

## Posters Communications

### CASES REPORTS

#### 1. REVASCULARIZATION: A CASE REPORT. PROGRESS AFTER ONE YEAR

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*Universidad Europea de Madrid*

*Introduction:* There are currently different alternatives for treating permanent teeth that have pulp necrosis and immature apexes, such as apexification, apical closure with MTA and revascularization. Revascularization appears to be a technique with fewer secondary effects than apexification with calcium hydroxide.

The problem with this technique lies in the reduced number of cases that have been reported, as the number of candidates for this technique is small and spread all over the country. This means that a unified protocol does not exist.

*Objectives:* The objective of this presentation is to report the progress of a case over a year following revascularization treatment at the University Clinic of UEM, and, to lay the foundations together with other colleagues, both pediatric dentists and endodontists, of a common study in order to achieve an efficient consensus on this procedure.

*Materials and methods:* A 7-year old male attended the Master's degree course in pediatric dentistry of the European University of Madrid with considerable destruction of tooth 46. Open apexes and pulp necrosis could be seen on the radiograph. Revascularization was decided on in order to avoid the problems and disadvantages of conventional apexification.

Using this technique necrotic pulp is eliminated and apical closure is achieved as a blood clot is artificially created. By filing the root canal with MTA a proper seal is achieved.

*Conclusions:* Revascularization is considered an efficient technique for treating permanent teeth with immature apexes in order to achieve apical closure, as the disadvantages of conventional treatments are avoided. Apical closure is achieved over a maximum of 18 months and in only two clinical sessions.

#### 2. REVASCULARIZATION OF IMMATURE PERMANENT MOLARS. PROGRESS OF A CASE REPORT

**Martín R, González E, Gutiérrez N, Ribas D, Mendoza A**  
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*Introduction:* The treatment of immature necrotic teeth has always been a reason for concern as, although apexification has saved many teeth, these have shorter and more fragile roots. Although by using this technique apical closure is induced, the formation of dentin is not encouraged on the root wall. This leads to a tooth with fine root dentin and a wide root canal that makes it more likely to fracture. Because of this, a new technique has recently been described called "Revascularization" based on the theory that once the teeth have been disinfectated, it is possible to find vital cell remains in Hertwig's epithelial sheath, as well as in tissue recently identified as apical papillae and, given that they are both functional, they can proliferate until apical closure is encouraged.

*Objectives:* To present a case report of revascularization in progress.

*Materials and methods:* Male patient aged 9 years, who had pulp necrosis in both lower permanent molars and in one upper one, with incomplete root development, who was treated with revascularization as described in the literature, on the undergraduate course of the Faculty of Dentistry in Seville.

*Results:* We will give all the progress up until now.

*Conclusions:* Revascularization could be a valid technique for treating immature necrotic permanent teeth.

#### 3. PROCEDURE MANAGEMENT REGARDING DENTAL AVULSION CARE

**Parra R, Ros B, Velló MA, Estrela F, Catalá M**  
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*Introduction:* Complex trauma in children generates much anxiety and confusion, even in dental environments. Because of this, it is important to have protocols that identify the different processes that should be followed, so that the whole team knows how to quickly distribute the work regarding the attention a child should receive when presenting with considerable dental trauma.

One of the most dramatic situations is dental avulsion. The time that transpires between exarticulation and reimplantation is crucial for prognosis, which can worsen with bad team work.

*Objective:* To describe the procedures to be followed in dental avulsion cases with bad prognosis.

*Materials and methods:* The processes that were followed to treat a 15 year-old girl are described. She attended the Master's course of Pediatric Dentistry for emergency treatment at the Medicine and Dentistry Faculty of the University of Valencia, because of the

avulsion 4 hours previously of tooth 1.1 with closed apex, and that had been transported in a dry environment. Despite the bad prognosis we decided that it should be reimplanted and splinted.

*Conclusions:* Having protocols in writing on complex dental trauma is necessary so that the different procedures can be distributed among the members of the dental team easily, quickly and efficiently.

#### 4. EARLY TREATMENT OF INCREASED OVERJET IN THE PRIMARY DENTITION. DIRECT TRACKS

**García J, Mayné R, Cuadros C, Guinot F, Lorente AL**

*Departamento de Odontopediatría. Universitat Internacional de Catalunya*

*Introduction:* It has been demonstrated that there is a positive correlation between the frequency of traumatic injuries of incisors with class II malocclusion, increased overjet and lip incompetence. For this reason early treatment of this type of malocclusion is recommended for preventing dental lesions and sequelae in children who have these characteristics.

There are different therapeutic options for early treatment of increased overjet. Among these we will find direct tracks of composite for class II occlusion, which are simple to carry out and economic. They increase the vertical dimension, improve occlusion while allowing lateral and protrusive movements, favoring proper development of both jaws and the structures of the stomatognathic system.

*Case report:* Male patient aged 2 years and 8 months who presented at the department of pediatric dentistry of the University Dental Clinic of the International University of Catalonia with traumatic injury in the anterior region. After the intra- and extraoral examination and once the pertinent x-rays had been taken, intrusion of 5.1 was diagnosed. It was also observed that the patient had an overjet of 5 mm and class II canines.

We decided to wait for the spontaneous repositioning of the tooth because the apex was vestibular to the permanent tooth germ. Exodontia was carried out of 5.1 because an abscess with ectopic re-eruption was observed. It was proposed that the overjet should also be treated in order to reduce the risk of another traumatic injury or dental lesion.

Six months later, according to what was proposed during the previous visit, selected carving was carried out of the lower canines and direct composite tracks were placed in order to solve the class II of the primary first molars, as the patient had increased overjet, a narrow maxilla, class II canines and speech problems.

*Follow-up:* After a period of 8 months, an overjet was observed of 2.5 mm with a transverse increase in the jaws and speech improvement. The patient is currently having check-ups every two months.

*Conclusion:* Early treatment of increased overjet is recommended in order to avoid trauma in the anterior region and possible sequelae. Direct composite tracks

are a therapeutic alternative that have certain advantages such as: limited cooperation required from patients, ease of the different mandibular movements and great satisfaction on the part of parents.

#### 5. RAPID EXPANSION OF THE MAXILLA AND CORRECTION OF THE UPPER MIDLINE.

**Garcovich D, Gandía J, Adobes M**

*Universidad CEU-UCH de Valencia*

*Introduction:* Many patients with transverse compression of the upper jaw also have a deviation of the upper midline because of dental reasons.

*Objectives:* To present a simple method for centering the upper midline automatically.

*Materials and methods:* After the rapid expansion of the upper jaw by means of disjunction, a larger central diastema is created between the upper central incisors. This diastema is managed by means of a differential anchor control of both half-arches and the deviation of the upper midline is in this way centered without the need for brackets.

*Conclusions:* This method for differential control by anchoring both half-arches of the upper jaw is of great help to clinicians in their daily practice as it improves the prognosis of malocclusion for patients.

#### 6. CLINICAL AND DENTAL MANIFESTATIONS OF MARFAN SYNDROME IN CHILD PATIENTS

**Cavero D, Calderón S, González Y, Boj JR**

*Universidad de Carabobo, Venezuela. Universitat de Barcelona*

*Introduction:* Marfan syndrome is a dominant autosomal disturbance involving fibrillin protein. The incidence rate of this disorder is between 1 per 5.000 – 10.000 births. The diagnosis of Marfan syndrome is based on a general pattern of skeletal, cardiovascular and ocular malformations. Unlike other genetic problems, intelligence quotient is not affected.

*Objectives:* To determine the clinical and dental characteristics of a female, school-age patient with Marfan Syndrome, to indicate the treatment plan and the special considerations for this type of patient.

*Material and method:* With regard to the physical examination, we observed: macrocephaly, asymmetry of the ears and large outer ears, dolichofacial patterns, straight profile, muscle hypotonia, arachnodactyly, dolichostenomelia and spinal scoliosis. The oral examination revealed, arched palate, no caries, good oral hygiene, bilateral posterior crossbite and anterosuperior overcrowding. The treatment plan included prevention and orthodontia. The need for antimicrobial prophylaxis for invasive treatment is dentally relevant.

*Conclusions:* Pediatric dentists should be aware of the clinical characteristics of Marfan syndrome as well

as the oral repercussions. Preventative guidelines should be established and the risk of bacterial endocarditis taken into account. With regard to dental disorders associated with the case presented, the collapse of the maxilla should be highlighted. This is a special characteristic of the syndrome that leads to bilateral posterior cross-bite and anterosuperior overcrowding. This makes orthodontic treatment necessary in order to improve the quality of life and self-esteem of patients.

## 7. DENTAL TREATMENT OF A CHILD PATIENT WITH NOONAN SYNDROME

**Gavara MJ, Cuadros C, Guinot F, Martínez P, Lorente AI**

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**Introduction:** Noonan syndrome is a hereditary congenital defect of autosomal dominant inheritance that affects chromosomes 12q24, and which is caused by the mutation of different genes. Clinically, it is characterized by facial disorders, low stature and heart defects. The children with Noonan syndrome often have health problems, although there are no specific oral characteristics.

**Case report:** Male patient, 9 years and 10 months, diagnosed with Noonan syndrome, who was referred to the department of Pediatric Dentistry of the International University of Catalonia. The medication the patient had been prescribed consisted of antipsychotic and psychostimulant drugs because of hyperactivity.

After the clinical and radiological examination, rampant caries was diagnosed. During his first visit "definitely negative" behavior was observed using the Frankl scale. After using suitable behavior management techniques, the patient acquired a cooperative attitude over short time periods, and the treatment could be carried out more effectively using conservative techniques, pulp therapy, exodontia, a space maintainer and fluoridation.

**Follow-up:** After the treatment, the patient attended the dental clinic of the International University of Catalonia every 6 months for clinical and radiographic examination, bacterial control, oral hygiene techniques and the application of fluoride varnish. After a 24 month follow-up the permanent dentition that had erupted was disease-free. The family continues to follow the instructions that were given on hygiene and diet.

**Conclusion:** Treatment should be focused according to the individual needs of the patient with Noonan syndrome. Parental cooperation is necessary in order to maintain the oro-dental health of these children.

## 8. TO DETERMINE THE EFFECTIVENESS OF THE ROOT-ZX APEX LOCATOR IN PRIMARY TEETH

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*Universidad Autónoma de Baja California. México*

**Introduction:** Pulp treatment is becoming increasingly more common in pediatric patients. For this reason it should be carried out in as short a time as possible using instruments such as the Root-ZX apex locators for canals in pulpectomies. Ghaemmaghami S, carried out a study in children that was aimed at determining canal length with the Root-ZX apex locator in primary incisors. Using the Root-ZX apex locator, it was found that out of 150 in vivo incisors, 65% of the canals had a mean length that was the same as the mean in vitro length.

**Objective:** To determine the effectiveness of using the Root-ZX apex locator in primary teeth.

**Materials and method:** An experimental study was carried out in which 48 primary ducts were treated with pulpectomies. The Root-ZX apex locator and R-flex files were used to measure the canals radiographically. After this a comparison was made between the measurement obtained with the Root-ZX and the duct radiograph taken with the file. A frequency analysis was carried out with the data.

**Results:** A total of 48 primary ducts were examined in vivo that included 20 incisors and 28 molars. The Root-ZX locator was effective in 75% of cases.

**Conclusion:** The Root-ZX root locator was effective in 75% of the primary teeth

## 9. TALON CUSP: A CASE REPORT

**Velasco JA, Granados S, Riobobos MF**  
*UAX*

**Introduction:** Talon cusp is a dental anomaly that manifests as an extra cusp made up of enamel and dentin that may extend into the pulp tissue.

**Epidemiology:** Predominantly in the Mongolian race with a prevalence of 0.06%-8% with no sex predilection.

**Etiopathogeny:** multifactorial, possible hereditary component, genetic causes, environmental or traumatic factors. It occurs in the morphodifferentiation stage.

**Location:** in the permanent dentition it is more frequent in upper lateral incisors. In the primary dentition it is more common in the upper central incisors. According to Hattab (1966) they are classified as:

Type 1: Talon: well-defined cusp on the palatal surface of anterior primary and/or permanent teeth.

Type 2: Semitalon: cusp of 1 mm or more.

Type 3: Trace talon: conical, bifid or tubercle-like

**Complications:** accumulation of plaque, caries risk, pulp exposure, accidental fracture, occlusal interference, phonetic problems, aesthetic problems.

**Treatment:** This depends on size, shape and the tooth affected. Small asymptomatic talons do not require treatment. If the fissures do not have caries they can be sealed. If caries appear restoration treatment should be carried out. If there is occlusal interference a progressive and complete reduction of the cusp should be carried out, and root canal treatment carried out when needed.

**Case report:** 7 year-old patient, of Caucasian race, with no family history of relevance, with Type 1 talon

cuspid in the palatal surface of 2.1. As the patient had Angle Class II malocclusion and increased overjet, there was no occlusal interference. Treatment was preventative until permanent stable occlusion was achieved and until the evaluation of orthodontic treatment.

## 10. TREATMENT FOR A PATIENT WITH SUPERNUMERARY TEETH

**Abadía MT, Espí M, Bartolomé B**  
*Universidad Europea de Madrid*

*Introduction:* Supernumerary teeth are a dental anomaly and they increase the normal number of teeth in the dental arches. There are different theories regarding the etiology but no cause has been determined.

Only 0.3-0.8% of the population with primary teeth has supernumerary teeth, and these may be bilateral in 12-23% of cases. They appear more commonly in male than in female patients.

*Materials and methods:* A literature search was carried out using various electronic databases with the keywords "supernumerary teeth" "supernumerary deciduous teeth".

The case will be presented of a male patient who attended the European University of Madrid seeking treatment. The radiological examination revealed various supernumerary teeth and several treatment alternatives were therefore considered.

*Objectives:* To assess the presence of supernumerary teeth and to present a treatment alternative for those patients who have this pathology.

*Conclusions:* Supernumerary teeth are relatively frequent. They tend to be discovered by pediatric dentists who should therefore be familiar with their clinical management.

## 11. MULTIPLE AGENESIS. A CASE REPORT

**Arner C, De la Hoz A, Barros JJ, Costa F**  
*Universidad Europea de Madrid*

*Introduction:* Agenesis is understood to be a failure of a tooth germ to develop. The etiology of this anomaly is multifactorial, and environmental, genetic and phylogenetic factors intervene.

In the permanent dentition the prevalence varies between 3.5 to 6.5% of the normal population and it is more common than in the primary dentition. Agenesis is most often isolated. With regard to sex, women are more affected than men with a ratio of 3:2. And, excluding third molars, the teeth that most commonly are missing are: upper lateral incisors, lower second premolars, upper second premolars and lower central incisors.

*Materials and methods:* A search was carried out in PubMed using the keywords "tooth development", "tooth agenesis", "hypodontia", "anodontia".

The case is presented of an eight year-old patient who attended the Masters degree in Pediatric Dentistry

of the European University of Madrid due to "caries". On carrying out a clinical and radiographic examination it was observed that she was missing upper lateral incisors together with lower second premolars and two lower incisors. Given this pathology we decided to contact her pediatrician and to carry out a genetic study in order to find out if there could be an association with a systemic condition.

*Objectives:* The objective of this poster is to study multiple agenesis and the possible genetic etiology and association with different syndromes.

*Conclusions:* Detecting dental agenesis is important in order to be able to take therapeutic decisions and, if multiple, rule out an association with different syndromes.

## 12. NATAL AND CONNATAL TEETH

**Martínez N**  
*Hospital San Rafael*

*Introduction:* Natal and connatal teeth are encompassed within the eruption anomalies that take place in the neonatal stage of a child. Both terms refer to the same pathology, with the chronology of eruption being the only difference. Natal teeth are present on birth and connatal teeth erupt during the first 30 days of life.

It is one of the pathologies that lead to a visit to a pediatric dentist and it is an alarming situation for many parents.

*Objective:* In this poster we analyze the etiology and prevalence, the histological characteristics and the most common locations. We aim to give an update on this type of pathology, giving the different types of presentation, as well as its prognosis.

*Materials:* The habitual materials are used for carrying out a dental extraction: anesthesia, forceps, curette and gauze.

A search of the literature was carried out using Medline and PubMed.

*Methods:* Two clinical cases are presented with two treatment options.

In order to carry out a literature search, the keywords used were: natal tooth, neonatal tooth and newborn baby pathology.

*Conclusions:* The different treatment options are put forward, two case reports are presented and a series of guidelines to help pediatric dentists are given, so that treatment can be carried out successfully in the dental office.

## 13. AGENESIS IN PEDIATRIC DENTISTRY: A CASE REPORT

**Álvarez A**

*Introduction:* Many studies have been carried out on dental agenesis by different authors and dentistry professionals. Dental agenesis is a term used for describing

the absence of one or more deciduous or permanent teeth. They are the most common craniofacial malformations and they can vary from just one tooth to all the dentition. Despite this, very little is known about the genetic defect of this complicated condition.

Most authors report that agenesis is around 6-7%. In Spain it is situated at around 6% and within the orthodontic population it is also around 6%.

*Objectives:*

a) To study the different types of treatment for multiple agenesis, concentrating on our 12 year-old patient who is in the second phase of the mixed dentition.

b) To analyze the possible causes of multiple agenesis.

*Material and method:* An extensive review of the literature was carried out of scientific articles on the subject of dental agenesis. A study was carried out of a particular case on the Pediatric Dentistry Masters course.

*Results:* The results will be analyzed and the case study will be compared with the information found in the literature.

*Conclusions:* There are many studies on dental agenesis and cases are frequently seen in the dental office. There is no single cause of dental agenesis and it is closely related to genetic factors.

The treatment options basically consist in replacing the absent tooth in the permanent dentition or to maintaining the space in deciduous dentition until the permanent dentition erupts.

## INVESTIGATION STUDIES

### 14. DIET AND HYGIENE. THEIR INFLUENCE IN CHILDHOOD CARIES

**Serna C, Pérez V, Poza A, Ruiz C, Romero M**

*Universidad Rey Juan Carlos. Madrid*

*Introduction:* Modernizing society at both a cultural and sociological level has led to changes in dietary habits that mainly affect the child population. This, added to a lack of hygiene, has contributed to dental caries being the disease that most affects the child population.

*Objectives:* To observe the relationship between dietary and hygiene habits, and caries rate, in the child population.

*Material and methods:* Some 30 forms were analyzed that provided the weekly diet and daily hygiene record of children aged between 3 and 12 years, and the results of their orodental examination. A statistical correlation was made with all the data obtained in the sample on sugary foods, caries index in the permanent (DFT) and primary (dft) dentition and the number of times teeth were brushed per day.

*Results and discussion:* On the one hand it was found that children who did not carry out proper hygiene after

being exposed to sugary food had a greater caries rate than those who did. On the other, it was observed that caries risk was greater when sugary food was consumed between meals compared to just at main meal times.

*Conclusions:* Caries rate is very closely related with the moment sugary foods are consumed (main meals and between meals) and with the moment and frequency with which the children clean their teeth.

### 15. WHY DON'T CHILDREN GO TO THE DENTIST?

**Carrillo M, Lara A, Crego A, Del Valle A, Romero M**

*Universidad Rey Juan Carlos. Madrid*

*Introduction:* Dental anxiety is a common problem among the child population. In addition, it has been found that children who are frightened to go to the dentist use dental care services less frequently, they avoid treatment and they tend not to cooperate during the consultation. Therefore, dental anxiety has been indicated as a factor that can affect oral health.

Therefore, the behavior of parents and their interaction with their children in relation to dental treatment is essential. There is a clear association between parents being over protective and child anxiety. If parents limit their child's exposure to a wide range of experiences, they will transmit a feeling that the world is safe, but their children will be less able to face up to situations and challenges.

*Objectives:* To study how a series of factors (parent-child interaction, dental fear, etc) influences the avoidance of dental treatment.

*Material and methods:* A total of 185 children participated in the study (55.2% girls, mean age: 12.37 years), 87 fathers (mean age: 45 years) and 95 mothers (mean age: 43.2 years). All the participants completed a questionnaire that included dental anxiety measures (MDAS and DQS), in addition, data on the frequency of check-ups of the child, mother and father were collected, with an item adapted from the behavior component of the IDAF-4C ("I try to convince my parents to delay the appointment or not to take me to the dentist"). In order to analyze the data, basic descriptions were used, bivariate correlations (Pearson's r) and multiple linear regression analysis.

*Results:* A statistically significant relationship was found between dental avoidance and fear in the child, negative feelings on dental treatment and the periodic checkup habits of the parents. On the other hand, parental fear did not seem to have an influence. The children who tried to convince their parents to not go to the dentist had fewer dental visits and a greater level of fear.

*Conclusions:* A child's fear is key to dental visits. In addition, it appears that this influences parental decision making, as the children with greater anxiety are taken less frequently to the dentist. With this attitude of over-protection, a child's ability to face situations is turned into one of avoidance.

## 16. CORRELATION BETWEEN POSTERIOR CROSSBITE AND FOOT TYPE

**Barra MJ, Barra M, Cuadrado G, Pinto A, Ribas D**

*Introduction:* The relationship between postural disorders and, on the one hand, malocclusions and on the other orthopodologic pathologies, is clear. Many studies conclude by observing that a disorder at any level of the lower limbs can lead to another at a different level of the organism. However, only some studies directly relate disorders at an oral or dental level with disorders of the feet Valentino: (1991, 2002), Ferrario (1996), Machado (2009), Cuccia (2010).

*Objective:* To find out if there is a relationship between posterior crossbite and types of feet in the child population.

*Material and methods:* The global sample consisted of 26 children, 18 males and 8 females. Of these, 15 were in main school with a mean age of 6 years, and 11 were pre-schoolers with a mean age of 5 years. Each child underwent a foot and dental examination. During the first examination, which was carried out by an examiner with a podiatry degree, the type of foot was studied according to the Arch index and according to the calcaneal clinical axis. And in the second, which was carried out by an examiner with a dental degree, the presence or not of posterior crossbite was established. Each type of measurement was carried out with a specific instrument, and the measurements of the footprints were analyzed with the AutoCAD® program.

*Results:* When the disorders were statistically related, and the results of the contingency tables compared after using the contingency coefficient and phi, the results had a very low significance level. However, this could be due to the reduced number of cases. The percentage of children with crossbite was low (19.2%). According to the Arch Index, 80.8% of the children had some type of foot pathology. According to the calcaneal clinical axis only 7.7% had a disorder. The results gave a phi coefficient of (-0.257) regarding foot disorders according to the Arch index, and transverse malocclusion. However, the disorders according to the calcaneal clinical axis and crossbite were (+ 0.225).

*Conclusions:* Based on the results obtained, it can be said that foot type disorders, according to the arch index, do not tend to be associated with transverse occlusal abnormalities of the posterior crossbite type. But a disorder of the foot type, according to the calcaneal clinical axis, does tend to be associated.

## 17. THE INFLUENCE OF DENTAL TENDENCIES IN ADOLESCENTS: INTERINCISAL DIASTEMA

**Hernández L, López N, Marcianes M, Ruiz C, Romero M**

*Universidad Rey Juan Carlos. Madrid*

*Introduction:* Fashion has always been for teenagers a way of communication. Dentistry, and more specifi-

cally dental aesthetics, has been involved in these trends, such as canine elongation with composite resin or dental piercing. Recently fashion been introduced into orthodontics and pediatric dentistry by individuals sporting an interincisal diastema with great media presence and who represent a reference point at increasingly younger ages for teenagers.

*Objectives:*

1. To determine the influence of dental aesthetics in adolescents.
2. To evaluate the social perception of the interincisal diastema.

*Material and methods:* A survey was carried out on dental aesthetics in adolescents aged 12 to 16 years. The opinions of adolescents were collected regarding a photo of two people, one male and one female with and without an interincisal diastema.

*Results and discussion:* Most of the teenagers in the survey considered that an interincisal diastema was not fashionable, but there was a difference in results according to sex. There were a certain percent of girls who acknowledged this as fashionable in today's society. A high percentage of those surveyed did not want to have a diastema, nor would they go to the dentist to have one carried out, as they felt it was aesthetically inappropriate.

*Conclusions:*

1. Adolescents are greatly influenced by dental aesthetics.
2. Most adolescents consider that an interincisal diastema is not fashionable in current society and they would not undergo dental treatment in order to have one.

## 18. COMPARATIVE STUDY OF CHILDREN'S BOOKS PUBLISHED ON DENTAL SUBJECTS

**Brau I, Camps O, Miras M, Pascual M, Roura M**  
*Universitat de Barcelona*

*Introduction:* The image that society has of dentists varies according to the information received, personal experiences, comments by people around us and our role as it is seen in television adverts, cartoons, books, television sketches, comics and even films.

The way our work is portrayed in these formats has changed over time, our image has evolved and has generally been improved. The perception of the dentists and the importance of orodental health in art, literature and culture reflects the growth of the profession and changes in habits within our society.

*Objectives:* An effort has been made to reduce the anxiety that a child may have on going to an unknown place, especially in younger patients or those with functional diversity such as autistic children, by familiarizing them in advance with different situations.

*Material and methods:* In this work we have carried out a study of stories with references to dentists, and that are aimed at children, in order to see their how useful they are in patient behavior management and in preparing for a visit. Previously published articles have

been reviewed and the content of the different books studied was classified using files.

*Conclusions:* Not always is the information transmitted in writing useful for dental education if analyzed, and we therefore should choose the books that work in our favor with regard to reducing patient fear before an appointment. We have concentrated on books but feel it is necessary to widen our study to other formats such as cartoons and children's films in order to define for our patients how they should see "going to the dentist".

## 19. PEDIATRIC DENTISTRY GUIDELINES FOR DEALING WITH ADOPTED CHINESE GIRLS

**Granados S, Velasco JA, Riobos MF, Cattaneo T, Caravallo L**  
UAX

*Introduction:* International child adoption, in this case of girls from China, represents a special group that requires dentists, pediatricians and adoptive families to investigate deeply and acquire specific knowledge.

*Objective:* Up until now Spain has been one of the countries with the greatest number of adoptions from China, followed by the United States. Although over recent years this situation is changing and the number is reducing, we feel that it is necessary to remember that they are a special care group. Their new surroundings are completely different to those of their origin, and the importance of close collaboration between pediatricians and dentists should not be overlooked.

*Material and methods:* These are patients with no known medical and dental history before the adoption, and much relevant information is lost with regard to personal and family medical histories.

*Conclusions:* The most common disorders of this group of patients will be reviewed, and we will specifically evaluate a plan of action for pediatric dentists from the point of view of behavior management, prevention, restoration and orthodontics.

## 20. EXPANDING GIANT CELLS LESIONS IN THE UPPER AND LOWER JAW

**Lázaro M, Plaza R, Gómez E, Domínguez G, Planells P**

*Título Propio de Especialista en Atención Odontológica Integrada en el Niño con Necesidades Especiales*

*Introduction:* Giant cell lesions cover a wide group of pathological processes. Although histologically they are very similar, the differential diagnosis should be made using radiology and clinical examination. These include central and peripheral giant cell granuloma, cherubism, giant cell tumors, and brown tumors of hyperparathyroidism.

Brown tumors and central giant cell granulomas are destructive lesions of the mandible or maxilla that, when large, will expand to the bone cortex, sometimes

causing displacement of the teeth and even rhizolysis. The first process is more common in women, over the age of 40 and in patients with hyperparathyroidism and chronic renal disease.

Treatment is pharmacological and surgical. The second is more common in women under the age of 30, in the anterior area of the mandible and treatment is surgical or non-surgical using intralesional corticosteroids, subcutaneous calcitonin or interferon alpha.

*Objectives:* To familiarize pediatric dentists with these pathologies as on occasions they are the first to see these patients. They are the ones who make a tentative diagnosis and who then make referrals for confirmation and treatment.

*Material and methods:* These include clinical cases treated by the Department of Pediatric Maxillofacial Surgery at the University Hospital of La Paz and a review of the literature using the databases of Medline and PubMed from 2000 to 2012. The keywords used were giant cell granuloma, brown tumor, maxillary, jaw.

*Conclusions:* Pediatric dentists should be familiar with these lesions, in order to be able to carry out an early diagnosis, and to be able to save most of the structure during the treatment.

## 21. PREVALENCE OF THE POSITION OF THE CANINE TOOTH GERM IN THE MIXED DENTITION

**Castellanos L, Verdugo I, Zamudio M**  
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*Introduction:* Eruption-related pathologies are well-known and they include various types of local or systemic problems that have repercussions on eruption physiology and which can alter the correct chronology or sequence. An early diagnosis of the position of the canine tooth germ, will help us to avoid the consequences of a malposition: root resorption of the lateral incisor, ankylosis, malocclusion or idiopathic resorption.

*Objectives:* To determine the prevalence of the position of the canine tooth germ in the mixed dentition.

*Material and methods:* An observational descriptive cross-sectional study was carried out in order to find the prevalence of the position of the canine tooth germ, which was obtained by means of radiographic panoramic tracings based on the following criteria (Erickson and Kuroi modified); angle of the canine to the midline (AC), vertical distance from the occlusal plane to the lateral incisor root (VD), position of the canine cusp (CP), anteroposterior position of the apex of the canine (AP), all in grades (1,2,3 and 4), obtained from the clinical records of active patients in the orthodontic and orthopedic clinic of the pediatric dentistry specialty in Tijuana, Baja California.

*Conclusions:* A total of 14 canines were examined, of which 10 belonged to females and 4 to males. The AC prevalence of grade 1 was 71%, grade 2 VD was 28%, grade 1 PC was 100% and grade 2 AP was 57%.

## 22. MODIFICATION OF ORAL PH THROUGH DRINKING ACIDIC DRINKS

**García A, Torres M, Zamudio A, Verdugo I, Fregoso C**

*Universidad Autónoma de Baja California. México*

*Introduction:* The consumption of acidic drinks leads to a change in oral pH and, if consumed often, to erosion of the enamel. Lom S 2008 found that children who consumed acidic drinks were 1.75 more likely to develop caries. Objective: To demonstrate the level of significance of changes in oral pH due to the use of acidic drinks in children in schools in Baja California, Mexico.

*Materials and methods:* This was an experimental, cross-sectional, prospective study that included a sample of 100 children of both sexes who met the inclusion criteria and who were aged 7 to 12 years. The materials used consisted of reactive strips by pHion Diagnostic, acidic drinks consumed in the schools (Coca cola, Jumex, Water), glasses, water, toothpaste and toothbrushes. The children were divided into three groups. The first group was given Coca cola, the second Peach Jumex, and the third group which was the control group, was given water. Samples were taken from each child, a basal sample and a second sample, ten minutes after having the chosen drink.

*Results:* The basal pH mean was 6.68, Coca cola led to a reduction of 1.8, but Jumex caused a reduction of 1.5, despite both having a mean pH of 5.03.

*Conclusions:* Jumex and Coca Cola led to a significant reduction in the children's pH, as they were under the 5.5 value considered critical for enamel. As this favors demineralization, they should not be consumed regularly.

## 23. DOES THE PADI PEDIATRIC DENTAL ASSISTANCE PROGRAM PROVIDE FINANCIAL SHELTER IN TIMES OF CRISIS?

**Bermúdez Z, Fernández CM, San Martín L, Marchena L, Pérez E**

*Introduction:* Politicians consider dental care for the child population as something to be targeted because it represents great social advancement.

As from the beginning the child dental assistance programs that started in the Autonomous Communities led to considerable controversy, and they were firmly rejected by the professionals given the capitation form of payment and the pathology which, it was assumed, was going to swamp dental offices and make approved private centers unprofitable.

*Objective:* To find out how dentists have coped with this new situation, overcoming their reservations, and adapting to the new circumstances. The system is now being sought by professionals with private clinics as an economic shelter for these times of crisis given the reduction in the demand for private care.

*Material and methods:* The data provided by the Junta de Andalucía on Dental Care in the province of

Jaén between the years 2004/10. Clinical data for 3.907 patients belonging to the child dental care program and to 39.237 private patients in the DENFORT dental clinic in Jaén.

*Results:* The centers providing care in the province have increased by 131% between 2004 and 2010. Public centers have increased by only 38% and approved private centers by 170%. In the clinic used as a reference the capitation payments for dental care have increased by 269% between 2004 and 2010, and their share of the clinic's income has increased from 8.34% to 27.11%.

*Discussion:* The weight of child dental care is born by these approved private clinics without which providing this attention would be impossible. The increase in the number of approved centers that provide this care is due to the capitation payments not being as absurd as first thought given that they represent a fixed income that helps to support the clinics. These clinics have been affected by the reduction in income suffered by the profession because of the crisis, the growing number of dentists, and the growing competition in the sector because of dental franchises appearing in the market. The reduction in income has led to a reduction in costs which makes capitation payment more profitable.

*Conclusion:* This dental care program does provide a financial shelter for this professional group.

## 24. EDUCATIONAL COOPERATION ON THE MASTERS DEGREE IN PEDIATRIC DENTISTRY IN SEVILLE WITH THE DENTAL VOLUNTEER FOR ISRAEL FOUNDATION

**Ribas D, Mendoza A, Caleza C, Biedma M**

*Universidad de Sevilla*

*Introduction:* The NGO Dental Volunteer for Israel (DVI) has been providing since 1980 free dental care to children with no means of support in the city of Jerusalem regardless of their ethnic or religious origin. For this they have the invaluable help of volunteer dentists from all over the world who go the Israeli capital and provide their services in a totally unselfish manner.

DVI was founded by a Jewish microbiologist and holocaust survivor, Trudi Birger, who dedicated her life to the wellbeing of the most needy. The medical side of the organization is currently directed by pediatric dentists of the Hebrew University of Jerusalem (Hadassah).

The Pediatric Dentistry Master's Degree course at the University of Seville has reached an agreement with this organization so that postgraduate students can gain work experience with these needy children in the city of Jerusalem and carry out many types of treatment.

Main objective behind this project of cooperation is to complement the academic training received by students by discovering new sociocultural realities beyond the traditional university environment.

*Material and methods:* During the present academic year 2011/2012 two postgraduate students and one professor from the pediatric dentistry masters degree travelled to the Israeli capital to begin this cooperation.



After an initial session to go over the theoretic principles, the practical side was planned which included an initial part on prevention and healthcare promotion, and a second part that was focused on the treatment of child patients.

**Results:** During the two weeks that the cooperation lasted, a total of ten patients were seen per day per person. A range of pediatric dentistry treatments were carried out, starting with the teaching of hygiene, sealants were applied to fissures, fillings were carried out of primary and permanent teeth, and pulp treatment for primary teeth was carried out (pulpotomies with ferric sulfate and pulpectomies with resorbable paste.) The root canal treatment of permanent teeth and the surgical part was carried out by DVI specialists.

**Conclusions:** With this type of initiative postgraduate training can be supplemented and the social reality of needy children can be brought closer to students studying a Masters degree in Pediatric Dentistry.

## 25. IS THE CHILD DENTAL ASSISTANCE (PADI) ECONOMICALLY WORTHWHILE?

**Fernández CM, San Martín L, Marchena L, Bermúdez Z, Pérez E**

**Introduction:** The pediatric dental assistance program (PADI) that is being applied in the autonomous communities with its capitation-type payment has led to great controversy in the profession because doubt has been cast on the profitability of its application.

**Methodology:** A financial analysis has been made of each type of treatment analyzing: the materials used, time in the dental chair and time used by the operator.

**Results:** The activities that are preventative represent 86.3% of basic dental care.

The average annual cost of basic dental care given to each of the PADA patients was 25.79 €

The average annual profitability of special treatments was 1.01 €, and for each PADA patient it was 10.79 €

**Discussion:** It is impossible for capitation-type payment for pediatric dental care to be profitable if good orodental health education has not been designed and supported. The participation of dental hygienists within a clinic providing PADA services is essential in order to achieve proper profitability, and the difference regarding preventative activities and health education being carried out by a hygienist to a dentists represents a extra cost of 4.774 €/per PADA patient.

**Conclusions:** The PADA system is profitable on its own, given that the capitation payment system and special treatments represents an increase in profitability.

Dental hygienists make the orodental health program profitable.

## 26. A TEACHING PROJECT ON CARVING CHILDREN'S TEETH OUT OF BONE. EVALUATION BY STUDENTS

**Poza A, Del Valle A, Carrillo M, Cordobés M, Romero M**

*Área de Odontopediatría. Universidad Rey Juan Carlos*

**Introduction:** After devising and describing this project, the next step was to evaluate it according to the undergraduate students that participated in it.

**Objectives:**

- To assess how much morphology was learnt.
- To assess to what degree skills increased with regard to the handling of rotary instruments.
- To assess how students would view including this system in their degree studies.

**Material and methods:** A questionnaire was carried out of nine undergraduate students of pediatric dentistry who participated in an innovative teaching project based on the carving of children's teeth out of cylinders of bovine diaphyseal bone which is to be covered in this Congress by an oral communication by Dr. del Valle. The questionnaire assessed the system, morphological knowledge obtained, and the skills acquired with rotary instruments.

**Conclusions:** Learning morphology on a 1/1 scale, with a material that has a hardness that is close to that of dental tissue and with rotary instruments, was assessed by students as "excellent" or "very good".

All the students were of the opinion that their skills with rotary instruments had considerably improved.

They all felt that their knowledge of dental morphology had increased considerably.

The students unanimously felt that their capacity for reproducing a tooth that was very damaged had increased considerably.

Most (67%) of them considered that the system could totally substitute, or at least to a large extent, learning with drawings and soap. The remaining 33% felt it was a way of complementing the systems mentioned.

## 27. PREVALENCE OF MOLAR-INCISOR HYPOMINERALIZATION IN CHILDREN IN TIJUANA, MEXICO

**Martín G, Verdugo IA, Zamudio MA, Soto M**

*Universidad Autónoma de Baja California. México*

**Introduction:** There are very few investigations that determine the prevalence of Molar-Incisor Hypomineralization. In studies carried out in Europe a prevalence was identified of between 3.6 and 25%, while on the American Continent there is little information related to the prevalence of this condition. MIH is defined as hypomineralization with a systemic origin that affects one or all permanent primary molars and it is associated frequently with permanent incisors.

**Objective:** To identify the prevalence of MIH in children in Tijuana, Baja California, Mexico.

**Material and methods:** An observational, cross-sectional prospective study was carried out of children by observing their central incisors, lateral permanent teeth and first permanent molar. The MIH register was carried out using gloves, Led light, tongue depressors, gauze and air pumps. MIH was classified when there was at least one affected molar, with or without the association of a permanent incisor. A frequency analysis was carried out.

*Results:* A total of 357 children were examined who were aged 6 to 12 years. Of these 168 (47.06%) were male and 189 (52.94%) were female. A total of 13 (3.64%) had MIH. Of these 7(53.85%) were male and 6 (46.15%) were female.

*Conclusions:* The prevalence of hypomineralization in children in Tijuana BC, Mexico who were examined was 3.64%.

## 28. RANGE OF PRESENCE IN MONTHS OF PRIMARY TEETH IN TIJUANA, MEXICO

**García C, Zamudio M, Verdugo I, Fregoso C**  
*Universidad Autónoma de Baja California. México*

*Introduction:* The rapid growth of the population has led to considerable cultural and ecological changes, and new opportunities for adapting have been created. Over recent years rapid dental development has been observed in human populations, in addition to genetic responses to diet and disease, factors that can disturb the development of dental structures and interfere in the dental eruption process. Logan and Kronfeld published an eruption table for primary and permanent teeth. The data on the presence of primary dentition has not been studied in relation to the duration in months among the Mexican population.

*Objective:* To determine the range of presence in months of a sample of children in Tijuana, Lower California, Mexico.

*Material and methods:* The sample for carrying out this descriptive cross-sectional study was made up of 100 children, 50 boys and 50 girls, who were aged 5 to 8 years, and who were examined in different primary schools in Tijuana.

*Results:* The range regarding primary molars presence was  $60 \pm 105$  months, which was the same as that proposed by Logan and Kronfeld. It was concluded that the presence in months in a sample of 100 children in Tijuana, Lower California Mexico ranged from  $60 \pm 105$  months.

## 29. ECTODERMAL DYSPLASIA. ORAL REHABILITATION. A CASE REPORT

**Pérez V, Ruiz C, Mejía J, Serna C, Romero M**  
*Universidad Rey Juan Carlos. Madrid*

*Introduction:* Ectodermal dysplasia is a congenital type disease that affects the epidermis and at least one other ectodermal structure. The most common ectodermal dysplasia is hypohidrotic or anhidrotic that appears with a near total absence of sweat glands.

Multiple agenesis and conical teeth will be found in both dentitions, which make oral rehabilitation more difficult.

*Case report:* The patient was aged two years and seven months and had been diagnosed with anhidrotic ectodermal dysplasia. He presented with fine scanty

hair, no eyebrows or eyelashes and an absence of sweat. After an intraoral examination only conical primary upper central incisors were observed. A radiologic examination revealed two upper tooth germs and two lower ones.

Treatment consisted of placing a complete removable upper and lower acrylic prosthesis. Osseointegrated implants will be evaluated later on. After a two year follow-up the upper tooth germs and one lower tooth germ have erupted and the patient's adaptation to the prosthesis has been satisfactory.

*Discussion:* The total or partial absence of teeth in patients with ectodermal dysplasia leads to psychosocial adaptation problems, and dietary and speech deficiencies.

In these cases the controversy lies in placing osseointegrated implants during early childhood, or adapting complete acrylic prostheses, or a combination of both treatments.

*Conclusions:*

1. Patients with ectodermal dysplasia should receive prosthodontic treatment from an early age, and treatment with osseointegrated implants should be evaluated before they finish growing.

2. The quality of life of these patients improves considerably after treatment.

## REVIEW OF THE LITERATURE

### 30. AMELOGENESIS IMPERFECTA AND OPEN BITE. A CASE REPORT

**Bermúdez M, Chung I, Bartolomé B, Albero G, Vilar C**

*Universidad Europea de Madrid*

*Introduction:* Amelogenesis imperfecta (AI) is a relatively rare group of hereditary disturbances defined as the abnormal formation of enamel.

The term amelogenesis imperfect is reserved for hereditary defects of the enamel that are not associated with defects in other parts of the body or other health problems.

AI enamel defects are very variable and include anomalies that are classed as hypoplasia, hypomaturation and hypocalcification.

It can be combined with abnormal eruption of the teeth, dental agenesis, open bite, pulp calcifications, dentin dysplasia, root and crown resorption, hypercementosis or taurodontism.

*Objectives:* The aim of this case report is to emphasize the importance of diagnosis and multidisciplinary treatment, in order to reestablish masticatory function, dental aesthetics, facial harmony and to avoid overtreatment in some cases.

*Materials and methods:*

—Review of the literature in PubMed, Medline with the following keywords: amelogenesis imperfecta, open bite, hereditary defects of the enamel.

—The case is presented of a boy aged 9 years who attended the policlinic of the European University in Madrid as a result of considerable dental sensitivity and aesthetic enamel defects.

During the examination general disorder of the enamel was observed and anterior open bite.

—Multidisciplinary treatment was considered in order to improve aesthetics, dental sensitivity and to correct orthodontic problems.

*Conclusions:* It is important to diagnose and treat patients with amelogenesis imperfecta at an early age, in order to improve their sensitivity problems, to avoid the appearance of anterior open bite and to favor a correct diet.

### 31. COMMUNICATION USING PICTOGRAMS IN CHILDREN WITH AUTISTIC SPECTRUM DISORDER

**García L, García V, Samarán C, Adanero A, Planells P**

*Universidad Complutense de Madrid*

*Introduction:* Autistic spectrum disturbances (ASD) are a group of development disabilities that are characterized by serious problems related to socialization, communication and behavioral problems. The particular characteristics make dental treatment and management of these children difficult, and establishing a protocol of systemic desensitization is necessary in order to familiarize these children with their surroundings. One of the techniques used for this are pictograms, a communication technique based on the exchange of symbols and images in order to show children with ASD to start communicating socially.

*Objectives:* To evaluate the use and efficiency of pictograms for improving the communication abilities of children with ASD during orthodontic treatment.

To present the different pictograms that can be used in the consultation room in order to establish communication with these children attending the Dental Faculty of the UCM.

*Material and methods:* A review of the literature was carried out using electronic databases with the keywords: autism, autistic spectrum disorder, PECS, picture communication, desensitization, treatment management.

Pictograms were put together based on the materials to be used and activities to be carried out during the dental treatment.

*Conclusions:* Pictograms can improve non-verbal communication in children with ASD, and some of them are even able to learn a spoken language.

The use of this system in the dental consultation room helps communication between the pediatric dentist and patients. And it allows, on some occasions, the necessary treatment to be carried out.

### 32. CHILD PATIENTS WITH SENSORY IMPAIRMENT

**Gallego A**

*Introduction:* The WHO estimates that 10% of the world population has some type of incapacity with different levels of severity, and that three quarters of this population do not receive dental care.

This group should be considered as being particularly needy, given that they are children with more pronounced oral disease, either because of their disability or because of other reasons that may be medical, economic, social or because they simply find carrying out proper oral hygiene difficult.

These pediatric patients require preventative dental and therapeutic treatment as an additional part of their care. However, it should be taken into account that their care in dental clinics is complex and that sometimes physical restriction techniques or even general anesthesia have to be used.

*Objectives:*

1. To identify the prevalence of oral pathology.
2. To find out how these patients should be managed in the dental office according to their incapacity.

*Material and methods:* In order to carry out this work the information published in books, magazines and articles on the subject over the last ten years was reviewed.

*Conclusions:* It is not enough to have just theoretic knowledge for treating children with impairments because having a personal aptitude is also necessary as is taking into account their special condition.

Within the dental office the atmosphere should be pleasant and relaxed as this will help to achieve greater levels of cooperation.

### 33. TYPE 1 NEUROFIBROMATOSIS

**Zuluaga OB, Martínez E, Del Barrio MP, Gómez E, Planells P**

*Universidad Complutense de Madrid*

*Introduction:* Type 1 neurofibromatosis is a group of diseases with a genetic origin that mainly affects the development and growth of nervous tissue.

There are three types of neurofibromatosis: type 1 (which is the most frequent) type 2, and Schwannomatosis, which is the most rare.

*Objectives:*

—To synthesize the basic information on the diagnosis and characteristics of neurofibromatosis 1.

—To describe the therapeutic protocols at an orodental level, using the presentation of a clinical case treated at the UCM.

*Material and methods:* A search of the literature was performed regarding neurofibromatosis, over the last ten years. Current protocols were reviewed, particularly those developed in the *Hospital Universitario de la Paz* in Madrid.

*Results:* Type 1 neurofibromatosis (von Recklinghausen disease) is the most frequent within this group of

diseases and it is caused by an anomaly of chromosome 17.

The clinical symptoms are very variable but coffee stains on the skin are characteristic, Lisch skin nodules (on the iris). Also common are skeletal disturbances, such as mandibular hypoplasia and an increase in the mandibular canal.

At an oral level, the increase in fungiform papillae on the tongue and the presence of isolated asymptomatic nodules are frequent.

*Conclusions:* Due to the great complexity and variability of the symptoms, multidisciplinary treatment is necessary. Problems related to learning and specific behavior give rise to understanding and management difficulties, and specialized therapists are needed for their care.

#### 34. USE OF BOTULINUM TOXIN-A IN SPECIAL PATIENTS

**Robles C, Robles M, Martínez MA, Valle A**

*Introduction:* Self-injurious behavior related to the oral cavity has been described in special patients due to a lack of coordination of the facial muscles. These injuries includes trauma to the soft tissues due to interpositioning between both arches, bruxism, etc. and they have been described in patients with facial paralysis, autism, epilepsy, mental retardation, as well as those with psycho-emotional disturbances. Botulinum toxin-A permits paralyzing facial muscles by means of a technique that is somewhat expensive but well-tolerated, safe and efficient. It allows an improvement in the degree of oral hygiene, bruxism, oral aperture, muscular spasticity as well as reducing self-inflicted lesions of the soft tissues.

*Objective:* Our objective was to carry out a revision of the literature on the success of Botulinum toxin-A in special patients.

*Material and methods:* We carried out a search in Medline using the PubMed search engine with the keywords: "Autism", "Bruxism" "Botulinum toxin-A" "Children" "Cerebral Palsy", "Dentistry", "Dental Treatment", "Dental Management", "Lip trauma", "Spasticity" "Self-injurious behaviour". Articles before 2002 were excluded.

*Conclusions:*

—Despite its high cost, a neuromuscular block using Botulinum toxin-A can be the treatment of choice for special patients with oral self-injurious behavior who fail to control their facial muscles.

—It is a safe technique that is well tolerated and effective.

—It improves muscular spasticity, the degree of oral aperture and hygiene, in addition to trauma to the soft tissues due to bites.

#### 35. CONTROVERSY REGARDING THE USE OF THE HAND-OVER MOUTH TECHNIQUE

**Castillo F, Volquez A, Sáez S, Cuadros C, Lorente AI**  
*Universitat Internacional de Catalunya*

*Introduction:* A basic objective within dental procedures, is that of getting children to adopt a correct attitude, using different techniques in order to improve behavior. One of the techniques described in the literature is that of "hand on mouth" (HOM), however this has led to much controversy among authors.

*Objective:* To carry out a revision of the literature on the effectiveness of the HOM technique, as well as on the opinion of dentists and parents.

*Material and methods:* A search of the literature was carried out based on the PubMed database with the following keywords: *Hand Over Mouth Exercise, behavior management techniques, dental anxiety, children*. The inclusion criteria were: publications from 2000 to date and in English. A review was made of 304 articles of which only 20 were selected.

*Conclusions:* Although various authors have classified HOM as an unacceptable technique, there are a lack of evidence-based studies to evaluate it. In addition, it has not been clearly accepted by either professionals or families and its use is limited.

#### 36. MANAGEMENT AND TREATMENT OF ANKYLOSIS IN PRIMARY MOLARS

**Villa A, Hajjar C, Sáez S, Cuadros C, Lorente AI**  
*Universitat Internacional de Catalunya*

*Introduction:* Dentoalveolar ankylosis can be defined as an anatomic fusion, either total or partial, of dentin or cement with alveolar bone. No specific protocols exist for treating ankylosis of the primary teeth as treatment will depend on various factors.

*Objectives:* To describe the possible treatment of ankylosis in primary teeth through a revision of the literature and to develop a possible action protocol.

*Material and methods:* An online search was made of the Pubmed database with the keywords: dental ankylosis, molar ankylosis, treatment primary dental ankylosis with the following criteria: studies in humans after the year 2000. A total of 451 articles were found, the titles and abstracts were evaluated, and 21 articles were chosen.

*Conclusions:* The treatment plan to be followed depends on: the age of the patient, the severity of the ankylosis and the development stage of the successor. Early diagnosis is important in order to start preventative measures and/or invasive measures, and in order to carry out a periodic follow-up of each case.

#### 37. DIAGNOSIS AND TREATMENT OF ODONTOGENIC MYXOMA: A REVISION OF THE LITERATURE

**Martínez-Lucas MA, Robles C, Robles M.**

*Introduction and objective:* Odontogenic Myxoma (OM) is an uncommon tumor affecting the teeth. It is generally benign, locally aggressive and asymptomatic,

and it is more common in women. It tends to remit. Its diagnosis is routine, although a different pathology may have been considered. Radiographically, a radiolucent image that is uni- or multilocular will appear, and carrying out a differential diagnosis with other lesions of the jaws is very important. The only reliable test for diagnosis is a biopsy although radiographic techniques can also be used such as orthopantomography and Computed Axial Tomography (CAT). Treatment depends on its extension.

Our objective was to expose the diagnosis and therapeutic treatment technique for OM by carrying out a revision of the literature.

*Material and methods:* We carried out a revision of the literature on OM and the articles published over the last ten years, using a Medline search with PubMed. The keywords were “Odontogenic Myxoma”, “Dental Treatment” and “Dental Diagnosis”.

*Conclusions:*

- OM is generally a benign tumor that is asymptomatic, rare and of dental origin.
- There is a high probability of relapse.
- It is routinely diagnosed during radiography, and confirmed by means of a biopsy.
- Treatment depends on how extended it is.

### **38. TREATMENT OF ANKYLOGLOSSIA: FRENECTOMY AND REHABILITATION WITH SPEECH THERAPY**

**Valle A, Robles C, Robles M**

*Introduction and objectives:* Ankyloglossia is a congenital anomaly consisting of a characteristic short lingual frenulum that restricts the movement of the tongue, creating problems such as difficulty with suckling, speaking impediments, bad oral hygiene and psychological disturbances. There are many studies on the problems that this anomaly causes regarding sucking in babies during breastfeeding, and we will concentrate this study on determining the influence of ankyloglossia on speech. The literature shows that recurrence is one of the most common problems but that this can be avoided if the tongue is subjected to exercises that improve its insertion and mobility, and therefore function.

*Objective:* The objective of this study was to analyze the treatment for ankyloglossia by means of a frenectomy followed by speech therapy.

*Material and methods:* A search was made on Medline through PubMed. The keywords were: “Ankyloglossia”, “Frenectomy”, “Speech Therapist”. Articles published before 2002 were excluded.

*Conclusions:*

- Dentists have the responsibility of observing all abnormal development of the stomatognathic apparatus of a child and of avoiding it. For this they will need to know about motor and speech development.
- Indications should be made to remove a short lingual frenulum when this interferes with the function of the tongue, and in order to avoid surgical treatment failure we recommend postoperative speech therapy.

—An early diagnosis is important in order to improve the chances of success.

### **39. PEDIATRIC ORAL SURGERY: DIODE LASER OR SCALPEL?**

**Vieira C, Ferreira L, Espasa E, Cahuana A, Boj JR**

*Introduction:* The diode laser has contributed significantly to improving various types of treatment for pediatric patients. It consists of an active solid medium made up of a semiconductor that uses a combination of gallium arsenide, and other elements such as aluminum or indium, in order to transform electric energy into luminous energy. All wavelengths (800 nm to 980 nm) are minimally absorbed by dental structures and therefore ideal for soft tissue surgery. Its size, design and low cost make it one of the most used lasers in dentistry.

*Objective:* The objective of this study was to provide an update on the use of the diode laser, as well as to provide information on the treatment of various clinical situations by presenting various case reports.

*Methods:* A review of the literature was carried out using PubMed and the studies published in the last ten years, using the following words: Diode laser, Laser in paediatric dentistry. Twenty-five references were chosen.

*Conclusions:* The diode laser has hemostatic, antibacterial and anti-inflammatory properties. It means faster healing of all surgical treatment, postoperative periods that are less troublesome, a lower requirement of painkillers and local anesthetic. The acceptance of laser is very high among parents as well as patients. Laser has meant that some types of treatment that have been carried out with conventional techniques have now been substituted and/or complemented, modified or modernized.

### **40. ORODENTAL HEALTH IN CHILDREN AND ADOLESCENTS WITH OBESITY OR OVERWEIGHT**

**Adobes M, González M, Garcovich D, Gandía JL**

*U.D. Ortodoncia y Odontopediatría. Facultad de Odontología. Universidad de Valencia*

*Introduction:* Child obesity and overweight (CO/O) have reached epidemic proportions and they are risk factors for chronic health diseases. Our objective was to carry out a systematic revision (SR) of the relationship of COO with orodental pathology in pediatrics.

*Material and methods:* SR of the literature between 2007-2011 without language restrictions of tertiary (Trip, Cochrane and NGC), secondary (PubMed, IME, IBECs and MEDES) and primary (review of references) information sources. Inclusion criteria: patients (children aged 0-18 years), risk factor (COO) and variables of interest (primary: caries, secondary: other orodental pathologies). Keywords: obesity, dentistry, oral health and dental caries. Data collected: author, year, country, type of study, age of patient, cases (COO) and controls (with body mass index, BMI, normal or low), co-morbidity, socioeconomic

status, prevalence of caries and other orodental health results.

*Results:* A total of 47 documents were located, of which 36 met the SR search criteria, which were temporarily distributed: 6 articles from the year 2007, 6 from 2008, 4 from 2009, 11 from 2010 and 9 from 2011. The degree of heterogeneity was very wide (in patients, interventions, main variables of interest and design type), which did not permit applying quantitative synthesis (meta-analysis) of the data, but did permit qualitative analysis. There was a discrepancy with regard to the relationship between BMI and rate of dental caries (CAOD, caod).

*Conclusions:* SR permits dentists finding the potential relationship between dental caries, COO and oral and/or systemic diseases.

#### 41. RELATIONSHIP BETWEEN ORAL BREATHING PATIENTS AND DENTAL MALOCCLUSION

**Guerrero S, Vázquez V, Zorrilla N, Egea M, Sáez S**  
*Universitat Internacional de Catalunya*

*Introduction:* Mouth breathing when resting is a bad habit that can be found in growing patients. Mouth breathing is characterized by organic problems such as allergic rhinitis, tonsil and adenoid hypertrophy, deviation of the septum. There may also be functional problems due to the presence of a bad breathing habit with no obstruction of the upper airways. Disturbed function can produce changes in the position of the tongue, lips and jaw in addition to changes in body posture, which may affect the orodental development of the child.

*Objective:* To carry out a review of the literature on the relationship between oral breathing habits and dental malocclusion.

*Material and methods:* A search of the literature was carried out using the PubMed online database using the keywords "mouth breathing", "dental malocclusions", "parafunctional habits" with the following criteria. Publications after the year 2000 and in the English language. During the first search 51 articles were found of which 34 were chosen.

*Conclusion:* There is great controversy among authors as to whether oral breathing produces changes at a dentomaxillofacial level. Nevertheless, most of the articles reviewed conclude that there is a correlation between oral breathing habits and malocclusions, such as: openbite, uni- or bilateral posterior crossbite, a deeper narrower maxilla.

#### 42. AVULSION IN PRIMARY TEETH: REVISION OF THE LITERATURE

**Sanjurjo S, Martín F, Trigueros M**

*Introduction:* Dental avulsion is more common during the primary dentition and the general indication regarding this type of lesion is not to re-implant an

avulsed tooth. However, cases have been described of avulsed primary teeth being implanted.

*Objectives:* To investigate the classification of dental trauma, to highlight examination techniques, and to describe cases of avulsed primary teeth that have been reimplanted.

*Material and methods:* A review of the literature was carried out on dental avulsion in the primary dentition using articles and books published between 1992-2012, and that included 9 reimplantation cases, the examination of the child that had suffered a traumatic injury and its consequences. A manual library search was carried out (UCM) together with an internet search (Pubmed). The keywords used were: dental avulsion, primary tooth avulsion, sequelae, examination of the trauma, consequences of the dental trauma and reimplantation of the avulsed primary tooth.

*Discussion:* The literature only describes isolated cases regarding the reimplantation of primary teeth. Most authors claim that a primary tooth cannot be reimplanted, although there are some clinical cases published by authors such as Kawashima, Filippi and Weiger with satisfactory results that suggest that reimplantation should be considered depending on the case.

*Conclusions:* Dental trauma is very common during infancy. A complete medical history should be taken following a traumatic injury. Dental trauma during the primary dentition can lead to disorders in the permanent dentition. Most authors believe that dental reimplantation should not be indicated for a dental avulsion. Some cases have been described of reimplanted avulsed teeth with differing results, and with as many successes as failures.

#### 43. CHROMOGENIC STAINING IN PEDIATRIC PATIENTS

**Cabezas C, Albero G, Moreno P**  
*Universidad Europea de Madrid*

*Introduction:* Dental stains are an alteration of the original natural color of a tooth because of different reasons, such as dietary habits, or other unhealthy habits that affect a tooth chemically.

This presentation is centered on those extrinsic stains caused by chromogenic bacteria, given that it is a color that we see frequently in pediatric clinical practice.

Chromogenic stains are of unknown etiology but it is said that they are caused by chromogenic bacteria that proliferate in the oral cavity. The bacteria that produces these pigments is the *B. Melanogenicus*, which acts on the ferric salts of food, encouraging iron oxide that is deposited on teeth producing a black color. It affects the vestibular and palatal areas and a line is formed nearer the cervical part of the tooth. It is simple to remove but it recurs easily.

*Objectives:* To determine the population of children affected by this pathology.

To evaluate if it affects females more than males.

To define an action protocol suitable for child patients.

*Material and methods:* An extensive review of the literature was carried out using digital scientific data-

bases such as PubMed, Medline and other sources such as journals and books from the UEM and UCM libraries.

*Conclusions:* On some occasions the staining mechanism can influence the result and the treatment options that a dentist can offer patients, and for this reason knowing the etiology of a stain is important in order to make the correct diagnosis and treatment on examining the teeth affected.

#### 44. DENTAL AGENESIS

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*Introduction:* Dental agenesis is one of the more common dental anomalies and it is generally associated with other dental or skeletal problems. It is understood that the term agenesis refers to a lack of formation or development of dental germs, and it is therefore a term used for describing the congenital absence of one or more primary or permanent teeth. Agenesis is classified according to the number of absent teeth. With regard to primary teeth they are less common and an average of 5% will be found. The upper lateral incisors are more commonly absent in the general population. The diagnosis of agenesis should be carried out clinically as well as radiographically.

*Objective:* To carry out a search of the literature on dental agenesis in the primary dentition, its etiology, prevalence, associated characteristics, classification and treatment.

*Material and methods:* An online literature search was carried out of the PubMed database with the following inclusion criteria articles in English from 2000-2012 with the following keywords: “dental agenesis”, “hypodontia”, “oligodontia” and “anodontia”

*Conclusions:* Dental agenesis has a high prevalence and it can lead to malpositions, periodontal problems, a lack of development of the jaws, aesthetic and functional problems. A multidisciplinary approach is important for preventing these problems. Thus, the best age for treatment will be dictated by the degree of treatment required and the age of the patient.

#### 45. BILATERAL MESIODENS: A CASE REPORT

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*Introduction:* Supernumerary teeth are an excess number of teeth. They can be single or multiple, uni- or bilateral and appear in both dentitions. The etiology of hyperdontia continues to be studied, but it has been suggested as a cause of hyperactivity of the dental lamina.

The supernumerary teeth more commonly found in the population (0.15%-1.9%) are mesiodens, located in the upper anterior region, between the upper central

incisors (UCI). They can be a casual finding, however disorders can arise such as retention of the permanent teeth, displacement or rotation, overcrowding or interincisal diastemata, root disturbance, cysts and even eruption into the nasal cavity.

The case is presented of a male patient aged 8 years, who attended the Masters degree course of the UEM, with a UCI that had not been shed. After radiographic examination and a CAT scan, the presence of two mesiodens were observed in a horizontal position between the primary and permanent incisors.

*Objectives:*

—To assess the prevalence of mesiodens in the pediatric population and gender bias.

—To evaluate the treatment protocols according the clinical conditions present.

*Material and methods:* The information published in articles and journals will be reviewed.

*Conclusions:* A disturbance in the eruption of an UCI should alert us clinically to the possibility of a mesiodens. An early diagnosis will allow quick intervention, a favorable prognosis and minimal complications.

#### 46. CLINPRO CARIO –POP: A TEST FOR CARIES RISK

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*Introduction:* Pediatric Dentistry has a preventative focus, as a result of which caries risk assessment is extremely important. Caries tests, and being able to establish the degree of susceptibility of the disease, are particularly important as preventative measures can be implemented after the evaluation of results.

There are many tests available on the market such as the Clinpro Carlo-L-Pop<sup>®</sup> which measures the production of lactic acid of active cariogenic bacteria. The potential for developing carious lesions and monitoring the risk of an individual can be determined.

*Objectives:* To illustrate the application of this alternative test in order to evaluate caries risk and, based on a revision of the literature, to describe and analyze the potential benefits for Pediatric Dentistry.

*Materials:* Clinpro Cario-L-Pop<sup>®</sup>, caries risk analysis test, 3M ESPE.

*Methods:* This review of the literature is based on a selection of literature obtained in PubMed using the keywords “caries risk test”, “Clinpro Cario L-Pop”, limited to articles published in the last 10 years in English and with an available summary. A total of 12 articles were chosen, 8 clinical tests and 4 revision articles.

*Conclusions:* According to the literature the Clinpro Cario L-Pop can be useful for determining caries risk and for establishing the efficiency and compliance of the patient with regard to a treatment plan. However, more studies are necessary that demonstrate how it can be validated and reproduced, as has been done with other tests.

#### 47. PROBIOTICS: POSSIBLE APPLICATION IN PEDIATRIC DENTISTRY

**Hernández A, Camps O, Hernández M, Boj JR**

*Introduction:* Probiotics are live microorganisms that, when added to food, generate a beneficial effect on the health of the host.

*Objectives:* A review of the literature published over the last 10 years on how probiotics influence general and oral health, possible risks when using it, forms of administration and the degree of scientific evidence that exists on its administration.

*Methods:* Using a PICO question a wide search was carried out using PubMed which was limited to the last 10 years and to dental journals. The keywords were probiotics, oral health, caries, periodontal disease, halitosis, candidiasis, pediatric dentistry. Metaanalysis was included, systemic revisions, randomized controlled clinical trials, practical guides and in vitro studies. After the literature search, some articles were added that were of relevance despite not meeting the 10 year requirement.

*Conclusions:* Bacteriotherapy in the form of probiotics is a promising concept in dentistry and a reality when treating intestinal disease. It would seem that if it is first administered during early infancy, the potential benefits of the therapy are increased. The most sought after application in pediatric dentistry is that of an inhibition of oral colonization due to cariogenic bacteria. They are also useful for treating periodontal disease, halitosis and candidiasis. Various studies indicate that the daily ingestion of *Lactobacillus* inhibits the proliferation of pathogenic bacteria although experiments have also been carried out with *Bifidobacterium* and others. There are numerous ways of administration although there are a lack of studies that enable determining the best one.

#### 48. BRUXISM IN CHILDREN: FROM DIAGNOSIS TO THERAPEUTIC OPTIONS

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*Introduction:* The term “bruxomanie” was first introduced by Marie Pietkiewicz in 1907 to describe the crunching and grinding that arises without any functional purpose.

The prevalence of temporomandibular disturbances during infancy and adolescence wavers between 7% and 68%. Most of these are due to bruxism. Recent studies have found a high prevalence in patients with Down syndrome, cerebral palsy and autism.

The etiology is multifactorial and it includes local, psychological, genetic, neurologic factors and other factors of a social type. Clinically it is identified as abnormal dental wasting, although there are more symptoms: pulpitis, pulp necrosis, muscular hypertrophy, hypermo-

bile teeth, thermal hypersensitivity, tongue indentation, pronounced *linea alba*...

Treatment includes child psychotherapy, biofeedback, occlusal splints, pharmacology, etc. However there is a lack of scientific evidence regarding the therapeutic options for child bruxism.

*Objective:* A review of the literature was carried out on child bruxism and its treatment.

*Material and methods:* An online literature search was carried out based on PubMed, Medline and Cochrane using articles published between the years 1998-2012. The keywords used were: bruxism, infant, children, treatment, diagnose, primary teeth.

*Conclusions:* There is great controversy with regard to the treatment of bruxism in children. Whether it should be treated during infancy continues being a question of debate. There is no agreement with regard to the effectiveness of the therapeutic options, and the scientific studies available cannot be compared in order to evaluate their efficiency. This demonstrates that investigation on the subject should be encouraged.

#### 49. FUSION OF PRIMARY MOLARS: A CASE REPORT

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*Introduction:* The phenomenon of fusion is an anomaly in the formative process of a tooth in which two original dental germs join together leading to a tooth that can be normal in size or larger.

Dental fusion is more frequent in primary teeth than in permanent teeth, and it has an incidence that varies between 0.1% and 2.5%. It arises nearly always in the anterior region.

*Objectives:* An exceptional case is presented, given its scarcity, of unilateral fusion of primary molars.

*Methods:* In order to produce this poster a search was made in:

—PubMed.

—The webpage of the Pediatric Dentistry Faculty of the Universidad Complutense de Madrid.

—The library of the Dental Faculty of the UCM.

—The library of the Dental Faculty of the UEM.

Keywords: primary dentition fusion, double teeth, primary molars fusion, dental anomaly, fused teeth.

*Conclusions:* Fusion is defined as a local morphological disturbance that occurs very rarely, mainly in the anterior primary teeth. An exceptional case is presented of unilateral fusion of primary molars given that this disturbance appears so rarely in the posterior sector.

#### 50. IRRIGANTS IN THE PRIMARY DENTITION - A REVIEW OF THE LITERATURE

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*Introduction:* The anatomic and physiological peculiarities of the primary dentition mean that pulpectomies in these teeth are complex, and that specific technical requirements are needed. In fact, characteristics such as an irregular root anatomy and too many accessory ducts means that irrigation has to be more effective in order to permit microbial reduction in mechanically inaccessible areas. Currently, the irrigation protocol that is most commonly used implies the use of sodium hypochlorite, a very efficient antiseptic for permanent teeth. But this irrigant has certain limitations that mainly concern toxicity, and this had led to concerns over its use in the primary dentition.

*Objectives:* This revision aims to describe and make a comparison analysis of the irrigation protocols used currently in the primary dentition.

*Materials and methods:* A search was carried out in PubMed/Medline and EBSCO that was limited to the English language and publications over the last ten years using the keywords “root canal irrigants” “pulpectomy” and “primary teeth”. Sixteen publications were found of which nine in vitro articles were selected, two clinical trials and two revisions.

*Conclusions:* After analyzing the results it was confirmed that there is a relatively small number of studies published and that no consensus exists on the most suitable irrigation protocol for pulpectomies in the primary dentition. There is an urgent need to have further controlled clinical studies with a higher level of scientific evidence regarding the choice of an irrigation agent that is respectful of the peculiarities of this type of dentition.

## **51. ROTARY INSTRUMENTS IN THE PRIMARY DENTITION. A REVISION OF THE LITERATURE**

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*Introduction:* The success of pulpectomies in the primary dentition depends essentially on the microbial reduction achieved by the chemical and mechanical preparation of a root canal system. The presence of a greater number of accessory ducts and an irregular anatomy that is unpredictable, make this type of approach more complex. The instrumentation of root canals can take place using a manual, hybrid or rotary technique with the first being more commonly used for this type of treatment. Often rotary instrumentation techniques are only an adaptation of those used in the permanent dentition and the peculiarities of primary root canals are not taken into account.

*Objectives:* This revision of the literature is aimed at describing and comparing the instrumentation methods used in primary teeth.

*Materials and methods:* This revision is based on a literature selection in the English language over the last ten years, carried out in PubMed/Medline with the keywords: manual, rotary, instrumentation and primary teeth. Forty publications were found of which two random clinical trials and three revisions were chosen.

*Conclusions:* The studies analyzed do not show any significant differences between the instrumentation techniques with regard to the disinfection of root canals. However, rotary instrumentation appears to be a promising technique because it permits a more even repair of the duct surface, in addition to a reduction in operating time, which is fundamental in pediatric dentistry. There continues to be a need for developing systems that respect the anatomic peculiarities of primary teeth, and studies that confirm the advantages of these.