

## Oral Communications

### 1. TRAUMA TO TISSUE SUPPORTING THE PERMANENT DENTITION: TREATMENT UPDATE

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*Introduction:* Dental trauma has acquired greater relevance in the area of pediatric dentistry as one out of every five school age children are affected. And avulsion is one of the few really urgent situations in pediatric dentistry.

*Objectives:* The aim of this study is to analyze the current treatment guidelines regarding trauma affecting supporting tissues, and in particular, avulsions.

*Material and methods:* A revision of the literature using the latest published studies in the Pubmed data base.

Presentation of clinical cases diagnosed and treated in the Pediatric Dentistry department of the San Rafael Hospital in Madrid.

*Conclusions:* The first phase of treatment in dental trauma determines to a large extent the prognosis of the tooth affected. In the case of avulsion and certain types of luxation, this situation becomes more serious. Therefore, it is essential that health professionals and other specialists working with children, be familiar with the basic action guidelines in order to favor the prognosis of the tooth.

### 2. ORTHODONTIC EXTRUSION IN A CROWN-ROOT FRACTURE OF A CENTRAL INCISOR. 12 YEAR FOLLOW-UP

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*Introduction:* Orthodontic extrusion may be the best therapeutic option in anterior teeth with infraosseous crown-root fractures and incomplete root development. Crown-root fractures are defined as those fractures that involve the enamel, dentine and cement, and there may or may not be pulp involvement. The incidence of this type of fracture represents 5% of injuries affecting the permanent dentition and 2% of primary dentition injuries. Most of these lesions occur as a result of a direct impact in which the force exceeds the resistance of hard tissues to the cut.

In the posterior area these fractures are caused by an impact on the chin directed towards the maxillary or mandibular structures which generates a traumatic occlusion leading to a fracture.

*Objectives:* To determine the treatment options according to root development and fracture line, as well

as the force used for carrying out the orthodontic extrusion.

*Material and methods:* A revision of the literature was carried out in Pubmed and the Cochrane library of international journals included in the "Journal Citation Report" and of national journals, as well as books. A case report is presented with a follow-up of 12 years.

*Conclusions:* The prognosis of this type of fracture will depend on its depth as well as its involvement in the aesthetic result. And, for this multidisciplinary treatment will be very important.

### 3. GUIDELINES FOR PULP TREATMENT OF CROWN FRACTURES

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*Introduction:* Based on anatomic, pathologic and therapeutic considerations, crown fractures are classified according to the WHO and the posterior modification of Andreasen (1977) into: infraction (incomplete fracture of the enamel with no loss of dental substance); non-complicated crown fracture (fracture affecting only the enamel or the enamel and dentin with no pulp exposure) and complicated crown fracture (fracture affecting the enamel, dentine and pulp).

They represent a greater percentage in the permanent dentition than in the primary dentition with the peak incidence occurring between the ages of seven and ten. They are most commonly located in the UCI. These lesions normally occur as a result of falls or direct blows to the anterior teeth.

*Objectives:* To determine the current guidelines for pulp treatment of enamel-dentine and enamel-dentine-pulp fractures in young permanent teeth according to the time elapsed, size of the pulp exposure, lesion with or without periodontal ligament involvement and root development stage.

*Material and methods:* A revision of the literature was carried out on dental trauma according to crown fractures in the last five years in Pubmed and the Cochrane library of international journals included in the "Journal Citation Report", and of national journals, as well as books. Four case reports are presented of enamel-dentine and enamel-dentin-pulp fractures, in which different pulp treatment was carried out.

*Conclusions:* It is vitally important that a correct clinical and radiological examination is carried out, as well as vitality tests in order to reach a correct diagnosis, as the prognosis will depend on the diagnosis that is established and on how early treatment is started.

#### 4. DIRECT PULP PROTECTION AND PULPOTOMIES IN IMMATURE PERMANENT TEETH

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*Antecedents:* Therapeutics based on pulp protection have always been given much importance in investigation, especially the biological aspect. In spite of all the recent advances regarding prevention, diagnosis and treatment, on many occasions there is still a need for carrying out complex treatment in order to maintain pulp vitality, with this fact presenting a real challenge in clinical practice. Providing that direct pulp protection and pulpotomies are carried out using materials, a technique and indications precisely and rigorously, this will constitute a valid clinical option with innumerable advantages over radical endodontic treatment. Most of the clinical studies on direct pulp protection, and more specifically on the possibility of this type of treatment leading to positive pulp response, with the formation of dentin bridges that repair and protect, have scant scientific evidence, and a methodology is used that is heterogeneous and of little relevance.

*Treatment applied and details observed:* When carrying out the case reports to be presented, essentially of deep caries lesions and trauma episodes, a series of factors were taken into account that included for example the cause and size of the exposure, the degree of hemorrhaging, the type of tooth, the age of the patient, the material to be used (MTA and adhesive systems), and the time elapsed from exposure to bacterial contamination. The evaluation of the response capacity was based on the influence of the anatomic and physiological characteristics of the dental pulp, with especial consideration to the peculiarities of young pulp tissue.

*Treatment monitoring:* The authors present treatment techniques that are illustrated step by step with various clinical cases and follow-up periods of over two years. Included is obligatory pulp vitality monitoring, later symptomatology, formation of the dentin bridge, and all the clinical and radiological disturbances that should be mentioned.

#### 5. HISTOLOGIC STUDY OF THE TISSUE OF DENTAL SACS WHEN IN CONTACT WITH 4.2% SODIUM HYPOCHLORITE, 2% CHLORHEXIDINE AND 0.9% PHYSIOLOGICAL SALINE

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*Objective:* To assess the histologic changes in the tissue of dental sacs when in contact with the different irrigants used in endodontics (4.2% sodium hypochlorite, 2% chlorhexidine and 0.9% physiological saline).

*Material and methods:* The sample was made up of 15 molars of patients aged between 12 and 18, who were seen in the Clínica Universitaria de Odontología (CUO) of the Universitat Internacional de Catalunya. Fifteen

tooth germs were extracted (5 in each group) of third mandibular molars. Group 1: 4.2% sodium hypochlorite; Group 2: 2% chlorhexidine, Group 3: 0.9% physiological saline. Once the germectomy had been carried out, the dental sac was removed and 4 cuts were made, into which the chosen irrigant was placed (5 ml). The first cut was in contact for 2 minutes with the chosen irrigant, the second cut 5 minutes, the third 10 minutes and the fourth was fixed directly (monitoring cut). Once the samples had been fixed, they were sent to the department of pathological anatomy of the Capió Hospital General in Catalunya to be viewed histologically with an optic microscope.

*Results:* In the physiological saline group and the chlorhexidine group no statistically significant differences were obtained in any of the cuts carried out in the dental sac tissue ( $p > 0.05$ ). On the other hand, in the sodium hypochlorite group, 4.2% showed necrotic areas as from the second cut (2 mins) compared with the control cut ( $p < 0.05$ ).

*Conclusions:* 4.2% Sodium hypochlorite is not an irrigant of choice for carrying out pulpectomies in primary teeth.

#### 6. AESTHETIC AND PULP CONSIDERATIONS IN COMPLICATED CROWN FRACTURES

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*Introduction:* Dental trauma lesions in the anterior region that involve a crown fracture, are lesions with a high prevalence in children and adolescents. When these crown fractures involve pulp exposure, the first therapeutic approach is decisive, due to the pulp being involved and the need for suitable restoration treatment. One of the treatment options for managing crown fractures when the fragment has been recovered is repositioning. The adhesion of the fragment to the remaining tooth is a restorative technique that provides the best and longest aesthetic solution, as the tooth retains its original anatomy and it has the right color and translucency.

A pulp treatment option in these cases is a partial pulpotomy. This treatment has shown satisfactory results as a conservative alternative even 48 hours after the trauma.

*Case report (presented in video format):* The case is reported of a 10 year old patient who had suffered a complicated crown fracture of tooth 21. The different possibilities were analyzed for repositioning the fragment and for treating the exposed pulp. For the case in question we decided on carrying out a Cvek pulpotomy and the fractured fragment was repositioned using adhesive techniques and stratification composites.

#### 7. PREVALENCE OF DENTAL TRAUMA IN PRESCHOOL CHILDREN AGED BETWEEN 3 AND 6

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**Introduction:** In the preschool population trauma represents, after dental caries, the second reason behind emergency visits to the dental consulting room. Statistical data indicate that one out of every two preschool children will suffer dental trauma, and in school age children one out of every six, with primary teeth lesions starting between the ages of one and a half and two and a half, as soon as they start walking as they often fall forwards.

**Objectives:** The aim of this work was to analyze the prevalence of dental trauma in preschool children aged between 3-6.

**Methodology:** A talk was given to pupils of the Colegio Joaquín Costa in conjunction with the graduation students of the European University in Madrid as part of their academic curriculum, which explained what dental caries is, how it is produced, oral hygiene techniques and what to do in cases of dental trauma. An oral examination was then carried out of the children who brought a letter of consent signed by their parents.

**Results and Discussion:** The study permitted the identification of 29 children with hard tissue lesions, 7.74% of the total sample (375 children). The prevalence distribution according to sex and age coincided with the data reported by other authors on the problem. Boys are involved more in accidents, 3,4 and 5 are the ages in which there is more predisposition to incidents regarding oro-dental tissue lesions.

## 8. APEXIFICATION IN IMMATURE YOUNG TEETH

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**Introduction:** Endodontic treatment of necrotic teeth with an open apex by means of apexification is a true challenge for dentists. It consists in inducing the formation of a calcified apical barrier in order to avoid the overextension of the obturation material so that a good seal is achieved. This will limit bacterial infection and lead to the formation of mineralized apical tissue. Various materials have been proposed, of which the most used has been calcium hydroxide. As an alternative MTA (Mineral trioxide aggregate) allows carrying out the treatment in just one session.

**Objective:** The aim of this study was to make a comparative analysis of the studies published, despite being few in number, with regard to apexification with MTA, and to provide pediatric dentists with guidelines to be put into clinical practice. For this clinical cases carried out by these authors are presented together with video documentation.

**Material and methods:** The scientific supportive material was obtained in Pubmed using the keywords "MTA + Apexification + Paediatric Dentistry" and 20 articles were chosen according to the publication year (2005-2009), scientific content and publication type...

**Conclusions:** MTA is indicated for apexification, due to its characteristics, which include low toxicity, biocompatibility, soft tissue promotion and antimicrobial

properties. In addition, to encourage apex formation in just one session, the pediatric dentist anticipates the final restoration, thus improving the prognosis of the tooth.

## 9. ESTHETICAL RESTORATION WITH WHITENING TREATMENT AFTER TRAUMA TO A PRIMARY TOOTH. CASE REPORT

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**Introduction:** Chromatic disturbance as a result of dental trauma tends to be common. Disturbances to color can arise from dental necrosis, from pulp hyperemia or from pulp chamber and canal obliteration. The treatment of fractured teeth is essential for the functional and psychological rehabilitation of the child.

In a complicated crown fracture of a primary tooth, one of the treatment plans defended is a pulpectomy and later restoration. If dental chromatic disturbance is confirmed, whitening treatment can be suggested before the restoration, aimed at an aesthetical improvement and minimizing any repercussion at a psychological level.

The younger the children the more susceptible they are to traumatic accidents, and these are a challenge for professionals, as the child's behavior has to be managed perfectly, and technical and scientific knowledge is required.

**Objective:** Presentation of a case report

**Material and methods:** Six year-old male patient, in good health with a complicated fracture had chromatic disturbance to crown 51 that occurred in November 2008. A pulpectomy was carried out, together with whitening treatment and aesthetic restoration with composite indicated for primary dentition. For four months there has been no symptomatology.

**Conclusion:** Treatment of primary teeth deserves special attention to encourage complete oral health.

## 10. DENTAL EROSION. A PREVALENT PATHOLOGY IN PEDIATRIC DENTISTRY?

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**Introduction:** Dental erosion is a socio-sanitary problem with a growing impact given its greater incidence among children and adolescents. Certain factors such as current life styles are considered very important with regard to the development of dental erosion. The degree of erosion may be different in extension and speed of progression, which makes it a true restoration challenge.

**Objective:** 1. To study the concept of dental erosion and its production mechanisms. 2. To evaluate the growing prevalence and clinical characteristics of these

lesions. 3. To analyze the therapeutic alternatives to dental erosion.

*Results and discussion:* Dental erosion is the loss of hard tissue of a tooth due to chemical processes in which bacteria are not involved. The acid responsible for the erosion is not produced by intraoral flora, but by diet, gastro-oesophageal reflux, the environment, medication and life style factors. After a preventative protocol, protection of dental surfaces should be carried out according to the age of the patient and the type of lesion.

*Conclusions:* 1. The acid responsible for dental erosion comes from intrinsic and/or extrinsic sources. 2. The treatment is based on preventative measures, restoration and, in particular, multidisciplinary care for the child or adolescent with this pathology.

*Finance:* Collaboration grant. Dental faculty UCM

## 11. WHY DOES A CHILD DEVELOP DENTAL PHOBIA?

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*Objectives:* a) To discover the prevalence of dental phobia in the child patient; and b) to study the causes leading to dental phobia in the child patient.

*Material and methods:* A revision of the literature was carried out using MEDLINE/PUBMED from the year 1998 to February 2009 of articles written in English. The keywords used were: phobia AND dental OR dental anxiety.

*Results:* 1. Specific data were not found on the prevalence of phobia of the dentist in any age group nor in any population. Various studies evaluated the prevalence of dental anxiety with results fluctuating between 5 and 20%. 2. Patients with high dental anxiety and/or those that shun dental treatment (they frequently cancel or they do not keep the appointment) have a high risk of developing phobia to the dentist. Various studies have demonstrated an association between painful dental treatment received in the past and the development of management problems regarding behavior, dental anxiety and phobia to the dentist. Other influential factors would be age, the general anxiety of the child, fear of the parents themselves and socioeconomic characteristics. The so-called *blood-injury-injection phobia or BIIP* is unique if compared with other phobias due to the characteristic vasovagal response and in addition it seems to have a strong genetic component. Studies indicate that this phobia is so frequent in childhood that it is closely related to dental phobia. Suffering certain dental pathologies such as incisor molar Hypomineralization may entail a risk factor for developing phobia to the dentist.

*Conclusions:* More studies that investigate dental phobia in the child patient, prevalence as well as the ethiopathogeny, are necessary. The objective would be to try to identify those patients that are at risk of developing dental phobia and to be able to prevent it.

*Finance:* Collaboration grant UCM.

## 12. THE TEACHING OF PEDIATRIC DENTISTRY WITH REGARD TO THE EUROPEAN HIGHER EDUCATION AREA (EHEA)

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*Introduction:* The EHEA is an educational organization that started with the Bologna declaration to harmonize the different educational systems in the European Union, and to provide an efficient form of interchange for all students, as well as a deep change regarding how teaching is carried out in European universities. It was in order to assume this competence that *virtual teaching* arose, which is a basic tool for allowing us to adapt to the system. This type of teaching has been defined as a training area offered by a university institution that operates through digital networks and among its functions are: learning planification, communication (forums and chats), resource administration and evaluation.

*Objectives:* a) To establish the competences and contents adapted to learning based on problems; and b) to create a virtual campus with regard to Pediatric Dentistry as a subject.

*Material and methods:* In order to carry out this project the I, II and III meetings of the Virtual Campus of the UCM were used, together with the information from web pages on Problem Based Learning and the creation of a virtual University. The keywords used were: virtual campus, problem based learning, EHEA and virtual University. As material we had suitable computer systems, the Internet, and programs such as Microsoft Office Publisher and WebCT.

*Discussion and Conclusions:* The main advantages of this system are the motivation of students, greater student and professor-student *communication* which is essential taking into account the need arising in the immediate future of adapting to new learning methods and to the EHEA. Therefore, adapting our teaching plan to include the Virtual Campus in Pediatric Dentistry courses is an opportunity, and it is our duty to give it consideration. All this contributes to improving the quality of university teaching and it constitutes the essence of good teaching practice in the use of the Virtual Campus.

*Financiación:* Collaboration grant Departamento de Estomatología IV of the Universidad Complutense de Madrid

## 13. STEM CELLS: THE FUTURE IN DENTISTRY?

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*Introduction:* Stem cells are defined as undifferentiated cells that are able to self-renovate and differentiate themselves into different cellular lineages during long periods of time. They will be in charge of physiological

cell changes as well as of repairing tissues that may have suffered some type of damage. These stem cells can be differentiated as embryonic and adult stem cells. The latter are able to generate cellular lineage in the tissues that they are in. Thus they can be isolated in the brain, bone marrow, peripheral blood, blood vessels, muscles, skin, liver and more recently pulp tissue. The latest studies concentrate on the investigation of stem cells extracted from primary exfoliated teeth, which have a large proliferative capacity and that are able to differentiate themselves into nerve, adipocyte and odontoblastic cells, as well as having an osteoinductive capacity. They have a greater rate of proliferation when compared to adult pulp cells.

*Objectives:* 1. To isolate the stem cells from the pulp tissue of primary teeth 2. To cultivate these cell, and to try to achieve the differentiation of different cell lineages.

*Material and methods:* The laboratory study was carried out by the Histology laboratory of the UCM, and the pulps of primary molars extracted with no signs of pulpal pathology were analyzed. Marker were used for the differentiation of stem cells of the CD 29, CD 44, CD 90 and CD 105 types.

*Results:* Of the primary teeth extracted, mesenchymal stem cells were isolated.

*Conclusions:* 1. The pulp tissue of a primary tooth is a source of stem cells that is easily accessible. Stem cells isolated in the pulp are of a mesenchymal type with similarities to those found in the umbilical cord. 3. Pediatric dentists should be aware of this fact and they should pay special attention when extracting a primary tooth so that there is as little damage as possible, and so that stem cells from the pulp can be extracted.

*Finance:* Collaboration Grant UCM

#### 14. EVALUATION OF MARGINAL FILTRATION OF TWO ADHESIVE SYSTEMS AFTER THE APPLICATION OF AN ADDITIONAL ADHESIVE RESIN.

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*Introduction:* There are currently new adhesive systems that reduce the number of steps in the classical clinical protocol. However, in order to achieve an improvement in adhesion and to diminish microfiltration, on occasions, an additional layer of adhesive resin is used.

*Objective of the study:* To observe if marginal microfiltration of two adhesives with different solvents (water, acetone) is reduced with the placement of an additional resin adhesive.

*Material and methods:* For this 28 human premolars extracted for orthodontic reasons were used. Class II cavities were made mesially and distally, and a total of 56 cavities were made and divided into 4 groups. The

materials were applied following the instructions of the manufacturer. After carrying out acid etching of the cavity, the adhesive was placed (in one half Prime & Bond NT<sup>®</sup>, followed by Adper Scotchbond<sup>®</sup> in the other half). In half of each group an adhesive resin was applied ( Heliobond 3<sup>®</sup>) and in all the groups obturation was carried out with a composite (Spectrum<sup>®</sup>). The samples were then put into distilled water for 24 hours at room temperature, and then the apexes were sealed. Two layers of varnish were applied to the tooth, and after this they were put into 0.5% methylene blue for 24 hours. The specimen were then sectioned lengthwise and the degree of gingival and occlusal microfiltration was evaluated using a lens.

*Statistical data:* For the statistical analysis of the results Student's T test was applied with a level of significance of  $p < 0.05$ .

*Partial results:* It was observed that there was less microfiltration in the groups with the adhesive resin.

*Conclusion:* With an intermediate layer of resin adhesion improves, although the number of steps in the procedure increases.

*Finance:* Research line E080-05. Univ. Murcia.

#### 15. THE EFFECT OF CONSUMING CHEWING GUM, WITH DIFFERENT CONCENTRATIONS OF XYLITOL, ON SALIVARY FLOW, PH AND CONCENTRATION OF SALIVARY SM IN CHILDREN BETWEEN THE AGES OF 6 AND 12 YEARS

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*Objective of the study:* To compare the salivary flow, pH and the concentration of salivary *Streptococcus mutans* in children aged between 6 and 12 who chewed gum sweetened with different concentrations of xylitol, and gum without xylitol.

*Materials and methods:* Clinical study of a longitudinal in vivo type lasting 28 days at the public school Nuestra Señora de la Consolación in Vila-real (Castellon, Spain) in which a comparison was made of salivary flow, pH and the concentration of salivary *Streptococcus mutans* in children aged 6 to 12 who chewed gum sweetened with different xylitol concentrations (5, 30, 67%) and gum that did not have xylitol as a sweetener in its chemical composition. The entries analyzed were compared in basal conditions with those registered at 14 and 28 days after starting the treatment.

*Results:* Once the data had been collected, this was analyzed by means of a statistical Split-plot technique. On analyzing the flow and *Streptococcus mutans* variables, statistically significant differences were observed on relating these to the different treatments and times respectively ( $p$ -value  $< 0.05$ ). Statistically significant differences were observed ( $p$ -value  $< 0.05$ ) in the analysis of the pH variable and the treatment factor, as opposed to the time factor in which there were no statistically significant differences ( $p$ -value  $< 0.05$ )

*Conclusions:* The mastication of chewing gum sweetened with xylitol produces a greater increase in salivary flow than gum without xylitol in its chemical composition, with the greatest salivary stimulation arising during the first 14 days of treatment. The recovery in pH is independent of whether the chewing gum is sweetened with or without xylitol. The greatest reduction in *Streptococcus mutans* levels is produced after mastication of gum sweetened with xylitol. However the amount of xylitol does not influence the reduction of *Streptococcus mutans* in a proportional fashion, and the greatest reduction was obtained in the first 14 days of treatment.

## 16. OPINION OF THE PROFESSIONALS IN SEVILLE ON THE DENTAL CARE PLAN FOR CHILDREN IN ANDALUCÍA

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*Introduction:* The Dental Care Plan for Children in Andalucía has meant a change in the way patients receive treatment as it involves a mixed (public-private) capitation system (payment by patient), as opposed to traditional care models that are public and private on an exclusive basis. A variety of reactions by professionals, who had to adapt quickly to the changes, ensued as a result of the different implementation and development phases.

*Objectives:* The aim of this study was to carry out an analysis of the opinions of the professionals involved in the program. The objectives of the study was to learn how the program is perceived by professionals, and to determine the degree of information received and how this has been perceived by the dentists participating in the program, and to stipulate the degree of quality of the program's administrative management.

*Material and methods:* In order to carry out this study an investigation design was adopted in which quantitative and qualitative methodology was combined, in a methodological integration strategy, using surveys and group interview methods (focus groups).

*Results:* The questionnaire was finally answered by a total of 132 professionals on training courses that were obligatory for all dentists ascribed to the program. Two focal groups of 8 professionals were formed and in each group the subjects were treated in a free and ordered fashion, and the groups were able to go into depth using the variables in the survey. The opinions in general were medium to low with regard to the program, and these data were corroborated by the discussion groups.

*Conclusions:* The main conclusion was that dentists in Seville perceived the dental care program as a necessary, useful, but badly paid program with limitations as to care and characterized by a strong lack of instruction and evaluation. It was also clear that most dentists lacked training in pediatric dentistry.

## 17. EVALUATION OF SALIVARY FLOW, pH AND STREPTOCOCCUS MUTANS RECOUNT AND LACTOBACILLUS IN SALIVA

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*Introduction:* Probiotic food has a beneficial effect that goes beyond being purely nutritional, and it is efficient for the prevention and treatment of some pediatric diseases (diarrhea, respiratory infections, allergies, etc.).

With regard to pediatric dentistry it can also play an important role, such as the reduction in salivary count of *S. mutans* and *Lactobacillus*.

*Objective:* The objective of this study was to evaluate the influence of a probiotic milk drink with a high *Lactobacillus Casei* content on salivary levels of *S. Mutans* and *Lactobacillus* in a sample of children.

*Material and methods:* The basal values of salivary flow, pH, and *S. Mutans* and *Lactobacillus* salivary count were compared with the values obtained after three weeks of ingesting milk fermented with *L. Casei*, in a sample of 79 school children aged between 5 and 11 years. The parents filled in a questionnaire on their children's food, oral hygiene habits and the taking of medication.

*Statistical data:* All the data obtained after the measurement of the salivary parameters before and after the intervention were analyzed using the statistical test ANOVA, through the Stratgraphics® 5.0 plus system.

*Results:* The results showed a reduction in the recount of *S. mutans* and *Lactobacillus* after the ingestion of milk fermented with *L. Casei*.

*Conclusions:* Probiotic milk with *L. Casei* appears to have a beneficial effect on the dental health of school age children.

## 18. DIAGNOSIS METHODS FOR CARIES IN EPIDEMIOLOGICAL STUDIES

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*Objectives of the study:* To analyze the methods used for caries diagnosis and classification in the epidemiological studies carried out in Spain over recent years.

*Material y methods applied in the investigation:* A systematic revision of the literature was carried out using journal indexes, doctoral theses and electronic databases (MEDLINE).

*Partial results:* After a descriptive analysis of the data, six methods for caries diagnosis and classification were identified, most of these published by the WHO.

*Conclusions:* Currently the method that is most used was defined by the WHO in 1997, as it had the advantage of limiting to the maximum the appearance of false positives. However, it may underestimate the caries situation of the population, and for this reason some

authors have proposed certain modifications in order to increase sensitivity and to achieve results that are more realistic. In any event, while these modifications have not been agreed on at an international level, and as the method of diagnosis of choice in an epidemiological study should be that which permits the comparison with the majority of results currently available, the method published by the WHO in 1997 appears to be the most adequate.

## 19. EVOLUTION OF ORAL BACTERIAL FLORA IN PEDIATRIC DENTISTRY OVER THE LAST 10 YEARS: REVISION OF THE LITERATURE

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*Objectives:* To ascertain if in the last ten years there have been changes in the oral microflora of the child population.

*Material and methods:* Literature revision of the scientific publications that have appeared over the last 10 years that refer to this subject. For this, a Library and archive search was carried out (Medline, Pubmed, Cochrane Library, C17...) of the Dental Faculty of the European University of Madrid and the Universidad Complutense in Madrid.

*Results:* The variety of the different types of microorganisms that live in the oral cavity of a child is very closely related to how it develops. Some of these types are closely related to the caries factor. Others are related to other factors: food, hygiene habits and socio-economic levels.

*Discussion and Conclusions:* The microorganisms in the oral cavity colonize at very early ages. The first colonizing strain continues to be *Streptococcus Mutans*.

## 20. RISK FACTORS FOR EARLY CHILDHOOD CARIES. SOCIO-EPIDEMIOLOGICAL SURVEY

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*Introduction:* Early childhood caries (ECC) is the presence of one or more calcified substance losses in any primary tooth of a child under the age of 6.

Any sign of caries on a smooth surface of a three year old's tooth is indicative of severe early childhood caries. The increasing number of cases observed in our field led us to carry out a socio-epidemiological survey on the social and dietary factors related to this entity.

*Material and methods:* During the 2008-2009 period, 100 surveys were carried out of the parents of patients under the age of 6 who attended the San Joan de Déu hospital with ECC. The factors studied were: origin, socio-economic level, previous prevention, dietary habits and caries index.

*Results:* Average age 3.4 years. 62.8% immigrants. 57.7% attended for the first time because the parents

noticed a dental condition, 13.4% of the conditions were detected by a pediatrician and 8.2% by a dentist. In 21% the reason for the visit was pain. 59.7% did not apply previous preventative measures. Among the dietary habits considered erroneous there was nocturnal maternal feeding 67.01%, and nocturnal bottle 54.6%. Other habits were sweetened juices and sweets. In more than 69% there was more than one factor implied. The caries index was 8.49.

*Conclusions:* This survey shows the high incidence rate among the immigrant population of a low socio-economic level. The low influence of dentists in prevention and early detection of ECC was established. The erroneous dietary habits that were found to be most relevant were prolonged maternal feeding and nocturnal bottles. In a larger percentage there were various factors involved. The rate of caries was very high. We believe that pediatricians and the pediatric dentists play a transcendental role in providing dietary guidelines and in the early diagnosis of caries.

## 21. IN VITRO ASSESSMENT OF TWO FOSSAE AND FISSURE SEALANTS USING DIFFERENT TYPES OF ETCHING AND APPLICATION TECHNIQUES

**Díaz E, Guinot F, Mayoral JR, Bellet LJ**  
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*Objective:* To determine the influence of tooth preparation and the type of sealant used with regard to penetration and adhesion capacity in dental fissures. To determine also whether carrying out an ameloplasty improves the penetrability of the material, and reduces microfiltration. And lastly to determine if the type of etching improves adhesion.

*Material and methods:* 96 extracted premolars were divided into 4 groups according to placement techniques and adhesion systems. Each group was then subdivided in two: Group A *Dentstply*® and Group B *3M*®. Group 1 (A and B): etching technique and washing without ameloplasty. Group 3 (A and B): self-etching technique with ameloplasty. Group 4 (A and B): self-etching without ameloplasty. Prophylaxis with abrasive paste was earlier carried out. The different sealants were then placed, the teeth were thermocycled in water (1,200 cycles between 50 and 550 C) and they were stained with 1% methylene blue for 24 hours. *Isomet 1000 Buehler* was used to section the teeth in a bucolingual direction. Each sample was then photographed with an electronic microscope. Six examiners evaluated the microfiltration and penetration capacity of the materials according to Blackwood, Overbo and Raadal criteria. Statistical data: a four factor Anova test was used with two analysis variables.

*Partial results:* Regarding microfiltration, groups 1 and 2 had lower values with regard to groups 3 and 4. It was discovered that groups 1 and 3 had higher penetration values.

*Conclusions:* Carrying out an ameloplasty improves the penetrability of the material. Regarding microfiltration, no differences were found between the materials used.

## 22. RETENTION AND MARGINAL SEAL OF THE COMPOMER (DYRACT-EXTRA®) IN CLASS I AND II RESTORATIONS OF PRIMARY MOLARS. PRELIMINARY COMPARATIVE STUDY

**González DC, Broch S, Guinot F, Bellet LJ**  
*Universitat Internacional de Catalunya. Barcelona*

*Objectives:* To assess if there are differences in the marginal seal and retention of the (Dyract-eXtra®) compomer in Class I restorations compared to Class II restorations of primary molars.

*Material and methods:* For 5 months, a clinical test was carried out of a comparative type that consisted of three visits, in which the clinical behavior of the obturation material Dyract eXtra® (compomer) was assessed, based on studying marginal seal and retention of the restorations. The sample consisted of 56 carious lesions in primary molars (19 Class I and 37 Class II).

*Statistical data:* the results were obtained from the clinical examination, and the existence of a marginal seal as well as the restoration retention was assessed. The results were analyzed using the statistical test ANOVA through the Stratgraphics® Plus 5.0 Version, and graphs and diagrams were obtained. A statistically significant reference of P value  $\leq 0.05$  was used.

*Partial results:* Similar values were found regarding retention and marginal seal for Class I and Class II for the compomer obturations (Dyract-eXtra®).

*Conclusions:* There were no differences between marginal seal and obturation retention of the compomer (Dyract- eXtra®) in Class I and II of the primary molars.

## 23. THE SUITABLE USE AND ACCEPTANCE OF THE RAINBOW IN PEDIATRIC DENTISTRY

**Huerta LM, Boj JR, Espaza E, Hahan C, Velasco M**  
*Clínica Odontopediátrica. Barcelona*

*Introduction:* Just as color looks agreeable and gives a sense of cheeriness, in pediatric dentistry the use of color compomers in the restoration of primary back teeth, has become a fun and motivating method for children to visit to a pediatric dentist. Their cooperation and participation is very important and it is very motivating when the child participates. This is the case of color compomers, as when they are used we can make the child feel he is being taken into consideration. On choosing the color of the restoration children more readily accept the treatment, and this makes visiting the dentist more fun and motivating, and this to a certain extent, influences oral hygiene care. The pediatric dentist tries to gain the confidence of the child and to appear agreeable, so that the treatment time is pleasant and, more especially, that the child has good memories and comes back with ease. When treatment in a dental chair is made agreeable, and when children are made to feel important by giving their opinion and choosing the color of the material with which their teeth are restored, they feel great pleasure. And the happiness we see in

their faces when they see the color in their mouths is one of the best rewards for pediatric dentists.

*Objective:* To evaluate the degree of acceptance in children, and those who accompany them, of restorations with color compomers and their suitability in pediatric dentistry.

*Material and methods:* Color compomers used in the same way as other compomers, surveys and colorimeter of the material chosen for the degree of acceptance in children visiting a pediatric dentist and those accompanying them.

*Results:* They are very motivating and increasingly accepted. They help in the use of innovative materials and in satisfying patients.

*Conclusions:* A large number of children and those accompanying them, accept color restorations according to the investigation. These are therefore recommended for primary teeth obturations, and because the child will be more motivated to look after the teeth that have been treated and he will, as a result, look after his oral hygiene.

## 24. COMPARATIVE CLINICAL STUDY ON TWO SALIVA TESTS: SALIVA-CHECK MUTANS GC® AND CRT BACTERIA IV

**Martín R, Mateos MV, Álvarez Muro T, Sanjurjo S, García Yarnoz C**  
*Universidad Complutense de Madrid*

*Introduction:* One of the most important tests for assessing the caries index in the child patient, is to count the units forming *Streptococcus mutans* and *Lactobacillus* colonies in the child's saliva.

*Objectives:* To assess the number of units forming the *Streptococcus mutans* and *Lactobacillus* colonies in the child population, by means of the use in each patient of both salivary tests. Comparison of both tests.

*Material and methods:* A sample of 30 children aged between 6-14 who attended the university clinic of the Dental Faculty of the Universidad Complutense de Madrid (UCM) for dental treatment. A count was made of the colony forming units of each patient by means of the Saliva-Check Mutans GC® test and CRT Bacteria Ivoclar-Vivadent® test.

*Results and conclusions:* The preliminary results in this study appear to indicate advantages with regard to the methodology proposed by GC®. While the Ivoclar-Vivadent® method has the advantage of enabling the *Streptococcus mutans* and *Lactobacillus* recount in the same procedure.

## 25. PARTIAL REMOVAL OF CARIOUS TISSUE. TREATMENT SUCCESS USING A CONVENTIONAL ADHESIVE SYSTEM VS. THE APPLICATION OF CALCIUM HYDROXIDE

**Oliver S, Barbero V, Guinot F, Bellet LJ**  
*Universitat Internacional de Catalunya. Barcelona*



**Introduction:** Partial removal of carious tissue (PRCT) is a treatment applied to asymptomatic primary teeth with deep caries because total removal of the affected tissue would mean a high risk of pulp exposure.

**Objective:** To compare clinically as well as radiographically the effect of a conventional adhesive system vs. calcium hydroxide, as a material for protecting the dentin-pulp complex in primary molars treated with partial caries removal.

**Material and methods:** 20 primary molars with deep caries, but with no symptoms of irreversible pulpitis, received PRCT. The teeth were divided into two groups in a randomized fashion, according to the pulp protection material to be applied: 1) calcium hydroxide group; 2) conventional adhesive systems. These teeth were evaluated clinically and radiologically over 3 months.

**Statistical data:** The results were taken from the clinical and radiological examination based on: the continuity of the restoration margin (1), presence or absence of spontaneous pain (2), absence of fistula (3), pathological mobility (4), radiolucency in furcation and periapical areas (5) and internal or external pathological resorption (6). All these characteristics were analyzed using the ANOVA statistical test through the Stratgraphics® 5.0 plus system, and graphs and diagrams were obtained.

**Results:** Equal results were obtained regarding the radiological as well as clinical success of both the materials applied as treatment for the partial removal of caries.

**Conclusions:** The protection of the dentin-pulp complex with a conventional adhesive system has clinical and radiological results that are similar to calcium hydroxide applied in teeth with PRCT.

## **26. THE EFFICIENCY OF ANESTHESIA CONSISTING OF A EUTECTIC MIXTURE OF LIDOCAINE AND PRILOCAINE AT 4% (TOPICADENT) VERSUS 20% BENZOCAINE GEL (HURRICAIN®) IN PEDIATRIC DENTISTRY**

**Leyda A, Llana C**  
*Clínica Privada. Valencia*

**Objectives of the study:** To evaluate the action potential of the eutectic mixture of lidocaine and prilocaine (Topicadent) as a topical anesthetic (TA) on the oral mucosa and to compare this with 20% benzocaine gel (Hurricane®).

**Materials and methods:** A block anesthetic technique was carried out of the lower alveolar and buccal nerves in 20 children between the ages of 5 and 12 years. Topicadent was used in 10 patients and Hurricane® was used in another 10 as a topical anesthetic. The physical and physiological reaction of each patient was registered together with the subjective perception of pain before the jab.

**Statistical data:** A descriptive analysis of the sample was carried out and the variables were compared with the type of anesthesia used and the sex of the patient by means of the  $\chi^2$  test and the Mann-Whitney U-test.

**Results:** The physical reactions to the jab were similar and located in the comfort stage for both TAs, with the girls showing a greater reaction. When TA was compared with the subjective perception of pain, the results were similar in the comfort range of both sexes. When comparing the physiological reactions with sex and anesthesia, strongly differing modifications were not observed.

**Conclusions:** The eutectic mixture of lidocaine and 4% prilocaine (Topicadent) showed the same efficiency as 20% benzocaine (Hurricane®) for reducing the pain of the needle in all the calculations carried out. The girls expressed more pain than the boys to the jab. *Private financial source.*

## **27. INFLUENCE OF AUDIOVISUAL MEDIA IN THE BEHAVIOR OF PEDIATRIC DENTISTRY PATIENTS**

**Xalabardé A, Ruiz de Castañeda E, Álvarez T, Gatón P**  
*Sociedad Catalana de Odontostomatología. Barcelona*

The audiovisual media occupy an important position in current society. Children today live side by side, in one way or another, with technology from their earliest years. Videogames and computers especially designed for children, that are as educational as they are ludic, digital cameras, MP3 and MP4 reproducers, etc. are media that have been incorporated into the education of the population and that children largely recognize as part of their daily routine.

Following the written and signed consent of parents and tutors it is common, and in some cases obligatory, to record photographically or on video the patient's initial pre-treatment situation. As a result of this protocolized practice of making records with purely clinical ends, we have questioned how this affects the behavior of patients in the dental office and during dental treatment. We have observed a positive modification in attitudes to dental treatment in a wide majority of patients. We will present various situations that demonstrate this.

## **28. BISPHOSPHONATES AND THEIR IMPLICATION IN PEDIATRIC DENTISTRY**

**De la Fuente D, Llidó B, Tobar C, Martínez E, Muñoz M**  
*Dental faculty UCM. Madrid*

**Introduction:** There are diseases that bring with them a general organic pathology as well as the pathology affecting teeth and jawbones. This relationship means that there is concern over the therapies that are carried out orally, and the implications at a general level, that could also arise from general medication used in these patients.

**Objectives:** 1. To study the effect of bisphosphonates and their main indication as a therapy for systemic diseases. 2. To evaluate the oral representation of these sys-

temic diseases in child patients. 3. To describe the oral implications of the therapy by means of bisphosphonates and the possible consequences of our action here.

*Discussion:* Bisphosphonates are used to treat various bone pathologies. One of these is Osteogenesis Imperfecta, and the main oral manifestation is Dentinogenesis Imperfecta. Of the bisphosphonates currently available for OI, Alendronate has been observed to be the most effective. However, its systemic use for treating OI may lead to the appearance of maxillo-mandibular osteoradionecrosis in patients who have undergone oral surgery treatment.

*Conclusions:* 1. The effect of bisphosphonates on bone make these an effective therapy for the treatment of various pathologies. 2. Some bisphosphonates such as Alendronate appear to have positive effects in general, although some precaution should be taken regarding side effects after oral surgery treatment in child patients.

## 29. PARESTHESIA FOLLOWING THE USE OF LOCAL ANESTHETIC. TWO CASE REPORTS.

**Alcaina A, Cortés O, Germán C, Castejón I, García C**

*Hospital Morales Meseguer. Universidad de Murcia. Murcia*

*Introduction:* Local anesthesia represents the safest and most effective drug for pain control in Dentistry. Among the anesthetics most used is the amide group, such as mepivacaine and articaine. There are studies that confirm the appearance of paresthesia after the use of articaine, although these have yet to be based on scientific evidence.

*Casos clínicos:*

*Case 1:* Seventeen year-old adolescent who underwent endodontic treatment for tooth 36 with a trunk anesthetic technique with articaine. He developed paresthesia of the skin, cheek and tongue.

*Case 2:* Sixteen year-old adolescent who underwent conservative treatment consisting of obturation of tooth 47. Trunk anesthesia was used with two carpules of 3% mepivacaine without vasoconstrictor. Paresthesia in the area of the tongue arose.

In both cases the paresthesia process remitted a few months later following vitamin B treatment.

*Discussion and conclusion:* Paresthesia does not just depend on the type of anesthetic used. It is important that other factors are taken into account, such as the concentration of the anesthesia or the technique used. Nevertheless, larger sample studies are needed so that these complications can be assessed.

## 30. BIPHOSPHONATES IN PEDIATRIC DENTISTRY

**Velasco M, Hahn C, Huerta M, Cahuana A, Boj JR**  
*Departament of Pediatric Dentistry, Barcelona University*

*Introduction:* Recent studies have described osteonecrosis (ON) of the jaws as a complication as a

result of bisphosphonate therapy in adults undergoing extractions. Pediatric diseases such as juvenile myelomonocytic leukemia, polyostotic fibrous dysplasia or osteogenesis imperfecta may include the use of bisphosphonates in their treatment.

*Objectives:* To determine if there are collateral effects in bisphosphonate therapy that affect the oral cavity of pediatric patients, and the precautions that should be taken. To assess the presence of eruption disturbances and ON after extractions or invasive oral treatment.

*Material and methods:* A revision of the literature over the last 10 years of text books and journals available in the library of the Universitat de Barcelona, as well as electronically through scientific search engines.

*Results:* ON cases among children and adolescents using bisphosphonates were not found. Eruption delays were observed in patients with osteogenesis imperfecta treated with bisphosphonates.

*Conclusions:* Despite being a very current and controversial subject in adults, we should stress that there is still very little literature on the subject based on children and adolescents. More prospective studies are needed so that more reliable long term results are available, and so that a safe and adequate protocol can be designed for these patients.

## 31. HARMFUL ORAL HABITS: MANAGEMENT IN PEDIATRIC DENTISTRY

**López V, Ruiz M, Bulbena A, Cerdán F**

*Hospital San Rafael. Madrid*

*Introduction:* There are numerous oral habits such as the use of pacifiers, thumb-sucking, swallowing during childhood, etc that if maintained over time, may produce deformities in the *Stomatognathic apparatus* and a large number of malocclusions.

As a consequence, these habits have negative effects such as disturbance in the speech and the physical and emotional development of the child.

*Objectives:* The aim of this work is to describe the harmful habits that are most common in the child population, their management by the pediatric dentists and the need for parent collaboration.

*Material and methods:* A search of the literature in Pubmed and Medline and various clinical cases which were resolved by the Pediatric Department of the Hospital San Rafael in Madrid.

*Conclusion:* Early intervention by the pediatric dentist is fundamental for diagnosing these disturbances and for stopping these habits becoming more serious or appearing in the permanent dentition. The collaboration of parents is indispensable for the results to be satisfactory.

## 32. CORRELATION BETWEEN DENTAL AGE AND CHRONOLOGICAL AGE OF CHILDREN IN CHILE

**Pérez A, Barboza P, Aguirre M, Bravo L, Fierro-Monti C**

*Universidad de Concepción. Chile*

*Objetives of the work:* to estimate the correlation between dental age and chronological age of a population of children aged between 2 and 14 in Chile.

*Methodology:* Correlation study: Sample: 377 children aged between 2 and 14 who were seen by the Pediatric Dentistry clinic in the Dental Faculty of the Universidad de Concepcion, Chile. Dental age was calculated using the Demirjian Method.

*Statistical date:* The Bland-Altman method was applied in order to calculate the interclass global correlation coefficient.

*Results:* The dental age observed for the different chronological ages varied between 3.0 and 14.4 years. The chronological age varied between 2.8 and 14.8. The global interclass correlation coefficient as a concordance measurement between the dental and chronological dental age was of 0.98 (IC 0.978%: 0.97-0.986) For the males the ICC was 0.98 (IC 95%: 0.976-0.987). For females this was 0.98 (IC 95%: 0.976-0.986).

*Conclusions:* The chronological and dental age ranges were similar and the degree of concordance between chronological and dental age was nearly perfect. Moreover, the degree of concordance between the dental and chronological ages in both sexes was good.

*Financial source:* This report is part of investigation Project N° 207104005-10 of the Dirección de Investigación of the Universidad de Concepción, Chile.

### 33. RELATIONSHIP BETWEEN MALOCCLUSION AND THE LOWER LIMBS

**Barra MJ, Serna M, Machuca MC, Mendoza A**

*Departamento de Estomatología. Área de Odontopediatría. Universidad de Sevilla*

*Introduction:* There are many references in the dental literature to an existent relationship between the position of the neck and head, and the position of the mandible. The first reference dates back to 1926 when Schwartz revealed the relationship between malocclusion and neck position. However, there are not many studies that relate the position of the neck and the lower limbs with malocclusion.

*Material and methods:* We considered defining, by means of a revision of the literature, the occlusal disturbances that are related to pathological postures or disturbances in the lower limbs. For this the keywords for a search in Pubmed, national and international journals were: occlusion, podiatry disturbances, malocclusion and lower limb disturbance, etc.

*Results:* There is a relationship between C.III malocclusion and a more posterior position of the body. And of the C.II malocclusions, there is a more anterior position of the body. After achieving a more correct mandibular position, getting the body to adapt is not immediate.

If the arch of the feet is varied, a perfect balance could be achieved between masseter and temporalis muscles as these variations may lead to muscular mechanisms that could have repercussion in muscle masses that are further away.

*Conclusions:* Given the lack of information on the subject, and as statistical data was not found in the literature, we cannot confirm that there is scientific evidence to support conclusive theories. Therefore, it is for this reason that this subject is now one of the lines of investigation we are following.

### 34. CYSTS IN PEDIATRIC DENTISTRY: TREATMENT REVISION

**Velásquez H, González Y, Cahuama A**

*Universitat de Barcelona. Hospital Sant Joan de Déu. Barcelona*

*Introduction:* Maxillary cysts in pediatric dentistry have a variable clinical presentation and they are frequently asymptomatic. They may be diagnosed as a result of a routine radiography. Given their varied nature and size, various treatment options are possible.

*Objectives:* To determine the type of maxillary cysts and the treatment carried out in a pediatric population.

*Material and methods:* Retrospective study of maxillary cyst cases seen by the department of Pediatric Dentistry in the Sant Joan de Déu Hospital, Barcelona, between the period 1998-2009.

*Results:* The number of patients studied was 11, with an age range between 8 and 17. 12 cysts were observed, and one patient had two types of cysts at different times. The treatments generally carried out were: excision, curettage and decompression before excision.

The cases observed were: *Queratocyst:* 3 cases, 2 were treated with simple excision and 1 with prolonged decompression before excision. The three cases were between 2 and 4 years later, and they had some type of relapse. *Dentigerous cyst:* 3 cases, in one prolonged decompression before excision was carried out, and favorable bone healing was observed. *Inflammatory dentigerous cyst:* 5 cases, all associated with pulp pathology in the primary dentition, most due to a second molar. The treatment consisted in the extraction of teeth with pulp involvement and curettage of the area affected at the same time. In all the cases a favorable response was observed with adequate bone healing and eruption of the permanent tooth.

*Conclusions:* In these cases of ours we observed various treatment techniques, and decompression before surgery to reduce the larger cysts stood out as a decisive technique for achieving conservative treatment. We confirm that keratocysts have a high recurrence rate and we also observed favorable outcomes of cysts associated with an inflammatory response.

### 35. STUDY OF FACIAL DISTURBANCES THROUGH AN ORIGINAL PHOTOGRAPHIC METHOD AFTER RAPID MAXILLARY EXPANSION

**Sousa-Santos P, Moreira J, Vale T**

*CICS-Centro de Investigação em Ciências de Saude – Instituto Superior de Ciências da Saúde-Norte. Porto. Portugal*

*Introduction:* Rapid maxillary expansion (RME) cannot be considered a simple procedure, once taking place in an individual's midface. There is an intense activity of bone remodeling. Photography provides an important visual reference for monitoring growth and development disturbances. Therefore standardizing medical photographs is important as it should be carried out at the same distance and in the same position.<sup>3</sup>

*Objective:* To evaluate the disturbances in the face, to the mid and lower face, after rapid expansion of the maxilla.

*Material and methods:* The sample was made up of 63 children between the ages of 7 years and 6 months and 16 years and 5 months. Of these 21 had undergone expansion (EG) and 42 children made up the control group (CG). The photographs were carried with the following times T1 – Start of treatment; T2 – End of RME, and T3 – End of treatment. The photographic distances used were facial height (distance between GL-Men), nasal width (distance between the most prominent part of the nostrils), lower facial height (distance between the subnasal and chin point) and inter-labial height (distance between the average point of the upper border and midpoint of the lower border).

*Results:* The distance between GL-Men, Sn-Men and inter-labial distance did not show statistically different disturbances in T3 for either groups. In CG the interocular distance did not show any significant differences, but in the EG T3 had an increase of 0.6 millimeters. For the internostril distance of the nose an increase of 0.6 was verified for CG and 1.2 millimeters for EG in T3.

*Conclusions:* All these changes are not clinically perceptible. The photographic method is hardly efficient for assessing changes in soft tissue between the nostrils, but it can be used for confirming the aperture of the palatine suture.

### 36. MULTIDISCIPLINARY MANAGEMENT OF PATIENTS WITH A CLEFT LIP AND PALATE

**Campagnoli A, Calvo A, Barros J, Pérez F**  
*Universidad Europea de Madrid*

*Objectives:* To report on the need for a multidisciplinary team for correcting the anatomic and functional disturbances, and for there to be as few sequelae as possible in the adult lives of these patients.

*Material and methods:* The investigation entailed a review of the scientific articles published in the literature on cleft lips and palates, and the SECPRE and AFILAPA databases were used. The archives of the Medical faculty of the UCM and the Dental Faculty of the UCM were also consulted.

*Results:* The cleft lip and palate is a congenital malformation affecting the mid-third of the face. It produces a discontinuity of the upper lip, nose and palate, and it may be uni- or bilateral.

The cleft lip, with or without a cleft palate, is more common in males than in females, and the average incidence varies notably depending on different populations studies.

Most cases have a multifactorial etiology that implies the interaction of various factors that may be: environmental, nutritional, hereditary or genetic. The functional repercussions are considerable and numerous, as functions as important as feeding oneself, breathing, speaking, hearing, etc. are affected.

*Conclusions:* The congenital deformities of the cleft lip and palate continue to be one of the main craniofacial malformations with a multifactorial origin. The correction of the deformity should be carried out integrally, and multidisciplinary teams are required for caring for these patients during their early years.

### 37. NON-HEREDITARY STRUCTURAL DISTURBANCES IN ENAMEL: ITS CURRENT HIGH INCIDENCE RATE

**Mora C, Casanova C, Iglesias B, Cerdán F**  
*Hospital San Rafael. Madrid*

*Objectives of the work:* Dental lesions with hypoplasia and hypomineralization can be observed frequently, not only in the permanent dentition but also in the primary dentition. The objective of our work is to widen the study of the etiology of these non-hereditary structural defects in the different dental development groups.

*Material and methods:* A specific health questionnaire was given to those new patients who had these lesions, and who were attended by the Pediatric Dentistry department of the San Rafael hospital from September 2008 to date. The age range included in the study was between 3 and 12 years.

*Statistical data:* In our study we found a connection of 45% of these lesions with bronchiolitis, 34.5% to the consumption of antibiotics in the first four years of life, and a percentage of nearly 20% associated with Asthma, high fever and/or otitis. Moreover we found 55% of mothers took iron supplements during their pregnancy, 34.5% vitamin complexes, 10% took antibiotics and pain killers, and 7% had Arterial Hypertension and Pregnancy Diabetes.

*Partial results:* We observed in most of the patients whose permanent dentition was studied, a coincidence between the structural lesions of the enamel and the presence of pathological breathing such as asthma, bronchiolitis or pneumonia during the first years of life, coinciding with the stages of formation of the different dental groups. To a lesser degree we saw these anomalies associated with the ingestion of medication, otitis, high fever...Disturbance in the primary dentition is due more to the mother taking medication during the pregnancy.

*Conclusion with the more important data of the investigation:* The ingestion of medication during pregnancy and in the early years is strongly associated with the appearance of hypoplasia and hypomineralization in the different dentition periods.

### **38. FEAR OF THE DENTIST? DESENSIBILIZATION OF THE PEDIATRIC DENTIST IN THE SAN RAFAEL HOSPITAL. AN OPPORTUNITY FOR CHANGE**

**Zapata E, Serna C, Ruiz C**  
*Hospital San Rafael. Madrid*

Fear is one of the emotions that the pediatric patient may feel with certain frequency in the dental consultation room. The Pediatric Dentist is a suitable professional for overcoming this by means of the proper management and motivation of the child.

*Objectives of the work:* The objectives of our work is to create a management protocol for those children suffering fear and anxiety who have been referred to the Pediatric Dentistry Department in the San Rafael Hospital since September 2008 to date.

*Material and methods:* In order to carry out our work we gave parents a questionnaire that was aimed at discovering the etiology behind the rejection of the dentist. We also followed the behavior development of each child by means of video recordings, and the behavior management techniques that we applied. Lastly, we carried out a search of the literature on the subject in Pubmed and Medline.

*Results:* It was observed that the patients who saw dentists who were not specialized in children, had a greater rejection of dental treatment than those who went directly to Pediatric Dentistry.

*Conclusion:* The protocol implemented in the San Rafael Hospital may be of great help to the Pediatric Dentist who has to treat children under these circumstances.

### **39. SELF-INFLICTED INJURIES IN THE PEDIATRIC DENTISTRY PATIENT. CASE REPORT AND A REVISION OF THE LITERATURE**

**Gómez Santos L, Sanmartí G, Gay-Escoda C**  
*Posgrado de Cirugía Bucal de la Universidad de Barcelona. Barcelona*

*Introduction:* Oral ulcers manifest with a frequency of 20% in the general population. In children the most common etiology tends to be trauma-related.

The case is described of a nine year old patient, with no toxic habits, with an allergy to oatmeal cream and dust mites. Her personal medical history included chicken pox and infectious mononucleosis, and she had undergone an adenoidectomy. The patient attended the Department of Oral Surgery of the University of Barcelona in order to evaluate the appearance of large mucosal lesions all over the oral cavity, with a single presentation in each episode over the previous six months. In the first episode, in May 2008, she had an ulcer on the right side of the tongue which was painful on mastication. It had been treated with Amoxicillin/calvulanic acid 500/125, 1 sachet/8H

for 7 days as prescribed by her pediatrician, and the lesion disappeared. In September, a lesion of a larger size appeared on the tip of her tongue which disappeared after 8 days, and she attended our department with a new lesion in the mucosa on the back of her tongue, on the right side, and complaining of continuous acute pain and a slight fever. The local application of 0.025% fluocinolone acetonide in orabase was prescribed 3 times a day. After 15 days the initial lesion on the lower lip had disappeared but there was a new lesion on the tip of her tongue with a diameter of 0.5 cm. The same treatment was recommended for 15 days. The possibility of the lesions being self-inflicted was evaluated.

There are many reports in the literature of self-inflicted oral lesions that are associated with psychosomatic disturbances. These are defined as disturbances with evidence of organic disturbance that do not respond to known physiological mechanisms, which are presumably related to a psycho-affective disturbance. It is important to stress the increase in incidence of these types of lesions associated to psychosomatic disturbances so that pediatric dentists are aware of them.

### **40. INCONTINENTIA PIGMENTI. REVISION OF 5 CASES**

**Cardozo NC, González Y, Cahuana A**  
*Universitat de Barcelona. Barcelona*

*Introduction:* Incontinentia Pigmenti (IP) is a dermatogenesis that affects the skin, teeth, eyes, nails and the central nervous system. There is a dominant hereditary pattern linked to the X chromosome, and it is lethal for the male, but there is also genetical heterogeneity.

*Objective:* To determine the oral manifestations of Incontinentia Pigmenti in a pediatric population.

*Material and methods:* A revision of the clinical cases in the database over the last 20 years in the Department of Pediatric Dentistry of the Hospital Sant Joan de Déu, Barcelona. Age at diagnosis, oral manifestations and dental treatment carried out were evaluated.

*Results:* 5 cases of IP were described, all in the female sex and aged between 3 and 15 years. The diagnosis of IP was made in the first months after the birth. 100% of the cases presented agenesis, 4/5 in the primary dentition and 5/5 in the permanent dentition. A high percentage of cases had disturbances in the form of diastemas. 2/5 of cases showed eruption delays. A high arched palate was observed in 3 out of 5 cases. The dental treatment varied from aesthetic reconstruction to removable prostheses in one case in order to improve aesthetics and function in a case of severe agenesis.

*Conclusions:* IP is a genetic disease with a varied oral presentation and it requires dental management at an early age, especially to improve aesthetics and for tooth eruption to be controlled.

#### 41. ECTODERMAL DYSPLASIA. CURRENT TREATMENT ALTERNATIVES AND POST-TREATMENT SATISFACTION.

**Fernández MR, Cahuana A, González Y**  
*Hospital San Joan de Dèu. Universitat de Barcelona*

*Introduction:* Ectodermal dysplasia (ED) belongs to a heterogeneous group of syndromes characterized by structure anomalies derived from the embryonic ectoderm. Among the oral manifestations that can be observed there are: Anomalies in the form of number of teeth, alveolar hypodevelopment and xerostomia. Prosthetic rehabilitation in various stages is necessary given its nature.

*Objectives:* To evaluate: The degree of involvement at a dentoalveolar level, treatment carried out, and difficulties when carrying out rehabilitation. To evaluate satisfaction levels after prosthetic rehabilitation.

*Material and methods:* Retrospective case revision of the last 14 year of patients with ED seen by the Department of Pediatric Dentistry in the Sant Joan de Déu Hospital in Barcelona, in which an assessment was made of: Oral Disturbance (OD), Dermatologic Disturbance (DD), Facial features (FF), Dental Treatment Performed (DTP) and satisfaction by means of a survey.

*Results:* 9 cases were revised of patients aged between 18 months and 11 years: Two (2) were treated with removable prostheses. Two (2) were treated with prosthetic rehabilitation and implants, and five (5) were being monitored until they were old enough to receive prosthetic treatment. All the rehabilitated patients were satisfied with the dental treatment that had, up until then, been carried out.

*Conclusions:* ED represents a challenge in dental therapy. The need for constant treatment for life means that early aesthetical and functional rehabilitation is necessary.

#### 42. DENTINOGENESIS IMPERFECTA. A CASE REPORT

**Villalón G, Mendoza A, Biedma M, Huertas MD, Ribas D**  
*Pediatric Dentistry Master. Universidad de Sevilla*

*Introduction:* Dentinogenesis imperfecta, also called Hereditary Opalescent Dentin, is a genetic disorder affecting tooth development, characterized by the presence of opalescent dentin. It is abnormally formed, having a very low mineral content, an obliterated pulp canal, and normal enamel. The color disturbance goes from blue-gray to yellow-brown. It has been classified as type I Dentinogenesis (related to osteogenesis imperfecta), DI type II (not related to OI) and DI type III (Brandywine).

Our objective was to determine the type of Dentinogenesis, family tendency and clinical characteristics of the patient, in order to permit early diagnosis and the elaboration of a suitable treatment plan.

*Material and methods:* The clinical case is presented of a 4 year old patient who attended the Pediatric Dentistry masters degree, referred by various clinics as a result of dental hypersensitivity, discomfort during mastication and considerable attrition. After a clinical and radiological examination, considerable destruction of the dental crowns was observed, together with color disturbance, loss of vertical dimension, pulp obliteration, considerable cervical constriction and short roots.

*Results:* Based on a revision of the literature, clinical and radiographic analyses and family background, a diagnosis of Type II Dentinogenesis imperfecta was made, of a dominant autosomal nature, with no sex predilection. The treatment given included restoration with ion chromium nickel crowns and compound materials, with the necessary extractions, followed by the placement of space maintainers.

*Conclusions:* Carrying out an early diagnosis is extremely important so that suitable treatment is started as soon as possible.

#### 43. NOONAN SYNDROME. CASE REPORT

**Matencio A, Lorente AI, Sáez S, Guinot F, Bellet LJ**  
*Universitat Internacional de Catalunya. Barcelona*

Brief description of antecedents: Noonan syndrome was first defined as a unique entity in 1963. It was the pediatrician Jacqueline Noonan and the heart specialist Ehmke who described a group of nine patients with pulmonary valve stenosis, who were short, with slight mental retardation, hypertelorism and uncommon facies. In 50% of cases it is a dominant autosomal disorder due to a mutation of the PTPN11 gene in the 12q21.2 locus. The estimated incidence is 1 out of every 1000 to 1 out of every 2500 live births. It has a variable and versatile phenotype that reduces with age making diagnosis difficult.

Type of treatment carried out: Nine year old patient of the male sex that attends the University dental clinic of the Universitat Internacional de Catalunya with a diagnosis of Noonan syndrome. During his first visit, a clinical and radiological examination was carried out of the patient, an interconsultation was carried out with the pediatrician, and the child was adapted to the consultation. The treatment carried out later was done with antibiotic prophylaxis as the patient needed a cardiac catheter. On the second visit, he was taught correct oral hygiene and prophylaxis techniques. On the third visit impressions were taken so that a lingual arch could be placed to maintain the bilateral space. On the fourth visit the lingual arch was cemented and tooth 8.4 was extracted. On the following consultation 7.4 was extracted. During the subsequent visits obturation was carried out of teeth 8.5, 5.5 and 6.5. Once restoration treatment had been carried out fluoride treatment was given.

Principal details and data obtained as a result of the treatment: Throughout the treatment different behavior guide techniques were used given that the patient had been diagnosed with ADHD and he had behavior disturbance related to Noonan syndrome itself.

Description of the post-treatment period: After carrying out a treatment plan, fluoride treatment was carried out and he was monitored periodically every three months.

#### **44. PREMATURITY: A RISK FACTOR FOR DEVELOPING A FUTURE CRANIOMANDIBULAR DYSFUNCTION?**

**Gutiérrez B, Beltri P, Diéguez M, Vilar C, Moreno MP**

*Universidad Europea de Madrid*

*Objective:* To carry out a revision of the literature on the possibility of children born prematurely developing a craniomandibular dysfunction.

*Material and methods:* A search was performed of the Pubmed, Medline and The Cochrane Library databases. In addition, articles and books in the European University of Madrid and the Universidad Complutense de Madrid were consulted.

*Results and Discussion:* The reduction in mortality of extremely small premature babies is generally accompanied by an increase in morbidity in these children. In the orofacial field there are frequently disturbances in the growth of the jaws and orofacial development habits. There may also be chronological eruption disturbances, structural anomalies in hard dental tissues, or carious pathology.

The TMJ permits the development of feeding habits. Early diagnosis is therefore important of any pathology or dysfunction in this joint that may disturb the development of these children.

*Conclusions:* There are many authors who agree that premature children often have orofacial manifestations. However, in the literature there is to date no scientifically valid study that demonstrates that the condition of prematurity is a risk factor for developing a future craniomandibular dysfunction.

#### **45. PEDIATRIC DENTISTRY TREATMENT IN AN EPILEPTIC CHILD**

**Torres L, Bartolomé B, Gutiérrez B, Vilar C**

*Universidad Europea de Madrid*

*Material and methods:* In order to give this lecture, we have used the libraries of the Universidad Complutense de Madrid and the Universidad Europea, and databases such as Pubmed and Medline have been consulted.

*Results:* Epilepsy is a very common disease (it affects 50 million people in the world) and most of these cases appear during infancy.

Carrying out a proper medical history that includes the habitual antiepileptic medication of the patients, and their history of convulsion episodes is important in order to treat these patients in the consulting room. In

addition, a detailed clinical examination of oral tissues is essential in order to be able to detect the existence of any periodontal disease which is so common in these children.

In these patients the usual actions of the pediatric dentist regarding routine treatment may require modification given the possibility of a convulsive episode, and the protocol to be followed in order to avoid possible lesions should be known.

*Conclusions:*

1. The dentist requires basic knowledge on how to act appropriately when treating an epileptic child.

2. Periodontal disease in these children is a very common problem.

3. In the event of convulsions in the consultation room, being familiar with the protocol to be followed is essential.

#### **46. CHILD ABUSE AND PEDIATRIC DENTISTRY**

**Moreno MP, Bartolomé B, Torres L, Gutiérrez B, Vilar C**

*Universidad Europea de Madrid*

*Objectives:* The objective of this lecture is to stress the importance of the role of pediatric dentists in the prevention and detection of child abuse.

*Material and methods:* In order to give this lecture, a revision of the literature was carried out using the Medline and Pubmed databases. University libraries were visited (Dental Faculty of the UEM, Dental and Medical Faculty of the UCM) in order to search for articles related to the subject under examination.

*Results:* Child abuse is a very current and controversial subject that not only has educational and social determining factors, but also legal and fundamentally humane factors.

The abused child may have different lesions, not all located in the mouth, which should put pediatric dentists on the alert. The ones that stand out the most are: mucosal lesions, burns, oral infections, break in frenum and dental trauma. Being familiar with the signs and symptoms is of vital importance for a correct diagnosis.

*Conclusions:*

1. There are various physical and/or mental manifestations that can lead the professional to suspect child abuse.

2. The pediatric dentist is on many occasions one of the first to detect this and the responsibility of raising any suspicions of abuse should be assumed.

#### **47. ASPERGER SYNDROME. CASE REPORT**

**Díez S, Martínez TP, Guinot F, Bellet LJ**

*Universitat Internacional de Catalunya. Barcelona*

*Introduction:* Asperger syndrome (AS) was first described in 1944 by Hans Asperger, an Austrian child

psychiatrist. He described four boys aged between 6 and 11 with a common characteristic which was a strong disability as a result of social interaction difficulties, and in spite of apparent cognitive and verbal capacity. He introduced the concept of Autistic Psychopathy (Asperger Syndrome) into current terminology.

*Brief description of antecedents:* Eight year old patient of the female sex who attended the University Dental clinic of the Universidad Internacional de Cataluña with a diagnosis of Asperger syndrome. She was receiving treatment with Strattera® for attention deficit.

*Type of treatment carried out:* During the first visit, and after carrying out various behavior management techniques, a clinical and radiological examination was carried out of the patient. During the second visit obturation was carried out of 3.6. During the third visit obturation of 5.4 and 5.5 was carried out. And on the following visits obturation of 8.5, 6.4, 7.5 and 7.4 was carried out. Once the restoration treatment had been carried out, fluoride treatment was performed.

*Principal details and data obtained as a result of the treatment:* Throughout the treatment, various behavior techniques were used due to the patient having being diagnosed with attention deficit, and as a result of behavior disturbances particular to Asperger syndrome.

*Description of the post-treatment period:* After carrying out a treatment plan, fluoride treatment and periodic check-ups were carried out every three months. During the check-up the positive state of the reconstructions could be confirmed.

#### **48. OSTEOGENESIS IMPERFECTA: A CHALLENGE FOR PEDIATRIC DENTISTS**

**Bartolomé B, Mourelle MR, Gallardo NE, de Nova MJ**

*Facultad de Odontología. Universidad Complutense de Madrid*

*Introduction:* Osteogenesis imperfecta is a dominant autosomal disease of conjunctive tissue, also known as glass bone disease. There are various types, and dentin formation in primary and secondary teeth is affected. It has an incidence of 1:7000 live births and it is not sex related.

*Objectives:* a) To study the incidence rate of osteogenesis imperfecta in the population studied; b) to identify the different types of osteogenesis imperfecta; c) to investigate the different drug therapy of these patients; and d) to observe the state of the dentition and treatment needs.

*Material and methods:* The data of the medical records of the child patients who visited the Integrated Dental Care program for special needs children of the Dental Faculty of the UCM was collected.

*Results:* The medical record data of the children seen between October and March with ages between 6 and 8 were compared according to: medical history, drug therapy, dental history, behavioral history as well as their dental state and need for pediatric dentistry treatment.

*Conclusions:* Osteogenesis imperfecta is a disease that requires multidisciplinary treatment and dentists play a fundamental role in diagnosing this disease as in many of these patients there are repercussion in the oral cavity.

#### **49. HOW, WHEN AND WHY SHOULD A GERMECTOMY BE CARRIED OUT. A CASE REPORT**

**Rodríguez Riquel J, Belle i Dalmau L**

*Clínica Dental Huelva. Huelva*

*Background:* In spite of being well into the third millennium, the functional and clinical significance and interest in third molars continues to be controversial, and one of the concerns of dentists is to know when extracting these is necessary, and when these can be left to erupt completely and successfully on their own.

For this, a case report will be presented of a 12 year old male patient with no pathological background nor allergies to medicines, who attended for a check-up. We were able to observe during the clinical examination that the lower second molars had not erupted. The complementary radiographic tests showed that the lower third molar germs had impacted the distal surface of the second molars, which was stopping the latter from erupting.

*Treatment given:* Germectomy of both lower tooth germs

*Details and data of the treatment:* The extractions were carried out under locoregional anesthesia in two surgical interventions, one on the right lower hemi-arch and the other in the lower left hemi-arch.

The lower third molar germs were extracted by means of a mucoperiosteal triangular flap, window osteotomy and tooth germ sectioning.

*Post-treatment period:* After the intervention, the appearance of complications was controlled and a follow-up and radiographic control was carried out of the patient in order to observe the eruption and correct positioning of the lower second molars.

The patient's age, sex, extraction motive, degree of dental development, position, angle and embedded third molars were registered. Finally, an evaluation was made of the association between these variables and the appearance of postoperative complications.

#### **50. ORAL SURGERY IN PEDIATRIC DENTISTRY PATIENTS**

**Abad M, Sanmartí G, Figueiredo R, Gay-Escoda C**  
*Máster de Cirugía Bucal e Implantología. Universidad de Barcelona. Barcelona*

*Objective:* To determine the incidence, indications and complications of Oral Surgery in pediatric patients.

*Patients and methods:* A retrospective study was carried out of the patients who had been seen by the



Department of Oral Surgery of the University of Barcelona's Dental Clinic between April 2008 and January 2009. The inclusion criteria in the study were patients between the ages of 6 and 16. Out of a total of 3700 patients seen over this period, only 81 had the right age to be included in the study. The data according to the motive of the consultation were registered together with the diagnosis, treatment carried out in each patient, and the appearance of intra- and postoperative complications.

**Results and statistical data:** Only 2.19% of the patients seen in our Oral Surgery Department were under 16 years old and required surgical therapy. Of these 45.7% had been sent for extraction of third molar tooth germs. 8.6% had been referred for the extraction of permanent teeth with large areas of destruction due to caries, and 6.2% because of the avulsion of primary teeth. The incidence of patients requiring oral frenum surgery was 9.9% (4.9% upper lip, 2.5% lower lip, 2.5% tongue) and the patients referred by their orthodontists for the fenestration of canines was 4.9%. 18.5% had embedded teeth that required surgical intervention (2.5% permanent teeth, 11.1% mesiodens and 2.5% other supernumerary teeth) and 6.2% were referred to our Department for the evaluation of soft tissue lesions (3.7% mucoceles and 2.5% fibromas). Finally, 2.5% of the patients had cystic lesions in the jaws. The intra- or postoperative complications registered were edema, trismus, alveolitis and pain.

**Conclusions:** Most pediatric dentistry patients are referred for the extraction of asymptomatic wisdom teeth, for orthodontic reasons or for prophylactic extraction, and only a minority attend due to hard or soft tissue lesions (mucoceles, fibromas or cysts). The incident of pediatric dentistry patients requiring a certain type of oral surgery is relatively low.

## 51. DIAGNOSIS AND TREATMENT PLAN FOR A TRANSMIGRATED MANDIBULAR CANINE IN A PEDIATRIC PATIENT

**Herrero G, Valmaseda E, Berini L, Gay-Escoda C**  
*Máster de Cirugía Bucal e Implantología Bucofacial de la Universidad de Barcelona.*

**Introduction:** Dental retention is an unusual phenomenon that is defined as the non-eruption of a tooth one year after the normal eruption age. When the embedded tooth goes over the midline of the jaw involved, we refer to dental transmigration. The etiology is diverse although there are factors that favor the appearance of this pathology among which are: premature loss of primary teeth, existence of dental bone discrepancy or the presence of odontomas.

**Case report:** The case is presented of a 13 year old patient who was referred by his orthodontist to the Department of Oral Surgery of the University of Barcelona's Dental Clinic due to an embedded canine on the left side of the lower jaw. A detailed medical history was taken and the necessary complementary tests carried out (orthopantomography and lateral skull tel-

eradiography). Once the case had been studied, it was decided that the embedded canine was to be removed under local anesthesia. In the periodic follow-ups favorable regeneration was observed of the bone defect in the operated area.

**Discussion:** Transmigration is an extremely unusual anomaly. This phenomenon should be suspected when there is no permanent canine in the arch, or if the primary canine remains in the mouth beyond the exfoliation age. The spontaneous eruption of transmigrated canines is an extremely rare phenomenon, although in the literature we may find a few publications describing this. The finding may be accidental in routine check-ups or radiographies because, on most occasions, they are asymptomatic unless there is an associated pathology. The ideal treatment with these embedded teeth is interceptive, but this is rarely applied as it is a pathology that is difficult to predict. Therefore, once the pathology has been established, the most suitable treatment will be decided on: exodontia, rescue surgery or therapeutic abstinence with periodic follow-ups. Extraction of the transmigrated embedded tooth is the treatment that is indicated most commonly.

## 52. QUANTITATIVE EVALUATION OF RANKL IN CHILDREN WITH DENTAL ERUPTION DELAYS

**Cuadros C, Rubert A, Clotet J, Guinot F, Bellet LJ**  
*Universitat Internacional de Catalunya. Barcelona*

**Objective:** To compare the levels of RANKL (*receptor activator of NF-kappaB ligand*) in the crevicular fluid of children experiencing delays in dental eruption of unknown etiology, with those of children with normal eruption.

**Material and methods:** A total of 40 individuals were included in the study. The population in the study was made up of child patients who attended the Dental University Clinic of the Universitat Internacional de Catalunya (UIC). They were classified into 4 groups: 2 with a delay in dental eruption with no known etiology; and 2, groups with dental eruption within the norm. The inclusion factors were: children of both sexes aged between 6 and 14 with no medical history of interest and good general health; to have or to have had, a delay in dental eruption of 12 months or more with regard to the norm and not to have any of the disturbances related to eruption delays. Samples were taken from the teeth under study by means of paper tips that were stored at -70°C. Later, the levels of RANKL were calculated in the crevicular liquid by means of the Enzyme-linked immunosorbent assays (ELISA).

**Statistical analysis:** the ANOVA test was applied by means of the statistical system Statgraphics Plus® 5.1 version.

**Results:** Larger levels of RANKL that were statistically significant were found (p-value = 0.0026) in those primary molars that were mobile as a result of physiological exfoliation within the normal period, compared with those that should have been shed twelve months previously. Statistically significant differences were not

found ( $p$ -valor  $> 0.05$ ) among the permanent teeth that had erupted within a normal time period and those that erupted with at least 12 months delay.

*Conclusions:* RANKL plays a notable role in the exfoliation process of primary teeth.

### 53. UPPER LIP FRENUM REMOVAL. CASE REPORT

**Piza N, Broch S, Guinot F, Bellet LJ**

*Universitat Internacional de Catalunya. Barcelona*

*Brief description of antecedents:* The case is presented of a 7 year old male, with no medical, family or personal history of interest who attended the department of Pediatric Dentistry of the Dentistry Clinic of the Universitat Internacional de Catalunya, in October 2008. During his first visit anamnesis was carried out together with a radiographic examination and treatment plan. The orthopantomography revealed a radiopaque image between the upper central incisors that was compatible with a mesiodens, which was found to be present in the mouth. The clinical examination revealed a 3 mm diastema between the borders of the central upper incisors and 6 mm by the neck, in addition to a hypertrophic upper lip frenum.

*Type of treatment carried out:* After carrying out an anamnesis and a clinical-radiological study, extraction of the mesiodens was decided on and to cut the upper lip frenum under local anesthesia using the surgical V-Yplasty technique. The surgical intervention was carried out with no intra- nor post-operative complications.

*Principal details and data obtained as a result of the treatment:* From the day of the intervention to the last day of monitoring, the diastema was reduced by 2 mm between the borders of the incisors and by 3 mm by the neck of the upper incisors.

*Description of the post-treatment period:* Monitoring was carried out a week later and at three months after the intervention in order to assess the diastema closure and the need for orthodontic treatment.

### 54. SURGICAL INTERVENTION OF A SHORT LINGUAL FRENUM. A CASE REPORT

**Violés M, Mayné R, Barbero V, Guinot F, Bellet LJ**

*Universitat Internacional de Catalunya. Barcelona*

*Brief description of the antecedents:* Male patient who attended the Integral Pediatric Dentistry Masters degree of the Universitat Internacional de Catalunya. He did not have any medical or personal history of interest. The reason for the consultation was the presence of considerably inflamed gingiva.

*Type of treatment applied:* During the first visit anamnesis was carried out together with a clinical and radiological examination, followed by a diagnosis and treatment plan. In addition to gingivitis as a result of the accumulation of plaque and caries, a short lingual frenum was observed.

*Principal details and data that were obtained as a result of the treatment:* During his first appointments all the restoration treatment was carried out. Then, with the help of a speech therapist the possibility was evaluated of recovering the movement of the tongue by means of myofunctional treatment. After the evaluation, surgical treatment was advised to solve the issue of the short lingual frenum. The surgery was carried out under local anesthesia and the frenum was sectioned transversely after tractioning and suturing the tip of the tongue. The release achieved was checked and the tongue then sutured.

*Description of the period after the treatment:* Once the frenectomy had been carried out, the parents were given exercises to carry out at home, which consisted in helping with the total recovery of the mobility of the tongue. A week after the surgery, the patient was seen and the stitches removed and a follow-up by a speech therapist was advised.

### 55. GIANT CELL TUMOR: CASE REPORT

**Pascual M, González Y, Cahuana A**

*Hospital Sant Joan de Déu. Barcelona*

*Introduction:* Giant cell tumor is defined as a primary bone neoplasm that is benign, locally aggressive and with a low incidence rate in the pediatric population. In the maxillofacial area it is very uncommon and arises, according to frequency, in the mandible, upper jaw, skull base and mandibular condyle.

*Objective:* The presentation of a case report involving a child.

*Case report:* A nine year old girl with no history of interest attended the Department of Pediatric dentistry of the Sant Joan de Déu Hospital in Barcelona in June 2008, as a result of swelling of the mandible and dental pain. During the anamnesis and the examination, a slight swelling of the mandible and facial asymmetry was observed. Her general health was good, she had no fever or caries. The radiological examination showed considerable swelling from 33 to 43 which was causing the expansion and thinning of the cortex in a vestibular direction and the separation of roots by the lower incisors. The treatment carried out involved endodontia of 42 and extraction of 83, 84 before the excision of the tumor. The tumor was removed under general anesthesia and the bone margins were not sectioned. The histopathologic analysis confirmed the presence of giant multi nuclei cells arranged in groups and on their own. The result of the intervention was very favorable. The patient is currently in a good state of health, generally and orally, and she undergoes periodical clinical and radiological monitoring.

*Comment:* Giant cell tumor is very uncommon, it is locally destructive and it is of unknown etiopathogeny. The differential diagnosis should include benign entities such as giant cells, cherubism and brown tumor of hyperparathyroidism, and radiologic entities that are similar to odontogenic myxoma and ameloblastoma. En bloc resection with wide safety margins has been

observed to be the most efficient treatment given the high rate of recurrence and its malignant transformation potential. In lesions of a large size or with aggressive behavior, co-adjutant therapies can be used that are aimed at reducing the size and risk of bleeding from the tumor during the surgery.

## 56. EARLY DIAGNOSIS AND TREATMENT OF ECTOPIC MAXILLARY CANINES

**Pérez M, González Y, Cahuana A**

*Hospital Sant Joan de Déu. Barcelona*

*Introduction:* The upper canine is one of the teeth that most commonly develops ectopic eruption and, as a result, it becomes embedded. The consequences of an embedded canine are: functional absence, dental migration, cysts, malocclusion, need for orthodontic treatment and oral surgery for exposure. All this has considerable economic repercussions that could be minimized with early diagnosis and treatment of this group of teeth.

*Objective:* Revision of the literature on the early diagnosis and treatment, and presentation of case reports.

*Material and methods:* Revision of the literature of the last 10 years on early diagnosis: suspicious clinical signs, radiological examination, treatment guidelines. Revision of our clinical cases.

*Results:* 15 articles were revised, and the findings that were common in early diagnosis were: the absence of bulging on palpation of the canine crown at the back of the vestibule between the ages of 9 and 10. Agnesia or microdontia of permanent lateral incisors and pronounced incisor retrusion. The diagnosis was confirmed with a radiographic study in which the position of the permanent canine in the dental arch in the three space planes was verified (taking into consideration inclination, distance, overlap and height). The early treatment described was excision of the primary canines so that the canine with the diagnosis of ectopia could be brought back to the eruption path.

When revising our cases, the favorable evolution should be highlighted of differentiated guidelines in which the primary molars were first extracted in order

to favor the inclination distally of the permanent canine after the early eruption of the first premolar.

*Comments:* There are clear suspicious signs of ectopic canines that can be diagnosed promptly. The extraction of primary canines has been described as early treatment. We describe extraction guidelines for primary molars followed by the extraction of primary canines with a favorable outcome.

## 57. HARMFUL HABITS IN PEDIATRIC DENTISTRY PATIENTS

**Mourelle MR, Gallardo NE, Bartolomé B, de Nova MJ**

*Facultad de Odontología. Universidad Complutense de Madrid*

*Introduction:* A harmful oral habit refers to a habit acquired as a result of continuous repetition of a series of acts that serve to calm emotional needs. They are very prevalent in the child population and, according to various studies, they may reach 50%.

*Objectives:* a) To examine the number of children with harmful habits in the pediatric dentistry clinic of the UCM; b) to establish how many children have a habit; c) to analyze the cases affecting oral breathing habits; d) to determine the cases of atypical swallowing; e) to identify the cases with lingual interpositioning; f) to investigate the children with onychophagia; g) to study the cases of non-nutritious suction cases; and h) to observe if there are significant differences between sexes.

*Material and methods:* The study was retrospective-descriptive of all the children who attended the course on Pediatric Dentistry of the UCM with ages between 6 and 14. All their clinical records were revised in order to evaluate the presence of harmful habits.

*Results:* We found that 51.2% had habits, and 48.8% did not. Among the children who had harmful habits, we found 74% had only one habit, 46% two habits and 12% three. The greatest prevalence was of non-nutritious sucking habits.

*Conclusions:* Large differences between sexes were not found. Of the children studied the most widespread habit was infantile swallowing.

## Poster Communications

### 1. INCORPORATION OF TOOLS TO EVALUATE CARIES RISK IN MEDICAL HISTORIES IN PEDIATRIC DENTISTRY

**García Margarit M, Ferrer Tuset I, Martín Oltra MJ, Aura Tormos JI, Lloret García M**

*Facultad de Medicina y Odontología. Universidad de Valencia*

*Objectives:* To provide the practitioner with tools that permit cataloguing patients according to caries risk, and to systemize the direction of the relevant clinical procedure protocols.

*Material and methods:* A revision of the literature was carried out using databases (Pubmed, CSIC), text books and different organizations or dental societies.

*Results:* Of the literature revised, 7 tools were analy-

zed that assessed caries risk. All these contemplated the main etiological factors of the disease. However, there was no unanimity as to other influential factors.

Only those proposed by the AAPD and CAMBRA present their tools in a compact format to facilitate their use, and their inclusion of the patient's medical history. In addition, clinical protocols are incorporated depending on the estimated risk: high, moderate or low.

*Conclusions:* It has been demonstrated that the incorporation of tools to evaluate caries risk improves the systems for diagnosis and clinical decision making in caries management. For this a useful tool is presented for daily clinical practice, which permits including a patient in a particular disease risk area: high, moderate or low, and directing the preventative and/or therapeutic process in a correct and efficient fashion.

## 2. OUR EXPERIENCE WITH LASER FRENECTOMIES

**Bonafé N, Borrás C, García E, García M, Catalá M**  
*Facultad de Medicina y Odontología. Universidad de Valencia*

Four case reports are presented of frenectomies in child patients. Excision of an abnormal lip frenum had been indicated for various reasons: gingival margin retraction, existence of inter-incisive diastema and limitation of lip mobility. The treatment applied was lip frenum excision with laser diodes.

Surgical treatment of the frenum using laser has a series of advantages over conventional techniques. Of these the haemostatic effect should be highlighted together with excellent vision of the operating field, the use of less anesthesia, healing by second intention with no need for suturing, and a better postoperative period with less pain, inflammation and edema. The advantages of laser surgery mean that it is more comfortable for the pediatric patient, there is greater collaboration during the treatment, and thus greater acceptance among children as well as parents.

All patients were told to use local antiseptic for 15 days, a bland diet for a week and pain killers only if needed. Two weeks later, adequate healing was observed and no patient required painkillers. In general the use of laser contributed to creating a positive attitude among the children and parents towards these treatments, despite being initially reticent.

## 3. PIGMENTARY INCONTINENCE

**Martínez Cano MP, Estrela F, Gandía AM, Prario E, Pérez Soriano V**  
*Facultad de Medicina y Odontología. Universidad de Valencia*

Pigmentary incontinence, or Bloch-Sulzberger syndrome, is a very uncommon genodermatosis of the neuroectoderm. It arises as a result of mutations of the

NEMO gene located in chromosome Xq28 that intervenes in cell protection against apoptosis. It more commonly affects the female sex. It is transmitted as an X-linked autosomal dominant trait.

The disease mainly affects the skin, but on most occasions there are anomalies of the hair, eyes, central nervous system and oral cavity. The oral manifestations tend to be: eruption delay, partial or total absence of teeth, morphological anomalies, malocclusion... As there is no specific therapy for Pigmentary incontinence, the treatment will be directed towards the predominant symptoms in each individual.

The case is presented of a four and a half year old girl, with multiple missing primary and permanent teeth, eruption delays and disturbances in dental shape (conoid 51 tooth). The diagnosis process is described and the treatment plan to be followed (removable prosthesis with retentive additions).

The objectives set are to provide the patient with correct masticatory and aesthetic function (without overlooking her self-esteem and social acceptance), permitting proper development of basal maxillary bone so that definitive treatment that is stable over time can be carried out in the future.

## 4. THE INCORPORATION OF NEW TECHNOLOGIES ENABLING IMAGE DIAGNOSIS IN PEDIATRIC DENTISTRY

**Ferrés-Amat E<sup>1,2</sup>, Maura I<sup>1</sup>, Díaz Martínez C<sup>1</sup>, Ferrés-Padró E<sup>1,2</sup>**

<sup>1</sup>Hospital de Nens. Barcelona. <sup>2</sup>Universitat Internacional de Catalunya. Barcelona

*Introduction:* Image diagnosis techniques are basic for carrying out a diagnosis, treatment plan, follow-up, and for monitoring lesions or diseases in the oral and maxillofacial region. The technological advances that combine images and computerized processes permit obtaining a diagnostic resolution that was unthinkable until a few years ago.

*Objectives:* The aim of this study is to set out the advantages and clinical uses of incorporating certain radiodiagnostic techniques. Four cases are presented in which image diagnosis was decisive. *Case 1.* A seven year old girl diagnosed with type 1b dentin dysplasia. In order to determine the degree of damage to the molars, a helical CAT scan was carried out. *Case 2.* A ten year old girl with an embedded ectopic upper canine (13) in the upper jaw. A computerized tomography permitted carrying out the treatment plan. *Case 3.* A twelve year old boy who suffered avulsion of teeth 21 and 22. Four months after a follow-up periapical radiography considerable resorption of 22 was observed. The helical cat scan confirmed the degree of resorption. *Case 4.* Eleven year old boy who was diagnosed with a maxillary cyst in the area of 55. In the helical CAT scan a supernumerary tooth was also diagnosed.

*Conclusions:* The use of radiographies such as the orthopantomography, the conventional computerized

tomography (CT) and the volume computed tomography (cone beam) are basic in these times for carrying out certain diagnoses and surgical therapies.

## 5. UPDATE ON BACTERIAL ENDOCARDITIS PROPHYLAXIS

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*Introduction:* Infectious endocarditis is a microbial infection which is located on cardiac valves or the endocardial lining, and the most common origin is bacterial. Given that certain dental procedures may be the origin of a bacteremia, being familiar with the correct protocol regarding procedures for patients with a bacterial endocarditis (BE) risk is important.

*Objectives:* The aim of this work is to establish an up-to-date prophylactic protocol as well as to report on the conclusions of the latest studies on the efficiency of this prophylaxis and its needs.

*Material and methods:* Revision of the literature from the year 2000 to date of articles and studies published on the matter.

*Conclusions:* In spite of referrals to general practitioners or to cardiologists being common practice, and felt among the dental profession to be well grounded, the responsibility of appropriate antibiotic prophylaxis in BE before dental treatment, reverts finally back to us.

The medicines recommended by the AHA in the latest 2007 guidelines have hardly varied from the recommendations in 1997, but criteria on patient selection have been simplified, just as the number of dental procedures in which these are recommended has decreased.

There is much controversy as to whether the potential risk from this prophylaxis treatment exceed the benefits.

## 6. THE CONTRIBUTION OF PEDIATRIC DENTISTS TO PHARMACOVIGILANCE

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*Antecedents:* The case is presented of Necrotizing Ulcerative Gingivitis of a 17 year-old girl with symptoms of necrosis of the taste buds, pain and bleeding after a catheter. The patient does not have any other medical history of interest other than a vaccination recently introduced into the market, which for a short time had been associated with the appearance of the pathology.

*Treatment:* After the clinical and radiographic diagnosis, antibiotics were prescribed together with anti-inflammatory and antiseptic medication. Instruc-

tions on oral hygiene and diet were given and every week she was monitored until the pathology had disappeared.

*Details and data obtained after the treatment:* The patient evolved favorably and after a week the pain and bleeding stopped. Two weeks later the necrosis of the taste buds disappeared and after three weeks her gingiva were healthy but her taste buds were not occupying the pores, and they had rounded edges.

*Description of the post-treatment period:* In cases in which the pediatric dentist suspects that a certain drug, recently introduced for a therapy, is related to, or may precipitate, the appearance of a pathology, he has the obligation of notifying this swiftly, following the right channels. The steps to be taken are described for communicating this occurrence to the appropriate authorities.

## 7. FISSURE SEALANTS WITH SELF-ETCHING ADHESIVES: MICROINFILTRATION OF CONTAMINATED ENAMEL

**Coelho A, Canta J, Luis H, Oliveira S, Marques P**  
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*Objectives:* To evaluate the influence of two self-etching adhesives in the microinfiltration of a fossa and fissure sealant, applied on dry and contaminated enamel

*Material and methods:* 180 third molars were divided into 9 groups, according to the possible combination of the adhesives and the surface conditions of the enamel:

Groups 1, 2 and 3 sealant applied according to the traditional technique with phosphoric acid/ Prompt L-Pop / ClearfilS3Bond on dry enamel, Groups 4, 5 and 6 sealant applied with phosphoric acid / Prompt L-Pop / ClearfilS3Bond on enamel contaminated with saliva, and Groups 7, 8 and 9 sealant applied with phosphoric acid/ Prompt L-Pop / ClearfilS3Bond on enamel contaminated with water. After sealing the fissures, the molars were subjected to 500 thermal cycles, covered with nail polish and submerged in methylene blue solution for 24 hours. The crowns were separated from the roots and sectioned lengthways (4 visualization sections per molar). Each section was sequentially polished so that it could be observed by optic microscope. The percentage of infiltrate on both sides of the fissure was measured and the value obtained was converted in an ordinal scale by thirds. Only the maximum percentage/section was taken into consideration. The data were submitted to the ANOVA analysis and Tukey test, with a significance level of 5%.

*Results:* On dry enamel, the traditional technique had less microinfiltration, and it was statistically different from the combined sealant with Prompt L-Pop (p=0,02) and ClearfilS3Bond (p=0,005). Under salivary contamination conditions, the two adhesives were similar and superior to the traditional technique (p=0,000). With water contaminated enamel, all the groups were statisti-

cally different, with the best being ClearfilS3Bond, followed by Prompt L-Pop.

**Conclusions:** The combination of self-etching adhesives reduces the microinfiltration of the sealant, when applied to contaminated enamel.

The authors would like to thank 3M and Kuraray. This investigation was carried out in the UICOB, unit R&D n°4062 of the FCT.

## 8. DENTOFACIAL DISTURBANCES IN HYPER IGE SYNDROME

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**Introduction:** Hyper IgE syndrome is a rare primary immunodeficiency disorder with multisystemic characteristics, high serum IgE levels, recurrent skin and lung infections, typical facies, joint laxity, osteopenia and scoliosis. Although the STAT3 transducer gene has recently been thought to be the cause of the Hyper-Ige syndrome (HIES), its etiology continues to be unknown. At an oral level we find retained primary teeth due to the difficulty in carrying out rhizolysis physiologically. As a result there are disturbances in the eruption of the permanent teeth, together with supernumerary teeth, ectopic eruptions and thickening of periodontal tissue, recurring infections of the mucosa such as candidiasis, narrowing of the palatine arch, slight prognathism and thickening of the palatal mucosa. The facies are characterized by a predominant forehead that is flat, wide and prominent, an accentuated supraorbital rim, wide nasal base independent of race, rough facial skin with prominent pores.

**Objectives:** To determine the dentofacial disturbances that may help to diagnose Hyper IgE syndrome.

**Discussion and conclusions:** Job syndrome is a multisystemic disorder affecting the immunological system, bones, connective tissue and teeth. The best treatment is the early diagnosis of these complications, therefore, in spite of being an uncommon syndrome, the patients suffering it have typical dentofacial characteristics that can direct us towards the diagnosis with the help of an immunology specialist.

## 9. TREATMENT MODALITIES FOR THE ECTOPIC ERUPTION OF PRIMARY MOLARS

**Fierro-Monti C, Bravo L, Pérez A**

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The ectopic eruption of first permanent molars is due to a local disturbance of the molar eruption pattern, and it results in the molar impacting against the adjacent tooth, and the distal root of the primary second molar is as a result resorbed.

Three cases are reported of ectopic first molars that were treated differently. For the first we used dental separators, the second case was treated with active distalation of the blocked molar, and in the last case the primary molar was extracted and the space was recuperated.

The treatment modality was chosen according to the degree of impaction, resorption and occlusion in each case, showing that clinical success is possible if there is a proper diagnosis. Thus, for the first case, as the permanent molar was only slightly inclined, a self-lock type separator was used. Then an elastomeric separator was used for maintenance. In the second case the occlusion permitted the adhesion of a button through which the necessary traction was carried out, as the molar was very inclined. And in the third case, the abscess of the primary molar made excision necessary. The inclination of the permanent molar was then reverted using an active palatal bar.

In the first two cases the follow-ups revealed radiographic success with the conservation of the primary molar affected by rhizolysis, and no periapical pathology, and at 1 and 2 years respectively. The third case showed rapid repositioning with no loss of space.

## 10. AESTHETIC AND FUNCTIONAL REHABILITATION OF A GIRL WITH HEMIFACIAL MICROSOMIA

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**Introduction:** Hemifacial microsomia (HFM) was described by Gorling et al. to refer to patients with microtia, macrostomia and defects in the formation of the mandibular ramus and condyle in a unilateral fashion. Although HFM is one of the most common craniofacial malformations (the second after cleft lip), there is little information on its epidemiology. An incidence of 1 out of every 5600 births is accepted, with the male sex and the right side being the most affected. Its etiology is uncertain and different hypotheses have been put forwards such as rupture of the stapedia artery, a hereditary transmission in a dominant or recessive form, disturbance to chromosome 10, alcohol, tobacco or isotetrinoine consumption during pregnancy.... The clinical presentation varies from slight facial asymmetry to a severe hemifacial development failure with implications in the orbit and even the total absence of an ear. The chin and the facial midline are displaced towards the affected side, and the area of the lip may also be involved and it will be raised. There may in addition be hypoplasia of the maxilla and of the masseter, temporalis and pterygoid muscles. The intraoral region will also be involved with the appearance of disturbances to the occlusal plane, third molars and second premolar agenesis by the microsomia. Supernumerary teeth may appear, there may be delays in the eruption sequence as well as the appearance of dental

hypoplasia. The treatment options include from simple orthodontic correction in the milder cases to surgical treatment, either with the use of bone distractors or autologous costochondral grafts.

*Case report:* Presentation and antecedents: ten year old girl was seen by the Department of Child Maxillofacial surgery in the La Paz Hospital. She had Type III hemifacial microsomia with severe deviation of the occlusal plane and a severe reduction of the right hemimandible.

*Treatment and results obtained:* A bi-directional external distracter was used, and a dermo-fat graft was placed in the affected side. Optimal results were obtained, aesthetic as well as functional.

*Post-treatment period and current state:* The girl is to date in a perfect state and is awaiting surgery to her ear.

## 11. ACCESSORY CUSPS

**Uriol K, Albero G, Correa ME, Rodríguez-Villa M**  
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*Brief description of the antecedents:* In our revision of the literature (\*1) we discovered that the name “cúspides accesorias” (accessory cusps) is given to the accessory tubercles located in the lingual/palatal surface of anterior teeth. These have a multifactorial nature and they may arise on their own or with other systemic conditions. Histologically it consists of enamel and dentine and it may or may not involve the pulp. The most common complication is the presence of occlusal interferences especially in the area of the maxilla. The case is presented of a 9 year old patient with accessory cusps in upper incisors with occlusal disturbance which was making excentric movement difficult.

*Type of treatment applied:* Based on the articles revised, conservative treatment was decided on which consisted in the reduction of the cusps by means of gradual filing and a radiographic follow-up until occlusion was normalized.

*Principal details and data obtained during the treatment:* The patient reported neither discomfort nor pain after the filing of the teeth, or any pulp involvement, and an improvement had been noticed in occlusion.

Description of the post-treatment period: Under study.

(\*1) Survey of talon cusps in the permanent dentition of a Turkish population (J Contemp Dent Pract 2008); Talon cusp: report of a case (Quintessence Int 2006).

## 12. CROWN FRACTURES IN YOUNG PERMANENT TEETH: A MULTIDISCIPLINARY TREATMENT

**Costa AL, Ramos JC, Xavier T, Lemos B**  
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*Brief description of the antecedents:* In addition to the absence of pathologies, aesthetics and function have been established as fundamental factors in the oral rehabilitation of children. Oral trauma is a growing motive for concern, due not only to the high incidence levels and prevalence, but also because the treatment is very demanding. This concern increases even more when orofacial trauma leads to fractures, disturbance to the position of teeth or even loss. Facts that, particularly in children, may have a negative effect in functional, aesthetic and psychological terms. If in the primary dentition phase the peak in incidence of this type of situation is between 2 and 3 years of age, in a direct relationship with the level of motor coordination; in the young permanent dentition various predisposing factors have been recognized with certain aspects standing out such as increased overjet, practicing sport, accidents or physical violence. When the seriousness of the trauma involves pulp treatment, and if we are dealing with permanent teeth that are not completely mature and which do not permit conventional endodontic treatment, the therapeutic options should take include a careful selection of the materials and techniques to be used.

*Type of treatment applied:* With this study the authors aim to illustrate the clinical focus of a traumatic episode of a child with immature anterior teeth, with a diagnostic and operative complexity that included carrying out an apical plug with MTA, dental whitening, gingivectomy with laser and crown-root reconstruction with fiber posts and composite resin.

*Details obtained through the treatment:* Taking into consideration that different tissues and structures of the dental organ had been affected, restorative techniques that were often complex and multidisciplinary were carried out, respecting to the maximum the anatomical, histological and biological principles. The complete restoration of function and aesthetics was achieved.

*Description of the posterior period:* The boy was monitored regularly and he is asymptomatic after a year.

## 13. HARMFUL HABITS IN CHILDREN AGED 3 TO 6 IN OPORTO (PORTUGAL)

**Vieira C, Choupina M, Paiva E, Manso C, Ferreira LP**

*FCS-UFP- Porto. Portugal*

*Objective:* To establish the prevalence of harmful oral habits in children aged between 3 and 6. To link these habits with the socioeconomic level of the parents and the type of nutrition in the first months of life.

*Material and methods:* Observational study with a transverse section using parental surveys. The sample consisted in 110 children aged between 3 and 6 years who were in private and public schools in Oporto (Portugal).

*Statistical data:* The tests used were the chi-square test, the Fisher test and the Mann-Whitney test, and significant differences were considered for  $p < 0,05$ .

*Results:* 83.6% of the children were breast fed and 96.4% were bottle fed. 79% used a pacifier and 81% had onychophagia; 7.1% had bruxism and 20.2% had a thumb sucking habit. Feeding type and time was related to the frequency of harmful oral habits, that is to say, that just receiving maternal milk and mixed feeding for 6 months or more, has a protective effect against acquiring harmful oral habits. It was also observed that the duration of breast feeding was related to the socioeconomic level of the family.

*Conclusion:* It is important that dentists inform parents of the importance of maternal breastfeeding for more than 6 months (as this type of feeding tends to protect the child from acquiring harmful oral habits) and of stopping these oral habits before they are three years old in order to prevent malocclusion and dentofacial discrepancies.

#### 14. PEDIATRIC MEDICATION: TYPE AND QUANTITY OF SUGARS PRESENT

**Paiva E, Miranda A, Vieira C, Ferreira L, Manso L**  
*Universidade Fernando Pessoa. Porto, Portugal*

*Objectives:* To determine, in a quantitative or qualitative manner, the quantity of sugars present in the syrups and/or pediatric suspensions that are most prescribed in Portugal.

*Material and methods:* Descriptive study. The list of pediatric medication most sold in Portugal was requested (syrups and/or oral suspension). Analysis of the prospectuses, in order to determine the type and quantity of sugar present.

*Statistical data:* The results were compiled using the computer program Microsoft Excel® (2000) in order to calculate the frequency.

*Results:* Of the 26 drugs analyzed, 50% contained some type of sugar. And of these 42,3% had saccharose. Only 3 drugs did not contain saccharose in their composition (Bissolvon Linctus Adulto®, Bissolvon Linctus Criança® and Silomat®). The concentration of saccharose found varied between 21mg/ml (Broncoliber®) and 750 mg/ml (Atarax®). Either substituting and/or added to the saccharose we found sodium saccharine, aspartame, lactose, sorbitol and fructose.

*Conclusion:* Doctors and dentists should be informed of the cariogenic potential of medication. They should preferably prescribe sugar-free medicine, or give oral hygiene recommendations regarding these drugs. Substituting saccharose with non-acidogenic sweeteners in order to prevent the cariogenic potential of these drugs is recommendable.

#### 15. TOOTH REIMPLANTATION: PROGNOSIS AND COMPLICATIONS

**Rodríguez-Villa M, Uriol K, Costa F, Pérez F**  
*Universidad Europea de Madrid*

*Objectives:* To carry out a revision of the possible complications and the prognosis of permanent reimplanted teeth after trauma.

*Material and methods:* Revision of the literature using databases such as Medline and Pubmed in faculties.

*Results:* The avulsion of permanent teeth after trauma is a frequent phenomenon that requires precise therapeutic knowledge in order to achieve treatment success. Dental reimplantation is the correct option, but it is not exempt of mid- and long term complications.

The case is presented of a 12 year-old boy with avulsion of tooth 11. After root canal treatment and reimplantation, ankylosis arose as a complication, which led us to design a new treatment plan.

*Conclusion:* Despite dental reimplantation being the main therapeutic option after an avulsion, it is very common for complications to arise. If it appears that the treatment may fail, the patient should be offered alternative treatment to restore future function and aesthetics.

#### 16. DECISION MAKING WITH THE CLEFT PATIENT. WHEN SHOULD DENTAL TREATMENT BE FINISHED?

**Álvarez C, Pardo B, Senosiain A**  
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*Objectives:* To acquire a social commitment and to improve the quality of life of patients with cleft lips and palates, and to try to give these patients the most functional and aesthetic solution possible while avoiding overtreatment.

*Material and methods:* We are working with 32 cleft patients between the ages of 5 and 20 (9 women and 23 men) following the work protocol carried out by the Instituto Asturiano de Odontología. The first orthopedic phase permits controlling the anterior and transverse dimension of the upper jaw, and the second orthodontic phase permits achieving the dental relationship that is most suitable for each case. At this point we decide with the patient and/or his guardian, when to put an end to the long therapeutic process in order to avoid other types of sequelae.

*Results and discussion:* Frequently cleft patients do not complete their multidisciplinary treatment. In our opinion and in our area, the decision to place a permanent zirconia prosthesis entails an emotional and effective consensus, and we should ask ourselves not 'How far can we go?' but 'How far has the patient come?'

*Conclusions:* When to make the decision of finalizing the treatment of cleft patients is unclear and this frequently depends on not only the degree of satisfaction with the different treatment, but the extent of the patient's and/or his guardian's needs. At this point we should opt for therapy that is aimed at improving aesthetics and function, and at putting an end to the patient's extensive treatment.



## 17. CRANIOFACIAL AND DENTAL MANIFESTATIONS IN APERT SYNDROME: A REVISION OF THE LITERATURE AND PRESENTATION OF 6 CASE REPORTS

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*Introduction:* Apert syndrome is defined as craniofacialsynostosis, an autosomal dominant hereditary disorder with a variable expression, that includes craniofacial anomalies, syndactylia and ocular anomalies.

*Case reports:* Six clinical cases are presented that were treated and supervised by the department of Oral and Maxillofacial Surgery for Children of the Hospital Universitario La Paz in Madrid and the clinical program of the UCM: Integrated Dental Care Specialist for Children with Special Needs.

Both the dentition and occlusion of these patients was monitored, and a delay was found in their dentition in five out of six cases, with eruption of the upper central incisor varying from five to sixteen months.

Other important findings were, idiopathic root resorption, maxillary compression and class III bone with crossbite of different magnitudes.

In two cases distraction of the mid-third was necessary, and in all patients a cranioplasty was carried out.

The follow-up period of the patients varied between twelve months and ten years.

## 18. TREATMENT PROTOCOL FOR PATIENTS WITH PIERRE ROBIN SYNDROME

**Adanero A, Gómez B, Martínez L, Valero M, Martín M**

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*Introduction:* Pierre Robin is a condition present at birth that is characterized by the presence of severe micrognathia. The tongue tends to have glossoptosis which leads to episodes of suffocation together with feeding and respiratory difficulties. There is also a soft tissue cleft. The specific causes of Pierre Robin syndrome are unknown.

*Material and methods:* The joint collaboration through agreements between the department of Maxillofacial Surgery for Children of the Hospital Universitario de La Paz in Madrid and the degree course in Integral Dental Care Specialist for Children with Special Needs permitted carrying out integral treatment of the patients. The protocol that was carried out jointly is described. Fifteen months after the birth of these children,

an initial respiratory examination is carried out. When this is unfavorable a glossoplexy is immediately carried out (the tongue is joined to the lower lip) which will be kept in place for 18 months. In order to complete this treatment, external bilateral mandibular bone distraction is carried out.

*Conclusions:* Current surgical treatment by means of a glossoplexy, and bone distraction reduces the need for a tracheotomy and the mortality of these patients. Pediatric dentists need to be present during all the protocol phases in order to improve in each case the quality of life at an oral level of these children.

## 19. PRE-SURGERY ORTHOPEDIC TREATMENT FOR CLEFT LIP NEONATAL PATIENTS

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*Brief description of the antecedents:* The case is presented of two neonatal patients with a cleft lip and palate who were treated at birth with an obturator and nasal modeling before undergoing the primary surgery usually carried out in these types of patients between 3-9 months.

*Type of treatment applied:* Patients with a cleft lip and palate undergo as soon as they are born a series of processes that are aimed at obtaining adequate functional and aesthetic results. On birth, and before proceeding with the primary surgery, each child had been fitted with an orthopedic apparatus aimed at preparing the maxillary processes for the surgery. A palatal obturator had been placed with a nasal remodeling apparatus.

*Principal details and data obtained through the treatment:* In this phase remodeling the columella of patients lacking nasal support is made possible, while taking advantage that, at this time, there is a high elasticity. Orthopedics should be carried out by a pediatric dentist or orthodontist qualified and trained in treating these types of patients. The processes carried out in these patients should follow a protocol. These are complex patients and having a multidisciplinary team with experience is necessary, and there should be consensus regarding decision making.

*Description of the post-treatment period:* The patients undergo numerous surgical interventions, orthopedic and orthodontic treatments, as well as sessions with a speech therapist and even with a psychologist. Therefore the guidelines and times to act in each phase should be clear and directed at favoring results without over-treating or disturbing these patients more than necessary.