal problem if not detected in time.

Conclusions: Early diagnosis of malocclusion involving the transverse dimension will permit, through early treatment, the development of the arches under the best occlusal physiology and health conditions.

39. THERAPEUTIC OPTIONS FOR MINIMAL INTERVENTION ORTHODONTICS FOR THE TREATMENT OF ANTERIOR CROSSBITE

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Introduction: The main reason our patients request orthodontic treatment is for improving aesthetics and mastication. Despite this, other relevant problems arising with this therapy cannot be ignored: increased caries risk, decalcifications and increase in periodontal disease to differing degrees. These problems are aggravated by

another factor which is the duration of the therapy, and over a certain length of time this might lead to a loss of patient cooperation.

Objective: The aim of this communication is based on comparing two systems, one conventional and the other a minimal intervention system, that permit solving anterior crossbites that do not have a skeletal class III component and that we can consider pseudoclass III. The complications previously mentioned can be avoided by using a minimum intervention option that does not require the use of a conventional appliance and which enables proper oral hygiene.

Case report: Two case reports are presented of anterior crossbite in the mixed dentition but with no class III skeletal pattern. The first was treated with multibrackets and the second with a minimum intervention system and the action protocols are set out. The cephalometric evaluation of both cases at the end of the treatment indicates that both treatments normalized the malocclusion with a similar mechanism regarding the tilt of the upper and lower incisors and mandibular post-rotation. We highlight in the second case that plaque index and periodontal health were not affected.

Conclusions: The aim of orthodontic treatment should not only be aimed at reestablishing aesthetics and occlusion, but it should also be carried out as quickly as possible in order to avoid permanent damage to both hard and soft tissues. The treatment presented allows us to achieve the same objectives as conventional treatment but without the adverse effects.

40. RELATIONSHIP BETWEEN POSTURE OF THE HEAD AND UNILATERAL POSTERIOR CROSSBITE

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Introduction: In unilateral posterior crossbite, functional mandibular asymmetry modifies the usual pattern with muscular compensation at different levels. Initially the change is functional but, if it continues, it can affect posterior bone development permanently. Therefore, viewing the postural system as a whole structure, we will try to explain how systemic change to body posture is related to occlusal modifications.

General objectives: To analyze the relationship between head posture and unilateral posterior crossbite in children attending the Masters Degree Course in Pediatric Dentistry of the University Dental Clinical of the European University of Madrid. **Specific objectives:** To observe the frequency of unilateral posterior crossbite of the left or right side in these patients. And, to relate the side of the crossbite with the position of the head.

Material and methods: For the sample pediatric patients were chosen, aged 5-8 years, who were attending the Master's Degree Course in Pediatric Dentistry of the European University of Madrid between February 2015 and May 2015.

The clinical examination evaluated the presence of unilateral posterior crossbite and the side affected with the posture or inclination of the head in the frontal and sagittal planes.

The patients with this malocclusion underwent clinical study based on extraoral photographs (face on and right profile) in order to be able to assess the posture of the head. In addition with the help of a dental chair, chair light, orthodontic separators and intraoral mirrors, intraoral photographs were made (front on, left side, right side, upper and lower occlusal) in order to assess the existence of unilateral posterior crossbite.

Results: There were 15 patients with unilateral posterior crossbite, of whom 9 inclined their heads towards the crossed side and who represented 60% (unilateral posterior crossbite of the right side, inclination of head towards right) and 6 towards the uncrossed side (4 unilateral posterior crossbite of the right side with inclination of the head towards the left side (27%); 2 unilateral posterior crossbite of the left side with inclination of the head towards the right (13%).

Conclusion: These authors recommend further study with a larger sample in order to obtain statistically significant data and to determine if there is a relationship between posture of the head and unilateral posterior crossbite.

41. RELATIONSHIP BETWEEN IDIOPATHIC SCOLIOSIS AND THE DIFFERENT TYPES OF OROFACIAL DISORDERS: A SYSTEMATIC REVIEW

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Introduction: Idiopathic scoliosis is an abnormal curvature of the spine with an unknown cause. This review is based on the hypothesis that this type of postural malformation of the spine can lead to disturbances of the face and teeth due to the decompression of the structures involved and the formation stage.

Objective: The aim of this study was to review the existing literature to see if there is a correlation between idiopathic sclerosis and the different types of orofacial disorders.

Methodology: The descriptors "scoliosis" and "malocclusion", were obtained from the Decs web page (Health sciences descriptors) in order to carry out a search from the year 2000 to 28 October 2014 in the following databases: Pubmed, Medline and Cochrane. All the meta-analysis was included, together with systematic reviews and random and controlled clinical trials which were published as complete articles on patients with sclerosis that provided quantitative data on facial disorders or malocclusion.

Results: After a search, 30 articles were pre-selected that were critically read. Fifteen articles were excluded

because they were not directly related to the subject of the article, 1 because it was a study that had been carried out on non-humans. A total of 14 articles were included among which there were 13 clinical trials and a systematic review.

Conclusion: Based on the studies chosen, the conclusion of this review is that there is evidence to confirm that there is an increase in the prevalence of orofacial disturbances in patients with idiopathic scoliosis but more studies are needed to determine this relationship.

42. AIRWAY MEASUREMENTS IN PEDIATRIC PATIENTS WITH OBSTRUCTIVE SLEEP APNEA SYNDROME

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Introduction: Many of our patients since children have had difficulties with nasal breathing due to allergy problems and rhinitis, adenoid hypertrophy, tonsil hypertrophy etc. These disorders lead to disruption not only of craniofacial growth and therefore the growth and development of the mouth, jaws, arches and teeth, but more importantly they lead to and encourage the appearance of OSAS.

Objectives: To determine a highly reliable cephalometric measurements which will serve to diagnose a child with OSAS.

To design a table showing a pattern of cephalometric values of children with OSAS in order to obtain treatment that is more efficient for these patients that have been treated surgically to eliminate obstacles, but that have not responded satisfactorily to the surgery. There is scientific evidence on the use of orthodontic and functional orthopedic appliances for the treatment of breathing and sleep problems in children.

Material and method: *Study design:* cohort study. *Individuals in the study:* children aged between 6 and 7 years with a mean age of ± 10.13 years, who had some type of malocclusion to warrant orthodontic study. A sample of 128 patients was chosen, 53 had oral breathing, 10 were diagnosed with OSAS, and the 65 with nasal breathing were considered the control group (error 5%, confidence level 95%). *Method of data collection:* medical history, orthodontic examination and cephalometric tracing with Nemoceph® software. *Observations/interventions:* a direct examination was carried out of each patient and their measurements, including the usual cephalometric tracing (Steiner, Ricketts, McNamara and Jarabak) and the hyoid triangle tracing.

Results: The cephalometric variables between the three groups were compared using the T-student method, a comparison was made of the averages of each variable. It was discovered that the children with oral breathing and OSAS had a smaller nasopharyngeal space and oropharynx. They also had mandibular retrusion, a vertical growth pattern and class II malocclusion predominated in the group. Statistically significant differences were found ($p < 0.05$).

Conclusions: Statistically significant differences exist when cephalometric patterns of nasal breathers are compared with oral breathers and OSAS children, as the latter have abnormal cephalometric patterns. Nasal breathing during childhood is very important in order to prevent anomalies in the facial bones.

43. OROFACIAL ORTHOPEDICS FOR SKELETAL CLASS III MALOCCLUSION WITH BONE VERSUS DENTOALVEOLAR ANCHORAGE: A SYSTEMATIC REVIEW

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Introduction: The treatment for class III malocclusion has always been a great challenge in orthodontics as the growth patterns of patients tend to be unfavorable and imperceptible. The introduction of osseointegrated orofacial orthopedics for child patients arose as an alternative to dentoalveolar anchoring which potentially avoided dentoalveolar changes as occurs in conventional orthopedics such as traction with a facial mask linked to an expander.

Objectives: The aim of this review was to analyze in a systematic and critical manner the solid clinical studies that are available to date in relation to the results obtained with these two treatment alternatives for skeletal class III in child patients who have not reached their growth curve, from childhood until the age of ten and a half years.

Methodology: The literature was reviewed systematically using the key words PubMed/Medline, Scopus and Scirus up to the present day, using the Mesh terms: “malocclusion, Angle class III” AND (“extraoral traction appliances” OR “orthodontics, interceptive” OR “orthodontics, corrective” OR “malocclusion, Angle class III/therapy” OR “orthodontics, corrective/methods”) NOT surgery. The articles chosen were based on defined inclusion or exclusion criteria.

Results: The search strategy found 1.020 articles. 18 studies were chosen after the application of the selection criteria. The studies revealed the effect of mandibular rotation in a clockwise direction and an increase in total face height. This was more obvious in dentoalveolar therapy than in orthopedic-osseointegration therapy. **Analysis:** The quality of the methodology was classified according to the methodology reported by Antczak and Jadad et al., two researchers with independent quality evaluations who use the Newcastle-Ottawa scale. The variables were analyzed based on Chen et al. Based on this analysis, the bias risk and quality of each article was qualified as low, medium or high. Of the 18 articles, 6 were classified as high quality and 12 as medium.

Conclusions: Some dental parameters such as overjet increased in both groups significantly ($p < 0.05$) going from 1.7 to 7.9 mm with conventional therapy and 2.7 to 7.6 mm with orthopedic procedure and bone anchorage.

44. PERCEPTION OF FACIAL PROFILE AESTHETICS ACCORDING TO PEDIATRIC PATIENTS

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Introduction: For some time now it has been known that many people seek and undergo orthodontic treatment not because of dental irregularities that could lead to physiological dysfunction, but to improve aesthetic deterioration. In the studies of children that are carried out before orthodontic treatment the worries and expectations of patients and of parents on improving facial aesthetics through treatment are recurring. These are sometimes stronger than their expectations with regard to oral function. However, it would be interesting to find out the aesthetic perception of a child with regard to his orthodontic treatment.

General objectives: To analyze what type of profile is considered the most and least harmonious for children aged 6 to 12 years, who were attending the Master's Degree Course of the University Dental Clinic of the European University of Madrid. *Specific objectives:* To analyze the change in the patient's perception of aesthetics according to their profile. To study the different aesthetic perceptions of profiles according to sex.

Materials and methods: For the sample patients were chosen who were attending the university dental clinic of the European University of Madrid and who were aged 6 to 12 years. They were assessed clinically in order to choose their facial biotype and profile. Then they were asked to choose though a survey with illustrations which profile they liked more and which they liked less. There were 3 sequences with photographs with images of females and males and a representative figure, all with the three types of profiles (straight, concave and convex). Additionally they were asked in the profile sequences that corresponded to their sex, with which of the three did they currently feel more identified with.

Results: 40 patients were surveyed (22 females and 18 males), of whom 16 had a straight profile, 13 concave and 11 convex. The most harmonious profile chosen was the straight profile in 53% of cases and the least favored profile was the convex profile in 76.6% of cases.

Conclusion: Carrying out a study with a larger sample is advisable in order to obtain statistically significant data, and to determine if there is a relationship between the profile chosen and the profile of the patient, and according to their sex.

45. IMPORTANCE OF EARLY TREATMENT FOR TRANSVERSAL MALOCCLUSION. CLINICAL EVIDENCE

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Introduction: Transversal malocclusions are those occlusion disorders that occur in the horizontal or transverse plane. There are two types of transverse anomalies: posterior crossbite and scissor bite.

The frequency of crossbite in clinical dentistry fluctuates between 1 and 23% according to different studies. The most common is single-tooth crossbite that appears in 6-7% of cases, followed by unilateral crossbite in 4-5%, and lastly we will find bilateral crossbite in 1.5-3.5%. The frequency of crossbite is not influenced by sex nor age.

Posterior crossbite is one of the disturbances that best responds to early treatment. It has been demonstrated that early correction by means of a maxillary expander prevents skeletal and dental asymmetries as well as joint problems.

Objective: The aim of this communication is to analyze the advantages and disadvantages of early treatment for this type of malocclusion.

Material and methods: A review of the literature was carried out on early treatment for crossbite, as well as an analysis of clinical evidence for early treatment obtained from the master's course in Pediatric Dentistry in the Universidad Complutense de Madrid.

Conclusions: Transversal malocclusions should be corrected as soon as they are detected in order to minimize greater skeletal asymmetries and in order to obtain functional and aesthetic results. A correct differential diagnosis should be carried out between the different types of crossbite in order to start the most appropriate treatment.

46. VERTICAL GROWTH IN CHILDREN. OCCLUSION AND BEYOND

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Introduction: Vertical growth of the maxillo-mandibular complex affects the sagittal plane and the projection of the mandible. In patients who are aged 6 to 9 years not only is a diagnosis important of the sagittal plane but also of the vertical plane. In addition, to what extent first phase treatment can favor or worsen this growth tendency should be kept in mind given that, if not corrected in time, it will be impossible to stop or compensate in late adolescence or in adulthood.

Objective: The aim of this communication is to present a group of growing patients with malocclusion in the vertical plane. Early treatment of a vertical anomaly involves occlusal and facial changes that help to improve prognosis of sagittal malocclusion.

Case report: different case reports are presented with CII and CIII malocclusion and how vertical treatment improves facial and sagittal plane is explained.

Conclusions: Occlusal stability and facial aesthetics form part of the treatment objectives of malocclusions. Increased vertical growth involves sagittal and transverse changes with important consequences. Early diagnosis of the transverse, vertical and space problem can change how a case evolves if treated between the ages of 6 and 9 years. With suitable registers, growth direction can be forecast and a prognosis on direction made. The steps

that then have to be taken will be clear, and this will enable correct monitoring while facilitating the second phase of the treatment enormously.

47. THE IMPORTANCE OF INTERCEPTING AN ACCENTUATED CURVE OF SPEE IN THE MIXED DENTITION

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Introduction: In correct occlusion the curve of Spee should be flat, with functional anterior guidance that permits the distocclusion of the posterior segments in any mandibular movement. The curve of Spee is an imaginary line that joins the buccal cusps from the lower first molar to the incisal edges of the lower teeth. During the mixed dentition, in patients with class II division 1 there can be overeruption of the lower incisors that manifests as vertical growth of the alveolar ridge in order to compensate this lack of occlusion. This overeruption of the lower anterior teeth leads to an accentuated curve of Spee that increases during the growth stage of the patient and that finishes with dental or mucosal contact.

Objective: The aim of this presentation is to highlight the role of pediatric dentists in intercepting this disorder in child patients and to prevent the ensuing risks such as periodontal disease, irritation of gingival tissues situated on the palatal side of the upper incisors, problems with the temporomandibular joint, headaches and occlusion disorders.

When we observe that the lower incisors have reached their normal level, that is to say when the incisal edges are two millimeters over the occlusal plane, in order to prevent the accentuation of the curve of Spee, a simple way of intercepting this disorder is to place an appliance that avoids overeruption, such as a lingual arch with composite wedges underneath the arch. The patient's orthodontic treatment in the future can therefore be managed more favorably.

Methodology: For this communication a review of the literature was performed. Case reports were also added of patients with this untreated malocclusion who had developed curvature disorders.

Conclusions: The conclusion of this study reflects the importance of intercepting the accentuation of the curve of Spee during the eruption of the lower incisors, which allows the recovery of correct anterior guidance which is a fundamental pillar of occlusion.

48. EARLY TREATMENT FOR CROSSBITE WITH PLANAS DIRECT TRACKS

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Introduction: Early treatment seeks to eliminate the factors that prevent the correct development of the jaws, and to obtain good neuromuscular balance. As a result a resistant system is achieved that is prepared for functional demands. Prompt treatment increases the possibilities of a complete correction, treatment time is reduced and more serious conditions are avoided.

Transversal and sagittal malocclusions such as anterior and posterior crossbite have a repercussion on bone and muscle that, if treated in time, can be reverted or improved.

Neuro-occlusal restoration (NOR) is defined as a part of dentistry that studies the etiology and genesis of functional and morphological disorders of the stomatognathic system. The aim is to investigate the causes producing them, to eliminate these as early as possible and to rehabilitate or revert these lesions as quickly as possible and from birth if necessary.

The application of the Planas direct tracks concept is based on the law of minimal vertical dimension and functional masticatory angle, and the law of posteroanterior and transversal development. It represents an interesting tool for correcting and preventing dental malocclusions as they improve the dentofacial, skeletal, muscular and functional appearance.

Objectives: To present various case reports in which crossbite is corrected rapidly with Planas direct tracks in order to achieve good neuromuscular balance.

Case report: Various case reports are presented of patients who attended the Integral Masters degree course at the Universitat Internacional de Catalunya. Following anamnesis and clinical and radiographic examination, the patients were diagnosed with anterior and posterior crossbite. After orthopedic analysis, a decision was taken to fit Planas direct tracks in order to solve these malocclusions. Examinations were carried out every three months until correction.

Comments: Bayrak S *et al.*, as S. Sari *et al.* proposed various methods for treating crossbite such as removable appliances with springs, stainless steel crowns, acrylic inclined planes, and direct composite tracks, the latter being one of the most used methods, as they are economical, comfortable and easy to place and remove.

Conclusions: The use of Planas direct tracks for the correction of different malocclusions is a useful tool for correcting and/or improving dental and skeletal malocclusions in young patients with masticatory dysfunction.

PATIENTS WITH SPECIAL NEEDS

49. THE USE OF BISPHOSPHONATES IN PEDIATRIC DENTISTRY PATIENTS AND THE POSSIBLE DENTAL REPERCUSSIONS

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Introduction: Bisphosphonates are synthetic analogues of inorganic pyrophosphates that essentially inhibit bone resorption by means of the suppression of osteoclast activity. The studies that have been published on bisphosphonates in the pediatric age include four groups of diseases associated with: generalized or localized osteoporosis, metabolic bone disease, heterotopic calcification of soft tissue, and resistant hypercalcemia.

The greatest experience of bisphosphonate use in the pediatric age comes from long term intravenous Pamidronate, especially in patients with osteogenesis imperfecta. However, there is very limited experience with daily oral bisphosphonates (especially alendronate), fundamentally because it is poorly tolerated and therapeutic compliance is difficult. In recent years different trials have been carried out with children that were given other oral bisphosphonates (for example weekly oral Alendronate) or intravenous infusion (intravenous zoledronate) that can be administered rapidly in 15 minutes.

Objectives: To discover the possible oral repercussions from bisphosphonates for child patients. And, to provide an update on the use of bisphosphonates in pediatric dentistry.

Material and method: A search was performed in the literature on the use of bisphosphonates in electronic databases and the Cisne catalogue in the Faculty of Dentistry library of the Universidad Complutense de Madrid. Key words: “bisphosphonates”, “osteonecrosis”, “pamidronate”, “alendronate”.

Results and discussion: The results obtained to date on the use of bisphosphonates show a reduction in chronic bone pain, an increase in bone mineral density, reduction in the incidence of fractures and an improvement in quality of life.

It is known that osteonecrosis can arise orally in the jaws, but this has only been observed in adult patients treated with chemotherapy and/or radiotherapy. In child patients this disease has not been observed, which could be due to these drugs being used in child patients only for a short time.

Conclusions:

- The continued use of IV bisphosphonates with wide antiresorptive potency, together with the application of chemotherapy or radiotherapy can lead to osteonecrosis of the jaws, a process that has yet to be discovered in the pediatric age.
- Currently bisphosphonates are used for different childhood diseases among which osteogenesis imperfecta stands out.
- Pediatric dentists should be familiar with the complications that arise from prolonged bisphosphonates therapy.

50. SEVERE CHERUBISM; A CASE WITH A 14 YEAR FOLLOW-UP

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Introduction: Cherubism is a benign fibrous disorder with a genetic base. Only 200 cases have been described in the literature. It is characterized by bilateral progressive painless enlargement of the maxilla and/or mandible. Radiolucent lesions can be observed that appear between the ages of 2 and 7 years. It is described as a disease that usually progresses rapidly during the first and second decade of life, tending to be self-limiting and regressing spontaneously. Severe cases have been described with fatal consequences. The treatment described in the literature for severe cherubism is still controversial.

Objective: To describe a case of severe cherubism and how it progressed over 14 years.

Case report: Female patient, 14 years of age, who had been followed in the Hospital Sant Joan de Déu since the age of 23 months. She attended as a result of bilateral maxillary swelling in the region of the canines at the age of 6 months. The clinical examination revealed bilateral swelling of the maxilla and mandible in the area of the canines. This was hard in consistency and it affected the maxilla to a greater extent, having a 2.5-3 cm diameter. The lesions raised the suspicion for cherubism. The anatomopathological studies carried out confirmed this diagnosis.

From this point she was monitored periodically. She suffered several episodes of extensive growth that complicated her diet and breathing. Several surgical interventions were needed (extraction, bone curettage, correction osteotomies) and pharmacology (calcitonin, TNF-a blocker, bisphosphonates and interferon-a). The disease to date has not stabilized.

Comments: According to our review of the literature, the treatment for cherubism is still a controversial subject. Some authors are in favor of abstention while others are in favor of surgery. The disease tends to be self-limiting in puberty, but there are some cases involving greater growth that lead to aesthetic, speech, function and breathing difficulties. It would appear that the therapies proposed do not modify the progression of the disease in itself, but that quality of life for these patients is improved.

Conclusions: This is a case of serious and severe cherubism that to date has not been stabilized. From a review of the literature we have not been able to elucidate which would be the most suitable therapeutic approach for this type of lesion.

51. ORODENTAL STATUS AND ORAL MUCOSITIS IN ONCOHEMATOLOGIC PEDIATRIC PATIENTS: THE IMPORTANCE OF EFFECTIVE ORAL PREVENTION

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Introduction: Oral mucositis is a term that describes the inflammatory response of epithelial cells of the oral

mucosa to the cytotoxic effects of oncological treatment. The high incidence, impact on quality of life as well as the prognosis of patients has led to numerous studies and procedures aimed at prevention and treatment, which has been complicated by the lack of uniform regulations.

Objective: To develop a protocol that can be applied on an outpatient basis and possibly in hospitals, based on an evaluation of dental health among a sample of oncohematologic pediatric patients.

Material and methods: A sample of 36 patients from the Department of Pediatric Oncohematology of the Hospital General Universitario Gregorio Marañón in Madrid, was examined in order to describe their orodental health (descriptive study). In addition, a cross-sectional study was carried out to determine if the recommendations on oral hygiene followed by the department were efficient for combating mucositis, and to determine the importance of oral health in the prevention of mucositis.

Results: 67% of patients had not been evaluated by a pediatric dentist previously, 72% had not received oral hygiene advice, 17 patients had mucositis at the time of the evaluation, and 11 had high levels of the entity (grade 3 and 4 according to the WHO). Paradoxically, after an examination of the data analysis and after assessing the variables, according to the results in our study, the oncohematologic patients under treatment who received advice on hygiene had higher mucositis values.

Conclusions: These paradoxical results are probably due to the small sample, and for this reason unifying therapeutic criteria and protocols for clinical application is necessary, as is proposed in this study.

52. THE IMPORTANCE OF SUITABLE PEDIATRIC DENTAL INTERVENTION FOR INTELLECTUALLY DISABLED PATIENTS

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Introduction: Frequently many groups of child patients with intellectual disabilities have a greater prevalence of orodental pathologies, caries, parafunctional habits, malocclusions, bruxism, traumatic dental injuries as well temporomandibular disorders. Often the origin lies in a lack of education with regard to oral hygiene, and on some occasions the access to dental services may be difficult. All these factors lead to a negative impact on the quality of life for these patients and their families.

Objectives: To offer an up-to-date vision on the specific needs of a specific group of pediatric patients with intellectual disabilities in the dental office, possible prevention methods, treatment needs and pediatric dental management. And to evaluate the knowledge of parents and carers of this group of patients on their dental care needs.

Materials and methods: A literature update was carried out using the databases of PubMed and the Mesh terms: “oral care”, “intellectual disability”, “epilepsy”,

“odontology”, “oral health”, “cerebral palsy”, “mental disorder”, “autism”; interrelated with the Boolean operators “AND” and “OR”. Additionally a questionnaire was given to parents and caregivers of pupils at a state-funded special education center for intellectually disabled people. The aim was to evaluate the level of knowledge on dental hygiene guidelines, prevention measures, quality of life and treatment needs.

Results: Many parents describe irritable and unsettled behavior, as well as sleep disturbance in these children as a result of their oral condition. Cognitive disorders in the group led to concern among parents about oral disease, as these patients on many occasions are not able to express their discomfort. Because of this, many parents can feel frustrated. There is a low level of knowledge on dental hygiene, prevention and treatment needs among parents and tutors of children with intellectual disabilities.

Conclusions: Carrying out correct pediatric dental care is important for these patients with intellectual disabilities, not only in the dental office but also through prevention and the training the parents and caregivers of these patients. If proper prevention and treatment guidelines are followed, improving the quality of life of this group of patients with special needs will be possible, and the number of dental interventions can be reduced.

53. DENTAL TREATMENT FOR A PATIENT WITH SEVERE IMMUNODEFICIENCY. A CASE REPORT

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Introduction: Severe combined immunodeficiency (SCID) is a congenital disease that is characterized by having a serious deficiency of the immune system, humoral (B lymphocytes) and cellular (T lymphocytes).

The incidence is 1:100.000 births. However, this disease has a mortality rate of 100%. Due to the extreme susceptibility to infections, dental treatment requires special attention, keeping in mind that caries, periodontal health or mycosis can lead to very serious problems for these patients.

Objectives: To present the case of a patient diagnosed with SCID who underwent dental treatment under general anesthesia.

Case report: Male patient, diagnosed with SCID aged 9 years and 3 months who was seen on the Masters course in Integral Pediatric Dentistry of the Universitat Internacional de Catalunya for a dental check. Anamnesis was carried out together with a clinical and radiographic examination. Due to the systemic pathology and lack of patient cooperation, dental treatment was carried out under general anesthesia. Periodic checks were carried out for a year after the intervention.

Comments: Due to the advances in diagnostic and treatment techniques, the rate of survival of these patients has increased, and dental treatment has gained special attention.

As Moyer *et al.* concluded in 1983, excessive manipulation and trauma to the oral tissues should be avoided as this may contaminate the blood through bacteria. Treatment options such as pulpotomies and pulpectomies should be ruled out as, although the risk of failure is low, should this occur, the resulting infection could seriously compromise the health of the patient, and extraction would be the treatment of choice.

We have not been able to find in the available literature case reports that describe the possible dental disorders that may arise in these patients, nor a specific protocol with regard to their dental management. This case may therefore be useful for managing these patients.

Conclusions: An early diagnosis is required together with a multidisciplinary team in order to prevent and avoid opportunist infections in the oral cavity of these patients. Carrying out checks, providing oral hygiene instructions and prophylaxis every three months is necessary given the high caries risk and susceptibility to infection of these patients.

54. DENTAL CARE CHALLENGE: THE CHILD PATIENT WITH HEREDITARY EPIDERMOLYSIS BULLOSA

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Introduction: Epidermolysis bullosa (EB), or hereditary blistering EB, is a genodermatosis with a very low prevalence that is transmitted in an autosomal dominant or recessive form. It is caused by a disturbance to the proteins in the dermo-epidermal junction that alters the cohesion of the dermis with the epidermis.

Patients with EB suffer from cutaneous and mucosal fragility, which leads to painful trauma-induced blisters. Four main types have been described: epidermolytic EB simplex (EBS), lucidolytic junctional EB (JEB), dystrophic dermolytic EB (DEB) and mixed EB or Kindler syndrome.

Objective: To find out how patients with inherited epidermolysis bullosa should be managed.

Case reports: *Case report 1:* Male patient aged 14 years, diagnosed with recessive dystrophic EB with generalized blisters and ulcers, syndactyly of the hands and feet, stenosis of the esophagus and gastrostomy feeding. With regard to the mouth he had ankyloglossia, microstomia, blisters and ulcers of the oral mucosa, and plaque on his tongue and lower incisors. *Case report 2:* Female patient aged 19 years with generalized gingivitis, profuse bleeding and intense pain of the gingiva, generalized poikiloderma and photosensitivity, that was compatible with Kindler syndrome.

Comments: EB has many oral manifestations that require a particular focus from the dental point of view, although given its low prevalence, many dentists are unfamiliar with the disease.

Two decades ago it was declared that the successful oral management of this disease was impossible, but currently we have the means and knowledge that allow a careful and productive approach, even for the most aggressive subtypes such as recessive dystrophic EB.

Conclusions: Hereditary epidermolysis bullosa affects the skin and the mucosa. It has a very variable presentation although some types improve with age. The prognosis may be severe, depending on the seriousness of the complications.

Hereditary epidermolysis bullosa represents a huge challenge for pediatric dentists, and we should therefore be familiar with its management in order to provide safe and effective treatment. It is also important to create an oral care prevention program for these patients.

55. OBSTRUCTIVE SLEEP APNEA SYNDROME: SUSPECTED DIAGNOSIS IN PEDIATRIC DENTISTRY

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Introduction: Obstructive sleep apnea syndrome (OSAS) is a type of sleep related breathing disorder. It is characterized by repetitive episodes of partial or complete obstruction during breathing.

It is a pathology that affects between 2 and 4% of children. The clinical relevance of OSAS lies in that it damages cardiovascular, neurocognitive and metabolic systems hampering the normal development of the child.

The gold standard for diagnosing this is polysomnography. The patient's medical history, physical examination and use of questionnaires on sleep are a widely used alternative and valuable for screening in primary health care, and for example dental clinics.

Objectives: To present the signs and symptoms that may help pediatric dentists to carry out a presumptive diagnosis of this pathology, and to discuss the options of referring these patients.

Material and methods: A literature search was performed of articles in English and Spanish in the electronic databases of Medline, Cochrane, and Embase. Articles published between 2005 and 2014 were chosen. Systematic literature reviews were chosen as well as retrospective reviews with a follow-up of more than 3 years. Informative articles and letters to the editor were excluded.

Results and discussion: The signs and symptoms with the greatest sensitivity for diagnosis were: snoring every night 91%, breathing difficulty during sleep 85%, adenoid tissue greater than grade 3, 81%. The highest values for specificity were observed in hypoplasia affecting half the face 100%, adenoid facies 100%, micrognathia/retrognathia 95%.

With regard to questionnaires, the one by Goldstein (1995) and Chervin (2000) show sensitivity of 92% and

81% respectively, while those with greater specificity are also of Chervin (2000) and Lamm (1999) both with 83%.

Conclusions: With suitable anamnesis, clinical examination and sleep questionnaires a suspected diagnosis of these patients can be established. The most effective sleep questionnaire for diagnosing OSAS was that by Chervin (2000).

The specialists involved in the treatment of these children vary according to the autonomous communities. For this reason when a pediatric dentist suspects that a patient suffers from this disorder, it is best to consult a pediatrician in the area who will refer or recommend the referral to the right department depending on each case.

56. BISPHOSPHONATES IN PEDIATRIC PATIENTS: WHAT PEDIATRIC DENTISTS SHOULD BE AWARE OF

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Introduction: Bisphosphonates are drugs that have been classified as bone resorption inhibitors. They increase bone density by binding to mineralized bone and inhibiting osteoclastic resorption, and reducing the risk of fracture.

During the last decade the clinical use of bisphosphonates in children and adolescents was widened and the indications are more common than for osteogenesis imperfecta and osteoporosis. Bisphosphonates can be administered orally or intravenously. The dosage, cycles and intervals vary according to the age of the child, diagnosis and response to therapy. The possible adverse effects are: osteonecrosis of long bones, delay in tooth replacement and limitations to orthodontic treatment.

Objectives: To identify situations in which a child patient can take bisphosphonates, to analyze the information on the effects in the short and long term, and to propose a course of action for these patients.

Methodology: A search in Medline, WOK, Embase, Scopus and cluster searches were performed. Inclusion criteria: 2004-2015, in Spanish and in English, complete text, randomized clinical trials, clinical guides, meta-analysis and systematic reviews. Exclusion criteria: duplicated articles that did not respond to the objectives and that were not connected to dentistry.

Results and analysis: 12 articles were chosen: 6 in PubMed, 1 in Wok and 5 in manual searches.

To date we have been unable to demonstrate a direct cause-effect relationship between intravenous bisphosphonates and osteonecrosis of the jaws. The osteoclastic effect produced by bisphosphonates could be the product of multiple concomitant factors. Although no cases have been published in the literature on osteonecrosis of the jaws in children and/or adolescents, associated complications in pediatric patients cannot be ruled out, as it is not known what dosage and treatment period lead to a greater risk of secondary effects. There are no guidelines, recommendations or specific protocols for the dental management of child patients with bisphosphonates.

Conclusions: It is important for pediatric dentists to become acquainted with the most common denominations of these drugs. A patient's medical records should reflect the type of bisphosphonate, administration method, dosage, treatment period and if taken in conjunction with other medication. Pediatric dentists should establish a treatment plan taking into account when the therapy with bisphosphonates started, the duration, and there should be direct communication with the medical team treating the child.

57. DOES PROFESSIONAL EXPERIENCE INFLUENCE DENTAL TREATMENT UNDER GENERAL ANESTHESIA OF DISABLED PEDIATRIC PATIENTS?

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Introduction: The systematic use of general anesthesia (AG) has become increasingly important over recent decades and it is a highly rated tool for managing patients with behavioral problems.

Objective: The aim of this study was to determine if the experience of the dental team influences the nature of the procedures carried out and the duration of the interventions.

Material and method: The study group was made up of 290 severely disabled patients who were aged between 3 and 18 years. They received integral dental treatment in the Special Patients Unit of the Faculty of Medicine and Dentistry of the University of Santiago de Compostela, between 1998 and 2013. The variables registered for each patient were: age, sex, systemic disease diagnosis behind the disability, type and number of dental procedures carried out and duration of the procedure. All the variables were analyzed in relation to the years of experience of the dental team, dividing the study period into 3 periods: 1998-2002, 2003-2007 and 2008-2013.

Results: None of the variables analyzed varied so much that they were statistically significant in relation to the period analyzed as an indirect expression of the experience of the operators. The duration of the procedures was conditioned fundamentally by the underlying systemic disease.

Conclusions: The experience of the dental team does not seem to be a determining factor in relation to the nature of the procedures that are carried out under general anesthesia nor the duration of the intervention, although the long term clinical results of the treatment were not assessed in this study.

58. ORAL MANIFESTATIONS AND DEGREE OF ORAL HYGIENE COMPLIANCE IN ONCOLOGICAL PEDIATRIC PATIENTS

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Introduction: Antineoplastic treatment in pediatric patients leads to pathological disorders in the oral cavity. These have a greater prevalence and severity in children due to faster cellular kinetics. Dental programs on prevention, early diagnosis and personalized treatment can minimize the oral repercussions and improve the quality of life of these patients during oncotherapy.

Objectives: To discover oral health status and oral complications from oncotherapy. And to evaluate oral hygiene adhesion once started as per the protocol of the Hospital Sant Joan de Déu in Barcelona.

Materials and methods: Prospective study of 60 oncological patients from December 2014 to February 2015 in the Hospital Sant Joan de Déu in Barcelona. They were evaluated at the start and periodically during the chemotherapy.

During the “debut” a register was taken of their oral health, hygiene habits and deft and DMFT index. They received instructions on oral hygiene together with a chlorhexidine-fluoride protocol. In addition they were given an adherence questionnaire for a one month period.

Results: The sample studied was made up of 60 patients (55% males and 45% females) with a mean age of 7.5 years (range 1-16).

With regard to the oncological pathology, leukemia was 40%, solid tumors 28.3%, CNS tumors were 11.6% and other neoplasms made up for 20%.

Some 26.6% of the sample had complications with the antineoplastic treatment, mucositis being most common (16.6%), followed by ulcers (11.6%), gingivitis (8.3%) and herpes (1.6%) and some conditions could coexist in the same child. The caries index deft and DMFT was less than one and brushing frequency was once a day.

100% of the sample showed an interest in prevention guidelines and oral hygiene instruction, but only 30% participated in the adherence questionnaire on orodental hygiene and an increase in brushing was observed.

Conclusions: Oral health status was good and caries index was under one. The most common orodental complication in the sample studied was mucositis. The participation was under 50% in this questionnaire on oral hygiene, despite all the families being receptive. A personalized dental exam is very important so that both child and parents follow clear instructions on oral hygiene and motivation.

PULP/ENDODONTICS/TRAUMATOLOGY

59. *IN VITRO* STUDY OF THE ADHERENCE OF TWO MATERIALS WITH AN MTA BASE TO HUMAN PERIODONTAL LIGAMENT FIBROBLASTS

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Introduction: Numerous materials have been used for sealing roots in endodontic surgery procedures. Cur-

rently, mineral trioxide aggregate is one of the alternative materials for furcal repair as it is biocompatible, it has a good sealing ability and it encourages pulp and periradicular tissue regeneration. In furcal lesions or for the repair of subgingival defects, it is essential that a union of these materials with the tissues supporting the tooth is reestablished; bone, ligament and cement.

Objective: The aim of this study was to assess the union of these materials (MTA Pro-root® and MtaAngelus®) to human periodontal ligament fibroblasts.

Material and method: For this a primary culture of fibroblasts was carried out that had been obtained from the periodontal ligament of two first premolars that had been extracted for orthodontic reasons. After various subcultures, and once the maximum confluency had been reached, 250,000 cells were deposited in droplets on 6 cm culture dishes. After 3 days, the cells were put into contact with the materials under study (MTA Pro-root® and MtaAngelus®). After 72 hours, the cells were fixed and stained in cresyl solution. A stereomicroscope was used in order to assess cellular adhesion to these materials.

Results: Good cellular adhesion was observed for both materials with an abundance of cell aggregates on the substrate of MTA Pro-root® and MtaAngelus®.

Conclusions: The method we have used in this study is suitable for assessing the adherence of these materials to bone and dental tissue.

60. KNOWLEDGE AND MANAGEMENT OF TRAUMATIC DENTAL INJURIES BY NURSERY AND PRIMARY SCHOOL TEACHERS: A PILOT STUDY

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Introduction: Currently dental trauma represents the second reason for seeking pediatric dental care after caries. Most traumatic dental injuries occur at home followed by education centers. Treatment success after suffering dental trauma depends on the early and correct management of the situation, which depends in turn on the people at the scene of the accident. There are authors who affirm that parents and teachers, people close-by and who witness most of these situations, lack information and knowledge for managing these types of situations correctly.

Objective: The main aim of this study was to evaluate the knowledge of nursery and primary school teachers on dental trauma.

Material and methods: A longitudinal non-experimental and descriptive study is being carried out in public, private and government funded schools in the metropolitan area of Valencia. The study is based on a survey that is made up of two parts, a first section that includes basic demographic information and the second section with 10 questions on the management of traumatic dental injuries that was aimed at nursery and primary school

teachers. The data collected was analyzed statistically using R Commander software, the Chi-squared test for independence and Pearson's correlation coefficient.

Results: The preliminary sample was made up of 90 surveys that had been filled in and analyzed. Only 8.89% of those surveyed would take a child directly to a dental clinic after suffering dental trauma. However, 70% of the teachers would take the child directly to an accident and emergency department, and 77.78% would look for the fractured part of the tooth and they would keep it. Only 10% of those surveyed knew that a luxated tooth had to be repositioned and only 13.33% would replace an avulsed permanent tooth. At least 40% of those in the survey would keep an avulsed tooth in a suitable medium.

Conclusion: There is considerable misinformation among teachers with regard to the management of traumatized teeth leading to the mismanagement of these situations when they occur during school hours, and this can negatively influence prognosis. Pediatric dentists have to make a special effort to become involved in teacher training so that proper action is taken under these circumstances and the prognosis is improved.

61. PULPOTOMIES WITH MTA VERSUS FORMOCRESOL. LONG-TERM REPERCUSSIONS ON THE PERMANENT SUCCESSOR

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Introduction: Formocresol (FC) has been the drug of choice for pulp treatment in the primary dentition given that it is easy to use and it has excellent clinical results. However, many studies have detected potentially adverse effects at a local as well as systemic level, leading to considerable controversy regarding its use. All this has led to numerous studies in order to find an alternative drug to formocresol. Mineral trioxide aggregate (MTA) is an alternative drug that develops more complete dentine bridges and that has a better capacity for maintaining pulp tissue integrity.

Objective: The aim of this study was to determine if any differences can be found between pulpotomies with FC or MTA with regard to clinical and radiological evidence, and the long-term effect on the permanent successor.

Material and methods: 150 children aged 2-10 years who were attending a private dental clinic specializing in pediatric dentistry participated in the study. The medical history of all the patients was taken, and they all underwent a clinical and radiographic examination. After applying the inclusion and exclusion criteria, a sample of 212 molars was obtained. These were evaluated post-operatively according to the criteria of Zealand et al. for 6-, 12-, 18-, 24-, 30-, 36-, 42-, 48- months. For the statistical analysis the chi-squared test was used and the correla-

tions were established using Spearman's coefficient ($p < 0.05$).

Results: A success rate of 89.9% was obtained with MTA and 82.5% in the FC cases. The radiological failure found in the molars treated with MTA was 7.97% of which 2.17 had RF; 0.72% RRINP, 2.89% RRIP and 2.17% RRE. In the molars treated with FC the result was 18.91% of which 1.35% had RF; 1.35% RRINP; 8.10% RRIP and 9.45% RRE. With regard to premature/delayed eruption, premature was 22% (n: 10) and delayed was 24% (n: 12) for MTA and for FC premature was 28% (n: 7) and delayed accounted for 10.4% (n: 3).

Conclusion: The clinical and radiological success found in the MTA pulpotomies was superior to that found in the FC pulpotomies, although the differences were not statistically significant ($p > 0.05$). The dentin bridges and pulp canal obliteration observed with MTA was greater than with FC, although significant differences were not found ($p > 0.05$). Long term studies are needed in order to study pulpotomized molars until shed.

62. DECORONATION AS TREATMENT FOR AVULSED YOUNG ANTERIOR TEETH: A CASE REPORT

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Introduction: Dental avulsion following traumatic injury in the permanent dentition has an incidence of between 0.5-6.2% (7-8). Most of the traumatic dental injuries affect children aged 8-10 years, when the alveolar process is still developing. In order to minimize bone resorption entailing the extraction of an avulsed tooth, Malmgren et al. (1984) developed the concept of decoronation with the idea of maintaining the root and preserving the alveolar bone, which permitted optimal conditions for future rehabilitation.

Objective: A case report is presented with decoronation of traumatized teeth with a follow-up period of 28 months.

Case report: A 9 year-old patient attended the Universitat Internacional de Catalunya following avulsion of 11, 12 and 21 which were reimplanted immediately. During recall a year later substitution resorption was observed of the avulsed teeth which then underwent decoronation.

Comments: Decoronation is an alternative treatment to surgical extraction of an ankylosed tooth which often leads to considerable bone loss. It has been demonstrated that carrying out this procedure at the right time permits maintaining the buccopalatal alveolar width, while vertical growth takes place.

Rehabilitation can then be carried out when growth is complete without the need for procedures to increase the crest in order to place an implant, because the best aesthetic appearance and results will be achieved if it is placed into tissues that are developing normally. However, in 2004 Schwartz-Arad et al. indicated that on occasions horizontal bone addition may sometimes be

necessary before placing an implant due to the migration of the remaining root to a more apical position as a result of ankylosis.

Conclusion: The clinical consequences of ankylosis in growing patients are complicated. Given that ankylosis has a poor prognosis it should be diagnosed quickly. In these cases decoronation should be considered an option given predictable and successful results with avulsed teeth, but following an assessment of the age and growing pattern of the patient.

63. REVASCULARIZATION OF IMMATURE PERMANENT TEETH WITH NECROTIC PULPS AND APICAL DISEASE: A SERIES OF CASES

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Introduction: Immature permanent teeth with necrotic pulps and periapical disease are a challenge for dentists given that after classical apexification techniques, apical root development ceases, dentinal walls shrink, and the tooth becomes weaker and more susceptible to fracture. Revascularization has been proposed as a therapeutic alternative in these cases which would permit the complete formation of the roots, closure of the apex and a thickening of dentinal walls.

Case reports: A series of case reports are presented for debate with age ranges from 6 and-a-half to 8 and-a-half years and periapical disease affecting young permanent molars with an open apex or incisors. The following protocol for revascularization procedures was followed: anesthesia, rubber dam isolation, 2% chlorhexidine for cleaning the surface of the crown. Next the pulp chamber was opened and the root canals were irrigated with 2.5% NaOCl and the EndoVac system, they were dried with paper pellets and with minimal instrumentation. Finally triple antibiotic paste (metronidazole, ciprofloxacin and minocycline) was mixed with distilled water and placed in the root canal in equal proportions with a lentulo filler. The access to the chamber was temporarily sealed with IRM and glass ionomer. Clinical and radiological assessment was carried out at 2,6,12 months and once a year until complete closure of the apex.

Comments: The protocol for the revascularization of immature necrotic permanent teeth has not been standardized. Different techniques are being used for root canal instrumentation and pulp irrigation, with differing concentrations and intracanal medication. Most authors propose triple antibiotic paste made up of a mixture of ciprofloxacin, metronidazole and minocycline.

Conclusions:

- The results obtained from revascularization in the cases presented are very encouraging with regard to prognosis of the apexes.
- Revascularization is an alternative to be kept in mind for necrotic immature teeth which has con-

siderable advantages with regard to apexification. More standardized and randomized studies with long-term monitoring are needed.

64. CONTROVERSIES REGARDING THE TREATMENT OF IRREVERSIBLE PULPITIS IN THE PRIMARY DENTITION

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Introduction: In a primary tooth, when there is spontaneous pain, abscess or profuse bleeding of the pulp that does stop with pressure, the clinical diagnosis will be of reversible pulpitis. The treatment of choice for maintaining the tooth in the dental arch is a pulpectomy. Primary teeth have different characteristics to permanent teeth and this should keep in mind when choosing the type of mechanical and chemical cleaning and the obturation material for the root canals.

Objective: To discuss the advantages and disadvantages of the different procedures for treating irreversible pulpitis of primary teeth.

Material and methods: a search was performed of the literature in the databases of Pubmed and Google Scholar using the following descriptive terms *pulpectomy, irreversible pulpitis review, vascular status on primary teeth, pulpitis in temporary teeth*. Some 428 articles were found of which 15 were used. The remainder was discarded given that the content did not adjust to the objectives of the study.

Results: Pulp vascularization, dentine thickness, apical constriction as well as the response of the primary tooth to the aggressions of continuous physiological change, will influence the choice of treatment protocol. We know that not all the irrigation solutions will act in the same fashion but we can increase their effectiveness so that the root canals are cleaned more thoroughly. Moreover, there are many pastes that can be used for filling root canals, and each paste should be chosen depending on the case.

Conclusions: given the results of this update we believe that activated sodium hypochlorite should be used with a filling of calcium hydroxide paste containing iodoform in order to achieve a good prognosis in pulpectomy treatment.

65. PULP TREATMENT FOR IMMATURE PERMANENT MOLARS

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Introduction: In pediatric dentistry it is common to treat patients with immature teeth that are affected by caries. Correctly evaluating pulp status is essential if we are to reach a precise diagnosis and determine the right treatment. However, determining the condition of the

pulp is difficult and the success or failure of the treatment will depend on this. There is no reliable mechanism to evaluate the degree of pulp inflammation. The pain caused by pulpitis is often subjective and not reliable for assessing the prognosis of pulp treatment.

Case report: The case is presented of a patient aged 6 years who attended the Masters degree course on Integral Pediatric Dentistry of the Universitat Internacional de Catalunya due to “tooth ache” affecting a molar. The X-ray revealed a deep carious lesion affecting the pulp and open apexes. After anesthetizing and isolating tooth 3.6 the caries was removed and the pulp exposed. After 3mm of pulp was removed, the bleeding was controlled using cotton impregnated with 5.25% sodium hypochlorite. The tissue was then covered with biodentine and the tooth was restored temporarily with zinc oxide-eugenol cement. Two weeks later the tooth was monitored and, given that there were no clinical or radiographical symptoms, the definitive composite restoration was carried out. Periodic monitoring was carried out very six months for a total of 32 months.

Comments: Pulp therapy has a high success rate, if the following conditions are met: 1) the pulp is not inflamed; 2) bleeding is properly controlled; c) there is a suitable covering; and, d) good marginal seal of the restoration material. Many materials have been used for inducing normal root development. Traditionally calcium hydroxide has been used but recent data indicate that better results are obtained by applying Mineral Trioxide Aggregate (MTA). However, this material has certain disadvantages as it is difficult to handle, it has a long setting time and it may produce discoloration. Biodentine is a new calcium silicate based cement that is suitably resistant to compression, it has a short setting time and it will not stain the crown.

Conclusions: After 32 months we observed apical closure with no clinical symptoms in the molar treated with Biodentine. It would appear that biodentine could be an alternative to MTA for pulp treatment of permanent teeth.

66. CONSEQUENCES OF TRAUMATIC INJURY TO PRIMARY TEETH. A CASE REPORT

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Introduction: Traumatic dental injuries that arise in the primary dentition are a considerable problem in Pediatric Dentistry, as they have medical, aesthetic and psychological consequences for the child as well as for the parents. The lesions that arise most frequently in the primary dentition are those that affect the periodontal ligament and supporting tissues. The sequelae from the trauma to the permanent dentition may affect the crown or root, and the eruption of the tooth may even be affected.

Objective: To present a case of delayed eruption in a permanent incisor, to outline the treatment carried out, and to assess the different options proposed in the literature.

Case report: The case is presented of a girl aged 8 years and 2 months who was seen on the Master’s Degree Course of the Universidad Complutense due to the asymmetrical eruption of the upper permanent central incisors. During the clinical examination the complete eruption of tooth 11 was observed, with tooth 61 still in the mouth and with no mobility. A diagnosis was given of eruption disturbance as a result of a traumatic injury to the primary dentition, with extraction of the primary incisor and the fitting of a space maintainer in order to avoid the deviation of the midline. Surgical exposure was carried out of tooth 21 and it is currently expected to appear in the dental arch.

Comments: Eruption disturbances to the permanent successor after a traumatic injury include impaction, ectopic eruption, eruption delay, formation of scar tissue and ankylosis of the primary tooth. These are all consequences of changes in the supporting tissue that surrounds the permanent tooth.

A pathognomonic sign that indicates impaction of a permanent upper central incisor is the presence in the arch of a homolateral permanent lateral incisor, which would indicate an abnormality in the eruption process of the central incisor.

The therapeutic modalities for the eruption failure of a permanent upper central incisor are:

- Maintaining the space + surgical exposure ± orthodontic traction.
- Extraction + orthodontic closure of the space.
- Extraction + maintaining the space.

Conclusions: A presumptive diagnosis has to be given when an upper permanent incisor fails to erupt. Obstacles have to be ruled out, the space for the incisor has to be maintained and finally, the surgical exposure of the tooth should be considered followed by gentle orthodontic traction.

OTHERS

67. LATE DEVELOPMENT OF SUPERNUMERARY TEETH: PRESENTATION OF 4 CASE REPORTS

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Introduction: Supernumerary teeth are those that increase the normal number of teeth in the arch. Depending on their chronology they are classified as pre-deciduous, similar to permanent teeth or post-permanent. Their etiology has been questioned but the theories are only hypothetical. The most accepted theory is the hyperactivity of the dental lamina which would in addition explain the late formation of supernumerary teeth.

Objectives: There are very few cases in the literature that describe the late development of supernumerary teeth. In this communication we present 4 case reports of late appearance of supernumerary teeth and their treatment.

Case reports: *Case report 1:* patient aged 12 years who had an orthopantomography on completing his orthodontic treatment. Three supernumerary premolars were observed that were monitored radiographically. *Case report 2:* patient aged 17 years who periodically attended for monitoring following orthodontic treatment. During the radiographic examination a supernumerary premolar appeared that was monitored radiographically. *Case report 3:* patient aged 19 years who was diagnosed with a supernumerary premolar during a check, which was observed by means of radiographical examination. *Case report 4:* 14-year-old patient who underwent a clinical and radiographical examination before orthodontic treatment. By chance a supernumerary upper incisor was observed which was surgically removed.

Comments: Multiple supernumerary teeth are very uncommon and they tend to appear as part of syndromes. However, it has been observed that on some occasions they can appear without this association. In view of this, the first case presented concerned a non-syndromic patient. Most of the cases of late supernumerary teeth reflected in the literature are mandibular premolars, as were three of the cases presented, with the shape and size of a premolar. Different treatment options were observed: surgical removal and monitoring by means of periodic radiographic examination. This second option is considered mainly for patients already undergoing orthodontic treatment, as in the first three cases presented, since interference in terms of function and aesthetics is not very likely.

Conclusions: It is important to consider the possibility of developing late supernumerary teeth, mainly in the area of mandibular premolars. This has to be taken into account especially during orthodontic treatment given the possible complications that may arise. This highlights the importance of routine radiographic monitoring of children with developing dentitions, and later until they reach adulthood.

68. THE USE OF CONE BEAM-COMPUTED TOMOGRAPHY IN PEDIATRIC DENTISTRY

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Introduction: Today cone beam-computed tomography is not only used in implantology. In specialties such as endodontics, orthodontics and pediatric dentistry it is being increasingly used. In the case of pediatric dentistry it is useful for the diagnosis of embedded teeth, impacted teeth after a traumatic injury and for supernumerary teeth.

Objective: Presentation of a case in which the diag-

nosis of upper central impacted incisor was reached by means of CBCT as a complementary diagnostic method.

Case report: A girl aged 11 years came for a consultation because of the non-eruption of tooth 1.1. Her medical history revealed slight/low mental retardation, an IQ of 71 using the WISC-IV, a specific language disorder and antecedents of child abuse. She is currently living with an adoptive family. During the dental examination we observed that she had in a normal position teeth 5.1, 5.5 but 1.6, 1.2 were in mesioversion and 1.3 was in the place of 1.4. There was buccalization of the upper incisors and deviation of the upper midline towards the right. Class II molar on right and left side. In order to reach a correct diagnosis a periapical radiography was carried out together with an orthopantomography. Both showed a tooth with a "paramolar" appearance in an apical position to 1.3. Given the lack of information for a correct diagnosis and in order to carry out the correct treatment, we decided to carry out a CBCT. This showed a central incisor with normal morphology in an apical position to 1.3 and agenesis of 1.4.

Comments: As indicated by various authors, CBCT provides more information than traditional radiographies with regard to location and the morphology of a disease. Despite this, the benefits of using CBCT should be greater than the harm to the child from the radiation received.

Conclusions: Although at first we had a choice of various diagnostic options, given the information obtained from the CBCT we reached a single diagnosis: impacted incisor following a childhood traumatic injury. For this reason, in our opinion, the use of CBCT is advisable for pediatric patients with embedded teeth, when there are uncertainties as to the shape and position.

69. RELATIONSHIP BETWEEN MIH AND ECTOPIC ERUPTION

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Introduction: During regular dental examinations finding color and structure defects that affect permanent first molars and occasionally permanent incisors is becoming increasingly common.

Molar incisor syndrome (MIH) affects permanent first molars and frequently also incisors. According to most studies, the teeth that are most affected are 1.6 and 2.6 and the upper arch is more commonly involved than the lower arch.

The maturation phase of the enamel fails to complete in teeth with the syndrome. As a result of this condition, these teeth may have atypical eruption. Both MIH syndrome and ectopic eruption affect the upper first molars more commonly and these pathologies may have a significant relationship.

Main objective: To analyze the relationship between MIH syndrome and ectopic eruption of permanent first molars. *Second objective:* To study what teeth are more commonly affected. To find out if there are significant

differences with regard to sex. To study if the upper and lower jaws are affected to different degrees. To analyze the frequency of MIH with ectopic eruption and to compare this with molars that erupt normally.

Material and methods/Description of the sample: The sample was chosen from patients who were attending the Master's Degree Course in Pediatric Dentistry of the UEM for a diagnosis and treatment or their oral conditions and, given this, those who had MIH on clinical examination were chosen.

In order to diagnose MIH we based ourselves on the accepted definition from Athens in 2003 that defined the phenomenon as hypomineralization of systemic origin of one to four permanent molars, frequently associated

with opacities of incisors. During the intraoral examination, MIH was identified with the aid of a dental chair, chair light, mirror and probe. If the pathology was confirmed, bitewing radiographs were carried out in order to see if ectopic eruption of the permanent first molars had occurred.

Results: Out of the patients that attended the UEM, 30 cases of MIH syndrome were found of which 4 had ectopic eruption of some permanent first molar.

Conclusion: The preliminary results of this study do not permit identifying statistically significant data as to whether there exists a relationship between abnormal eruption of the permanent first molar with the same molar being affected during the enamel formation process.