

## Posters Communications

### CLINICAL CASES

#### 1. A CASE REPORT: DENTINOGENESIS IMPERFECTA TYPE II

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**Introduction:** Dentinogenesis imperfecta is a disturbance that arises during the histo-differentiation stage in the predentin matrix. It has an autosomal dominant inheritance pattern. It affects both dentitions and it has a frequency of between 1/6.000 and 1/8.000.

**Case report:** The case is presented of P.D.G., a female patient aged 3 years, who did not fully cooperate, had no known systemic problems and who attended our pediatric dentistry practice at the dental department of the *Hospital San Rafael*.

It should be mentioned that the medical history regarding the birth and pregnancy were normal, and there were no other cases of dentinogenesis imperfecta in the family, or at least any other cases were unknown to the parents. It could have been due to mutations of a gene.

She had good oral hygiene, a non-cariogenic diet which was practically semi-bland due to an inability to ingest solid food. The patient did not suffer from dental sensitivity but she did suffer from a strong psychological and functional disturbance. The intraoral examination revealed complete primary dentition that was caries-free, with a near total loss of enamel and dentine, of a general yellow-coffee color, severe attrition and a considerable loss of the occlusal vertical dimension.

The confirmed diagnosis was of: Type II dentinogenesis imperfecta, "hereditary brown opalescent dentin", "Capdepot dysplasia", "crownless teeth" or "hereditary dentinogenesis".

**Discussion:** Dentinogenesis imperfecta Shields Type II appears as an isolated condition, and it has an autosomal dominant hereditary pattern. The enamel is normal or hypoplastic, and it tends to break away given the anomalous dentinal support, and it has a bluish-brown translucent color. The crowns are bulb-shaped, the pulp chambers are obliterated, the roots are short. The primary teeth have root fractures and apical rarefaction.

After a revision of the literature we propose a treatment plan with posterior crowns in the first phase and increasing the vertical dimension, and a second rehabilitation phase with overdentures.

Our therapeutic objectives should be the:

- Rehabilitation of function and esthetics.
- Conservation of roots and alveolar bone.
- Prevent wear, dental sensitivity and pulp pathology.
- Improve masticatory function.

—Help the patient become more social and improve self-esteem.

—Maintain correct oral hygiene.

—Prevent dangerous habits, fractures and malocclusions.

—Improve behavior in dental surroundings.

#### 2. APPROACH TO ODONTOMAS: A CASE REPORT

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**Introduction:** Odontomas are benign tumors made up of structures that are similar to hard tissues in different degrees of development.

They are the most common odontogenic tumors with a frequency of 30-40% and they are more frequently found in children and adolescents, showing no gender difference. According to the WHO there are two histological types: complex (commonly located in the mandible) and compound (located in the maxilla). Clinically they are asymptomatic and three types of odontomas have been recognized: central odontoma, peripheral and erupted. The diagnosis is radiological and histopathologic and treatment always involves surgery. Prognosis is favorable.

**Objectives:** To carry out an action protocol based on a revision of case reports described in the literature and to find out how pediatric dentists should act in these cases.

**Material and methods:** A search was made in the literature using the following databases: Pubmed, Medline, Cochrane over the last ten years. The case report is presented of a pediatric patient who attended the *Clínica Universitaria Rey Juan Carlos* because of a delay in the eruption of 32 and a diagnosis of odontoma.

**Results:** Surgical removal was planned of the odontoma according to the action protocols for pediatric patients.

**Conclusions:** Odontomas rarely erupt in the oral cavity and they tend to be associated with impacted teeth. They are benign and may have symptoms such as pain, inflammation and infection. Surgical removal is the treatment of choice followed by histopathologic analysis.

#### 3. THERAPEUTIC ALTERNATIVES FOR FACIAL ASYMMETRY: A CASE REPORT

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**Introduction:** Facial asymmetry is a disorder characterized by the lateral displacement of the mandible and a canted occlusal plane in the direction of the mandibular displacement, and it is considered an occlusal disturbance. Its etiology is diverse, but genetic and congenital factors stand out during the prenatal period, together with environmental factors including trauma and infection, and also occlusal disturbance. Pediatric dentists should be familiar with the treatment of these disturbances, as on many occasions the treatment will require multidisciplinary cooperation.

**Objectives:** The aim of this poster is to present two therapeutic alternatives for facial asymmetry.

**Material and methods:** A literature search was carried out in PubMed, Wiley Interscience with the keywords "facial asymmetry" "lateral crossbite" "dental hypoplasia" "dental ankylosis".

The case is presented of a five-year old girl, who attended the pediatric dentistry masters degree course of the *Universidad Europea de Madrid* for caries treatment. The clinical craniofacial examination revealed mandibular facial asymmetry with deviation of the midline and right sided crossbite, enamel hypoplasia in 53, 78 and 85 and ankylosis in 54.

We propose two treatment alternatives for facial asymmetry, with one of these being maxillary expansion by means of a fixed or removable apparatus, and the other option being the selected filing down with the elimination of the interferences in order to achieve function of the contralateral side of the arch.

**Conclusions:** We consider that selective filing down, in order to eliminate interferences, to be fast and efficient for the correction of the facial asymmetry of pediatric dentistry patients.

#### 4. TOOTH AVULSION: EXTRACTION VERSUS CONSERVATION; A CASE REPORT

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**Introduction:** Dental trauma is increasing common in pediatric dentistry offices following falls in the school playground, playing sport and/or games, and traffic accidents, etc. In many cases avulsion will occur of teeth with little root development.

**Case report:** The case we present concerns the treatment failure for an avulsed lower permanent incisor which had been reimplanted, but not by ourselves, and that had considerable infection and mobility.

The development stage of this tooth when the trauma occurred at the age of 7 years, the repeated infections after reimplantation failure, together with the precarious oral hygiene of the patient, led to an unfavorable prognosis. Despite this, the long term benefits of maintaining the tooth in the alveolus should be kept in mind, such as: preserving alveolar bone height, conservation of periodontal tissue, and esthetic and phonetic factors at a difficult age.

**Discussion:** The systematic control of the infection, apex formation treatment, MTA plug, endodontia and splinting is described. Our aim was to maintain the tooth in the alveolus for as long as possible until another more definitive solution was possible. The patient is currently 9 years of age, the incisor displays no symptoms and is intact.

#### 5. TWIN BLOCKS AS A TREATMENT OPTION FOR CLASS II DIVISION 1 MALOCCLUSION

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**Introduction:** The craniofacial complex develops in the three planes of space, but it is possibly in the sagittal plane where there are more variations in size and position of the maxilla and mandible with regard to the skull base, or between both of them, giving rise to class II malocclusions.

Of these 80% are due to mandibular retrognathism, and 20% to maxillary prognathism. In general the idea behind the treatment for these cases tends to be a functional apparatus for mandibular retrognathism and extraoral anchoring for maxillary prognathism. Functional apparatuses transmit the forces generated by the muscles when the function is being carried out, and disturbed function is restored, muscular activity increased, prompting the changes necessary for growth and development of the maxilla and for correcting malocclusion.

**Objectives:** To present the case of two patients aged 8 and 9 who were given functional orthopedic treatment for Class II malocclusion using twin blocks at the pediatric dentistry masters course at the Faculty of Medicine and Dentistry of the *Universidad de Valencia*.

**Materials:** A clinical extraoral and intraoral analysis was carried out of the patients before and after treatment, with study models, panoramic radiographies and lateral telerradiographies of the skull from which the cephalometric analysis was made.

**Method:** The patients were treated using the action of twin blocks. The control visits were made at 15 days and then again at 3-4 weeks. During these visits the patients and parents were motivated as much as possible. The treatment was also aimed at influencing the initial growth changes, and at achieving good masticatory function.

**Results:** Nine months into the treatment, the SNB angle increased and the ANB angle decreased, improving the intermaxillary relationship. The length of the mandible experienced an increase, as did facial depth, while there was a reduction of facial convexity and the angle of the mandibular plane. The angle formed between the SN plane and the mandibular plane experienced a reduction which modified the growth pattern. The soft profile changes obtained were not significant.

**Conclusions:** Given the results after nine months of treatment with twin blocks, it can be concluded that the appliance is well tolerated by patients and that it causes cephalometric changes that help to correct this type of malocclusion during the growth period.

## 6. ESTHETIC CROWNS IN PRIMARY MOLARS. A CASE REPORT

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**Introduction:** There has currently been a reduction in caries prevalence in the primary dentition due to the methods of prevention. However, permanent dentition restorations differ from those in the permanent dentition.

The restoration materials that are most used by pediatric dentists are composite and preformed metal crowns.

When three or more surfaces are involved of a dental structure, the best treatment option are preformed metal crowns, because they require less handling, they do not fracture or wear, and they stay in place until the tooth is shed.

There are increasingly more parents that request esthetic restorations for their children's primary teeth and, in order to solve this issue, crowns with esthetic facing appeared.

**Objectives:** To compare the restoration of primary molars after pulp treatment using metal crowns and crowns with esthetic facing.

**Material and methods:** Patient aged 7 years who attended the university dental clinic of the *Universitat Internacional de Catalunya*. After the first visit and the pertinent radiologic tests, deep caries was diagnosed with pulp involvement of primary molars 6.4 and 5.4.

After carrying out pulp treatment of both molars, restoration of one molar was carried out using a preformed metal crown by 3M®, and in the other molar esthetic facing by (NuSmile®) was used in order to compare the filing down and clinical behavior of both crowns together with parent satisfaction.

The preparation of the molars was carried out under total isolation and each molar was filed down following the instructions of the manufacturer. Both were cemented with Ketac Cem® glass ionomer cement.

The molars were checked at 4 and 12 months and gingival health was assessed, together with marginal adaptation, retention, changes in color, wear, fracture and parent satisfaction.

**Conclusions:** Although parent satisfaction was greater with the esthetic crowns, moderate gingival inflammation was observed together with bleeding on probing. The adaptation, retention, color, wear and fracturing were not affected. These restorations would be ideal if gingival inflammation could be reduced together with cost.

## 7. CLEFT LIP AND DENTAL PATHOLOGY ASSOCIATED IN THE PRIMARY DENTITION: A CASE REPORT

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**Introduction:** Cleft lip is a congenital orofacial malformation. It consists of a cleft or fissure of the lip

and/or adjacent structures, because of the non-fusion of the 2<sup>nd</sup> and 3<sup>rd</sup> branchial arch. The high numbers of supernumerary teeth are among the lesions associated with this pathology.

Dilaceration is a lesion produced by a disturbance during dental development that leads to a change in the root angle with regard to the crown or in the root itself.

The case is presented of a 6 year-old patient with a cleft lip, a supernumerary tooth and dilaceration of primary central incisors.

**Objectives:** a) to establish the existence of a possible relationship between cleft lips, the presence of supernumerary teeth and dilaceration in the primary dentition, as well as to investigate the possible causes; and b) to assess the development of primary teeth with root dilaceration and the repercussions when shed; and the development and eruption of the permanent dentition.

**Material and methods:** A revision of the literature was made using electronic databases. Keywords: *cleft lip, harelip, primary dentition, laceration y supernumerary*.

**Conclusions:**

1. The presence of supernumerary teeth associated with cleft lips is a relatively common manifestation.

2. Dilaceration in the primary dentition is an uncommon disturbance that appears little in the literature. The etiology is unknown, and may be related to possible trauma to the milk teeth in the permanent dentition.

3. Periodic radiographic control of the patient is necessary in order to check the complete exfoliation of the dilacerated teeth and the eruption of the permanent dentition.

## 8. DENTAL MANAGEMENT OF PEDIATRIC PATIENTS WITH HEREDITARY ANGIOEDEMA

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**Introduction:** Hereditary angioedema is a rare entity with an autosomal dominant character that is caused by C1-esterase inhibitor deficiency, a protein that helps in the regulation of the classical pathway activation of the complement system. It is characterized by recurrent episodes of angioedemas that are circumscribed, nonpruritic and located in the submucosa or subcutaneous tissue and in the reparatory, gastrointestinal or genitourinary tracts. The clinical manifestations appear frequently during childhood and they can lead to episodes of stress, anxiety and cause infections or trauma. It is essential to bear in mind that the microtrauma that may arise during dental treatment poses a high risk of triggering an attack and, as a result of being located on the body, there may be increased complications and airway compromise with even a risk of asphyxia. The diagnosis is complicated given the low prevalence and it is based on the patient's medical history and repetitive episodes, generally with a positive family history, and it should be supported by laboratory tests. There are various therapeutic modalities

that should be adapted to the situation depending on the need to treat acute attacks, and long term support should be provided in order to avoid recurring attacks. Prophylaxis should be aimed at preventing the development of an angioedema in high risk situations.

**Objectives:** To find out what hereditary angioedema is, the key for early diagnosis and the protocol that should be followed in order to carry out dental treatment safely.

**Material and methods:** A review of the literature was carried out on dental procedures in patients with this pathology. Various databases were used and the search was based on the case of a pediatric patient who received dental treatment in the *Hospital Universitario La Paz (Madrid)*.

**Conclusions:**

1. There is an extensive amount of literature about adult patients affected by hereditary angioedema but very little concerning the pediatric population. Future investigations are needed on this subject as the first episodes arise during infancy.

2. Multidisciplinary cooperation is necessary in order to treat the pathology safely, and it should include the departments of maxillofacial surgery, allergology and pediatric dentistry.

3. Although dental treatment for these patients tends to be carried out in hospital surroundings as it is considered high risk, the results are successful if the prevention strategies are correct.

## 9. CROUZON SYNDROME: A CASE REPORT

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**Introduction:** Crouzon syndrome is a hereditary autosomal dominant disorder that is caused by a mutation of chromosome 10. It was first described in 1912 and it is characterized by the premature closure of craniofacial coronal and lambdoid sutures that affect principally the eyes and nervous system.

The case is presented of a boy with this syndrome who was treated in the

*Hospital Universitario La Paz* in Madrid.

**Objectives:** a) to study the oral manifestations that arise in Crouzon syndrome; b) to investigate the different diagnostic methods and the existing therapeutic approach; and c) to present the protocol that is used for these patients at the *Hospital Universitario La Paz* in Madrid.

**Material and methods:** A systematic review was carried out through electronic databases and using the keywords: *Crouzon syndrome, diagnosis, treatment, craniofacial dysostosis*.

**Conclusions:**

1. Crouzon syndrome is characterized by a malformation with a number of clinical features. These include craniofacial, oral, ocular and neurological disturbances, which arise to a greater or lesser degree depending on the case.

2. The diagnosis is established as a result of the clinical and radiologic manifestations. Genetic testing will confirm the mutation of the affected chromosome.

3. The therapeutic approach should be made using a multidisciplinary team made up of pediatricians, maxillofacial surgeons, pediatric dentists, orthodontists, neurologists, ophthalmologists and otorhinolaryngologists.

## 10. HAY WELLS SYNDROME

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**Introduction:** Hay Wells syndrome forms part of a group of rare genetic skin diseases known as ectodermal dysplasias. Ectodermal dysplasias are diffuse congenital non-progressive genodermatoses that affect the epidermis, and which are characterized by the absence or reduction of hair, teeth, nails and of sweat and sebaceous glands. The central nervous system is also affected and there are anomalies of the nose, outer ears and lips. Depending on the combination there are more than 120 different syndromes, with all the possible forms of hereditary transmission. Various syndromes that are characterized by ectodermal dysplasia are associated with cleft lip and/or palates.

Hay Wells syndrome is a rare form of hereditary ectodermal dysplasia. It was first described by Hay and Wells in 1976, and they adopted the acronym AEC which was made up of *ankyloblepharon, ectodermal defects, cleft lip/palate* and this is how this complex multiple malformation syndrome is known. The most common clinical manifestations are: disturbance to dental shape and size, cleft palate, ectodermal dysplasia and ankyloblepharon.

The differential diagnosis should be made with other multi malformation syndromes with ectodermal dysplasia such as Rapp Hodgkin syndrome, EEC syndrome. Intelligence tends to be normal and surgical correction of the facial malformations and extremities improves the quality of life for these patients reasonably.

It is inherited as an autosomal dominant genetic trait, with variable expression. The clinical manifestations may be very different and any of the clinical signs described may be missing, except signs of ectodermal dysplasia. Recently the genetic defect was identified in the long arm of chromosome 3.

**Objective:** To define the clinical characteristics, diagnosis and pathogeny of Hay Wells syndrome. To describe the surgical options and dental treatment for the malformations that arise in this syndrome with the aim of improving quality of life for these patients.

**Material and methods:** In order to obtain the information in this article the medical literature in PubMed Central was consulted. Information was also provided by physicians in the *Hospital Infantil de la Paz* in Madrid on the cases treated in this center.

**Conclusions:** Due to the orofacial disturbances of patients with Hay Wells syndrome, pediatric dentists should be included in the multidisciplinary teams in charge of treating and following the children with this syndrome. Better results can be achieved with coordinated work, and the quality of life of these patients will be improved.



## 11. BILATERAL SUPERNUMERARY TEETH IN THE PRIMARY DENTITION. A THERAPEUTIC APPROACH

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**Introduction:** Supernumerary teeth are those that appear during the dentition period, increasing the normal number of teeth in the arches.

The etiology is not clear, but various theories have been put forward. With regard to the epidemiology, supernumerary teeth are twice as common in boys as they are in girls. With regard to age, 30% of the supernumerary teeth are diagnosed in the first decade of life. It should be pointed out that 0.3-0.8% of the population in the primary dentition has supernumerary teeth, of which 12-23% are bilateral.

**Objectives:** The aim of this poster is to evaluate the presence of supernumerary teeth in the primary dentition and the therapeutic needs.

**Material and methods:** A search was carried out in PubMed using the keywords "supernumerary teeth" and "supernumerary deciduous teeth".

The case is presented of a male patient aged 4 years who attended the masters degree course in Pediatric Dentistry of the *Universidad Europea de Madrid* as a result of "caries". During the clinical examination bilateral supplementary supernumerary teeth that had erupted were observed in addition to considerable caries. Given the pathology, the therapeutic option chosen was that of carrying out obturations, pulp treatment and extractions.

**Conclusions:** Despite the low frequency of supernumerary teeth in the primary dentition, it is important to know how to deal with them depending on the associated pathology and the relationship with adjacent teeth.

## 12. RESTORATION TREATMENT FOR MIH MOLARS

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**Introduction:** The term MIH refers to hypomineralization with a systemic origin that affects 1 to 4 of the permanent first molars. It is frequently associated with incisors and it has a varied location and severity even within the same patient. Managing teeth with MIH is complicated due to multiple factors such as sensitivity and the rapid development of dental caries in the permanent first molars, limited cooperation of small children, difficulty in anesthetizing, and repetitive failure of restorations in these teeth. It is for this reason that each case has to be evaluated individually.

**Objective:** To put forward the different treatment and restoration responsibilities for molars that have molar incisor hypo-mineralization with different degrees of severity using different clinical cases.

**Material and methods:** A search was carried out in the PubMed database using the following search criteria: arti-

cles in English published between 2000 and 2010. The following keywords were: *molar incisor hypomineralization, prevalence, etiology, dental restoration*.

**Conclusions:** The clinical management of MIH molars is based on two basic criteria:

1. *Preventative:* a thorough medical history should be taken, a clinical and radiographic examination made, together with proper diet control, oral hygiene instructions and the application of fluoride periodically.

2. *Therapeutic:* becoming familiar with the different restoration possibilities is necessary in order to choose the best treatment according to the severity and degree of the defect, age and level of cooperation of the boy/girl.

## RESEARCH PAPERS

### 13. PATIENT ACCEPTANCE OF FISSURE SEALANTS

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**Introduction:** Pit and fissure sealants have been demonstrated to be a method of prevention that can considerably reduce the incidence of dental caries.

Taking decisions in dentistry involves science (available scientific evidence) professional judgment and the expectations and desires of the patient.

Therefore, an important factor to bear in mind is the acceptance of the treatment that is offered to our patients.

**Objectives:** a) To establish the professional's perception of patient acceptance of sealants; and b) to investigate the data obtained in order to analyze the importance of patient acceptance when taking decisions.

**Material and methods:** In order to carry out this work quantitative methodology was adopted using opinion questionnaires. Among those questioned were professors from the Faculty of Dentistry of the *Universidad de Sevilla*, dentists working in primary care and others from the private sector.

The questionnaire used in this study was made up of five sections. The questions consisted of 31 items based on affirmations or judgments and a score of 1 to 5 (Likert scale), in which each numerical value corresponded to the opinion and experience of the individual with regard to the item indicated.

The survey included a total of 400 professionals, which on the assumption of simple random sampling permitted working with a confidence level of 95% and a maximum error of 5%.

**Results:** Less than half of those surveyed (46.8%) felt that explaining the use of a sealant to a patient was simple.

There was no clear opinion in favor or against by professionals with regard to accounting for the price of the sealants before parents. Some 34.1% felt that accounting for the cost of the treatment was easy as

opposed to 34.5% that considered it difficult, and 31.3% did not give an opinion.

Some 50.6% of the professionals felt that their patients did not have a high opinion on the use of sealants.

*Conclusion:*

1. The professionals felt that their patients did not have a high opinion of the sealants.

2. The professionals did not provide any conclusive results in favor or against the accounting of the price of the sealants.

3. Providing patients with information on the usefulness and advantages of sealants for pits and fissures is necessary.

#### 14. FRONTAL CEPHALOMETRY: DEGREE OF DIFFICULTY FOR POINT LOCATION

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*Introduction:* Frontal cephalometry is a complementary examination in orthodontics that helps in the diagnosis and treatment plan of asymmetry cases concerning the components of the dentomaxillary complex, and in the differential diagnosis of mandibular lateral deviations and in dental midline deviation. It is also used in the indication and posterior evaluation of expansion treatment, in maxillary disjunction, in the diagnosis of malformations of different structures and in surgical cases.

The first step when carrying out any cephalometric analysis is locating certain anatomical points. However, what is most discussed in the literature regarding frontal cephalometry is the location of these points together with the difficulty in obtaining proper radiographic projection. Although various investigations have assessed the errors when locating these reference points in lateral cephalometry, there is very little in the literature regarding frontal cephalometry. It was for this reason that we decided to study the degree of difficulty for the explorer when finding these points in frontal cephalometry.

*Objectives:* The aim of this work was to: a) determine what points are the most difficult to find; and b) to establish in this case the cause of the difficulty.

*Material and methods:* A frontal radiograph was chosen that met the requirements regarding the correct position of the head. A short document was prepared with a detailed description of the cephalometric points together with a survey on the degree of difficulty of each point when being located. In order to carry out this study essential information was given to the professionals with/or without experience in cephalometric tracing, and to students of the last two dental courses.

After a brief explication they were asked to identify the points on acetate paper and, after locating them, they were asked to fill in the survey regarding the degree of difficulty found.

*Results:* The degree of difficulty found by the professionals with different degrees of experience, together with the students, was established regarding the location of each of the cephalometric points.

*Conclusions:* After the analysis was carried out, the following conclusions were reached.

1. In the two groups studied, the professionals with and without experience, and the 4<sup>th</sup> and 5<sup>th</sup> years students, it was detected that the least difficult point to find was *Me*.

2. The points that were the hardest to locate were *ZL/ZR* and *JL/JR*.

3. The difficulty in locating the rest of the points analyzed was low in both groups.

#### 15. QUALITY CONTROL IN PEDIATRIC DENTISTRY. A COMPARATIVE TWELVE MONTH STUDY

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*Introduction:* The dental faculty of the *Universidad Complutense de Madrid* covers comprehensive dental care for children. We consider knowing the opinion of our patients and that of their guardians regarding their experience in the consultation room to be of vital importance. And we have therefore implemented the improvements suggested by patients and their parents in a study that was carried out a year ago.

*Objectives:* 1. To assess the degree of patient satisfaction with regard to the following points: a) agility of the treatment; b) access to the Faculty; c) characteristics of the waiting room; e) cost; and f) satisfaction during the treatment and with the results obtained. 2. To determine if patient satisfaction improved after having applied the measures suggested a year ago.

*Material and methods:* In order to see if the quality of the services had improved over the year, the data obtained was compared using the surveys carried out in 2010 and the current ones. The study was made up of two samples, one that was filled in by the children and the other by their parents. It evaluated the following points; a) reception of pediatric patients; b) comprehensive pediatric dentistry; and c) pediatric dentistry. A total of 50 surveys were collected from people who had been randomly selected, and from which the study was developed.

*Results and conclusions:*

1. Assessing the possibilities of improving pediatric dentistry care is essential.

2. After the application of the measures suggested by parents in our previous study a year ago, a considerable improvement was observed in the degree of parent and patient satisfaction.

#### 16. DETERMINING THE PH OF POPULAR DRINKS AMONG YOUNG PEOPLE

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**Introduction:** Dental erosion is a clinical problem that is increasingly observed in our consulting rooms, especially in children and teenagers. Excessive consumption of acidic and/or isotonic drinks by youngsters playing sports contributes to risk factors. In previous studies we have been able to see that most of these drinks have a pH value of less than 5.5, under which demineralization of the enamel starts.

**Objective:** To establish the erosive potential of the drinks that are most consumed among our population. With this information pediatric dentists can warn parents about the danger of consuming certain drinks regularly in order to prevent dental erosion, and less harmful substitutes can be suggested.

**Material and methods:** A range of commercial drinks were chosen from big supermarket chains and the dispensing machines of schools in our area. These were classified into fizzy drinks, commercial fruit juices, commercial milk fruit juices, isotonic drinks and milk drinks. The pH value of each drink was determined using a pH meter which was calibrated according to the instructions of the manufacturer. Disposable plastic glasses were filled with 50 ml of each of the drinks which were at room temperature (22°C). The sensor of the pH meter was introduced into the solution for 2 minutes, and the pH figure was registered in the table of results.

**Conclusions:** This study shows how many of the drinks that are regularly consumed by young people have a sufficiently low pH to erode and damage enamel. Therefore dentists should inform their patients and/or parents of the need to reduce the consumption of these drinks, in order to prevent dental erosion, and having a table with this data will prove very useful.

## 17. THE EFFECTS OF MAGNESIUM DEFICIENCY IN RATS' TEETH

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**Introduction:** Epidemiological studies show that the quantity of magnesium ingested is well below the daily recommended rate (350 and 330 mg/day for adult men and women).

**Objectives:** This present study was designed with the aim of observing the relationship between magnesium, copper and zinc and to establish if the former contributes indirectly to the development of structural anomalies of the tooth. Our aim was to study the effects produced by a magnesium deficiency in the mineralization of rat teeth, analyzing the magnesium, copper and zinc content as biomarkers of mineral status compared with the control group.

**Animals and methods:** A longitudinal prospective study was carried out with 72 male Wistar rats. The sample was randomly divided into eight groups. Four groups were given a control diet (C) and four a magnesium deficient diet (Mg-D). The tooth mineral was established at 3, 5, 7 and 10 weeks. The tooth content of magnesium, copper and

zinc was analyzed through atomic absorption spectrophotometry. The Student-T test was used for statistical analysis. The study had the approval of the ethics committee.

**Results:** The Mg-D group showed tooth magnesium levels that were significantly inferior to group C at 10 weeks: 2.84 +/-0.7 vs. 4.64 +/- 0.72 (p<0.05). The levels of Cu and Zn were significantly greater in Mg-D animals: 453.09 +/- 78.85 vs. 592.23 +/- 151.37; 0.75 +/- 0.14 vs. 1.5 +/- 0.7; respectively (p < 0.05) at 10 weeks.

**Conclusions:** Long term deficiency leads to considerable disturbances in the Zn and Cu mineral content of teeth and it could be the source of dental disturbances attributed to other causes of unknown origin.

Study financed by the Fondo de Investigación Sanitaria. FIS. Instituto de Salud Carlos III.

## 18. THE EFFECTS OF PRESURGICAL ORTHOPEDIC TREATMENT ON GROWTH AND DEVELOPMENT OF THE MAXILLA IN NEW BORN CLEFT LIP AND PALATE CHILDREN

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**Introduction:** The general aim of this work was to evaluate the effect of presurgical orthopedic treatment on the growth and development of palate segments in the middle third of the face, as well as the alignment of the premaxilla and vomer. Considerable growth and development disturbance has been observed in the maxilla of children with CLP who have undergone early surgery involving invasive surgical techniques. Taking into account what has been published by various authors, we now know that the use of presurgical orthopedic treatment encourages and guides the growth and development of the maxilla. The size of the fissure is reduced, and the development of harmful habits that can lead to the development of malocclusions because of an impairment in oral function, are avoided.

Muscle function is the best stimuli for accelerating and directing the transformation process of bone.

**Case reports:** Four case reports are shown with images.

**Conclusions:**

1. Functional orthopedic appliances are able to redirect, guide and accompany the growth potential of the maxilla, improving the morphology of the palate and the positioning of all the structures. In addition, the collapse of the jaw and hypoplasia of the middle third together with anterior and posterior crossbites, will be avoided, and the patient's esthetics and function improved.

2. Presurgical orthopedic treatment can help with these changes by eliminating the effects of the action of the tongue when placed on the fissure, and by not restricting the growth of just the palate.

3. The morphological characteristics of the maxillary arch change if the environmental and functional conditions are modified.

4. Changes in the bone could be seen radiographically, and apposition of the bone could be observed in the area of the fissure just as the size decreased.



## 19. PROPOSAL FOR AN INFORMATION POSTER FOR PARENTS ATTENDING THE PUBLIC HEALTH DEPARTMENT OF PEDIATRICS REGARDING THE PREVENTATIVE ASPECTS THAT ARE MOST RELEVANT IN DENTAL CARIES

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Traditionally information campaigns regarding dental caries are aimed preferably at pediatricians and the nursing sector. Given this, we are proposing to put an information poster in the waiting rooms of the healthcare centers in order to inform parents who are seeing pediatricians on the most relevant aspects of dental caries. The posters will be published in both the official languages, Basque and Castilian Spanish. Once the pilot outpatient center has been chosen, the preventative work will be validated by means of the data collection used in standard surveys with open and closed questions and which will evaluate the level of parental knowledge on dental caries. The poster will then be placed in the waiting rooms and, after being exhibited for the appropriate time, its impact and efficiency will be evaluated and standard surveys will again be carried out with open and closed questions.

## LITERATURE REVIEW

### 20. ADVANTAGES IN THE DENTAL CONSULTING ROOM OF EARLY DETECTION OF FEAR AND ANXIETY IN PEDIATRIC PATIENTS

**Martínez X, Guinot F, Martínez PT, Lorente AI**  
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*Introduction:* Dental fear and anxiety in pediatric patients is one of the greatest problems that we come across as pediatric dentists. This is due to the strong connection that exists between these feelings and a child's bad behavior in the dental chair. For this reason detecting these feelings early on is very important, as in this way the right measures can be taken and the behavior improved.

*Objective:* The aim of this revision was to highlight the importance of detecting fear and anxiety early on in the child and to list the most important causes producing it.

*Material and methods:* A search in the literature was carried out in the database of Pubmed between 1983 and 2009 of articles with the keywords *child dental anxiety, dental anxiety detection and management, dental anxiety fear, prevalence dental anxiety*.

*Conclusions:* It is important that pediatric dentists identify fear and anxiety early on so that they can modify

their own behavior before the patient, in order to transmit security and confidence to the child. In so doing a good and successful clinical course will be achieved.

### 21. EARLY DETECTION OF ORTHODONTIC PROBLEMS: INFORMATION FOR PARENTS IN PEDIATRICS DEPARTMENTS

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The dental care program for children of the Basque Government (PADI) covers the child population aged between 7 and 15 years. This means that frequently a child's first dental appointment is at the age of 7 years.

It can be affirmed that at this age pediatric dentistry and/or orthodontic problems may already be present, and that any preventative nature is totally lost.

For this reason we aim to create a poster so that parents coming for a pediatric dentistry consultation in the public health system (Osakidetza) clearly see the chief orthodontic problems that their children may have. In this way the negative consequences of non-intervention (with regards to numbers and time) can be minimized by acting as quickly as possible.

The posters will be placed in the waiting rooms of the pediatric departments with a picture and text that is adapted to the needs of the objectives.

For the scientific validation of this work, a study will be carried out previously in a series of health centers that will be, as far as possible, completely representative of all the health centers. Using a knowledge survey the achievements obtained after the application of these prevention measures will be assessed.

If the results are positive, the poster will be implemented in all the pediatric consulting departments in the public health system of the Autonomous Basque Community.

### 22. PREDISPOSING FACTORS FOR CARIES. A REVISION OF THE LITERATURE

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*Introduction:* Dental caries is a disease that did not represent an important problem until the end of the 21st Century. Its prevalence and incidence increased at the beginning of our century, becoming a serious health problem.

Current knowledge on the etiopathogeny of caries determines that a differentiation should be made between caries as a disease and caries lesions that are sequelae of the disease.

*Objectives of the presentation:* To carry out an in-depth study of the risk factors associated with dental caries and the steps that should be carried out in order to prevent the appearance and development of caries at an early age.



**Material and methods:** A search was made of the online literature in the database of PubMed with the following inclusion criteria: articles published in English, between 2009-2011 with the following keywords: *caries risk; prediction; multi-risk; explanation; causal studies, Diet; pediatric caries Dental care planning; Dental caries patterns; DMF indexes; Epidemiology trend lines.*

**Conclusions:**

1. The predisposing factors for caries after years of study and vast numbers of published articles are well accepted and have been established by various authors.

2. Dental caries is a dynamic process, which is reversible in the initial stages. Periodic examination is necessary in order to detect the factors that can increase caries risk.

### 23. FORM AND FUNCTION

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**Introduction:** The growth and development of the face arises as a result of functional needs, and the soft tissues covering the jaws carry out this role. When they grow and expand as the function is carried out, they drag the bone and cartilage which acquires a shape. Since Moss put forward his ideas in 1969 on the "functional matrix", various authors have written on the etiopathogeny of malocclusions and the concept of form and function. It is evident that there is an intimate relationship between form and function and that breathing, sucking, swallowing and chewing patterns can be responsible for the type of growth pattern of a person, a therefore of the characteristics of the malocclusion.

With malocclusion it is important to establish a correct diagnosis and treatment plan. An assessment should be made of each individual patient as to whether form should be treated first in order to then work on function, or form and function at the same time, or first function and then form.

**Objectives:** To establish at what point the dysfunctions that can alter a normal growth pattern should be corrected, taking into account that on occasions function may be compromised due to dentomaxillofacial disturbances; and to plan correct multidisciplinary treatment with a speech therapist and/or other professionals.

**Material and methods:** An online search of the literature was carried out using the databases of PubMed, and using articles published between 1980 and 2011. The keywords used were: *form, function, multifunction system, stomatognathic system, oral breathing, dysfunctional swallowing, chewing pattern, finger sucking.*

**Conclusions:** The treatment of malocclusions that deal with form and function, should be carried out according to the individual patient and their needs, as function creates the organ and the organ will create function.

### 24. THE PACIFIER HABIT VS. OROFACIAL REPERCUSSIONS: INFORMATION FOR PARENTS VISITING THE PEDIATRICIAN

**Rámila E, Anta M, Brizuela A, Gorritos B, Martín N**  
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**Introduction:** There are many training programs, talks, and courses etc., regarding orodental disease. However, these tend to be directed at pediatricians and the pediatric nursing sector as they are aimed at improving knowledge, which will then be passed on to patients and parents during the consultation.

**Objectives:** A revision of the literature revealed that only a low percentage of this information is actually aimed at parents. We propose putting together an information poster regarding the repercussions of using pacifiers over a long period. The poster is aimed at the parents attending the department of pediatrics in the public health system.

Simple language should be used as there are different levels of understanding, and the poster should have a picture to help clarify the content.

This preventative measure will be done through a pilot study (in various centers that are representative of the autonomous community) which will be developed using a double survey for parents (before and after seeing the poster) regarding parental knowledge of this health problem that is so common among the general population.

**Conclusions:** If the results obtained in this study are positive, the area of application can be increased to all pediatrics departments of the public health centers of the Autonomous Basque Community

### 25. VAN DER WOUDE SYNDROME

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**Introduction:** Van der Woude syndrome is a genetic malformation with high penetrance and variable expression. It is characterized by the presence of fistulas on the lower lip (88%) that can be accompanied by other manifestations such as cleft lip and/or palate, hypodontia, bifid uvula or ankyloglossia. These fistulas or pits may be located in the lower lip and they may be unilateral, bilateral or half fistulas in a circular or oval shape. Channels are formed in the lip mucosa that finish near or in the minor salivary glands. They are normally asymptomatic, although they sometimes produce secretions. Occasionally there may be complications because of the accumulation of food. It is inherited in an autosomal dominant pattern, caused by the mutations in interferon regulatory factor 6, located in chromosome 1q32-q41 in the VW type I and 1p34 in the VW Type II. It is the most common type of syndromic lip fistula (2%) with a prevalence of 1/75.000 live births. There are no significant differences with regard to gender. Cleft lips with or without the palate appear in 21% of cases. The

differential diagnosis should include: digital orofacial syndrome, cleft palate and ankyloblepharon syndrome or popliteal pterygium syndrome.

The treatment for this pathology depends on the clinical manifestations that are present. It should be carried out in a multidisciplinary form between maxillofacial and/or plastic surgeons, pediatric dentists, speech therapists... The treatment should include: lip fistula excision surgery for esthetic reasons, and for suppuration and a possible chronic inflammatory processes. Instructions should be given on oral hygiene, on lip/palate repair surgery. In cases of hypodontia the compression of the maxilla may make early orthodontic treatment necessary.

*Objective:* To bring this little known disease a little closer to pediatric dentists so that they can become more familiar with it, and so that the quality of life of these patients can be improved.

*Material and methods:* Revision of the literature in PubMed, Cochrane, Google academy, in addition to the information provided by the Department of Maxillofacial Surgery of the *Hospital La Paz* using the keywords: Van der Woude syndrome, cleft lip, cleft palate.

*Conclusions:* Since lip fissures are the most common syndrome in Van der Woude syndrome, pediatric dentists should be familiar with the clinical signs of this disease, as well as with the possible therapeutic options that may be necessary in each case, depending on the oral manifestations.

## 26. TRAUMA IN THE PRIMARY DENTITION: CONSEQUENCES IN THE PERMANENT DENTITION

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*Introduction:* Dental trauma is today the second reason for needing pediatric dentistry care after caries. Approximately 30% of children under the age of 7 years have experienced a damaged temporary incisor. Prevention is difficult given that the etiology is accidental and the age in which this occurs. The risk of suffering development disturbances in the permanent dentition after a lesion to a deciduous tooth is based on the close relationship between the apex of the primary tooth and the permanent tooth germ.

*Material and methods:* A search of the literature was carried out on line in the Medline database with the following inclusion criteria: articles written in English, articles published between 1970 and 2011, using the keywords: "traumatic, injuries, primary, dentition, dental, trauma, sequelae".

*Results:* Luxations are the most common trauma in children under the age of four and they represent 21 to 81% of trauma in the primary dentition. Intrusion is the type of luxation that is most related to permanent teeth malformation (53.6%). The earlier the age when the trauma occurs, the higher the risk is of disturbance in the development of the successor teeth. Hypoplasia of the enamel is the most common complication. The most

common treatment for injured teeth is monitoring (39.4%) and extraction (29.3%).

*Conclusions:* The seriousness of the disturbances will depend largely on the intensity of the trauma and the age of the child. Clinical and well as radiographical monitoring should be carried out until the successors have completely erupted in order to identify any disturbance promptly.

## 27. TREATMENT IN THE CONSULTING ROOM OF VERY SMALL CHILDREN WITH CARIES

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*Introduction:* The appearance of early childhood caries is a very considerable problem for the children affected and for their families. However, it is even more so for the professionals who have the challenge of finding the cause and who have to avoid the complications that frequently arise. They have to restore health taking into account the age of the patient, the treatment difficulties and often the family's limited financial resources.

For this reason while treatment under deep and controlled sedation or general anesthesia would be the first choice, when this is not possible for a variety of reasons, we are increasingly obliged to provide the best possible care in our dental offices.

*Objectives:* The aim of this presentation is to classify the treatment of caries in very small children in dental consulting rooms in order to stop the advancement of the disease in its first phase and to stabilize oral health at a later stage.

*Material and methods:* A revision of the literature over the last 10 years was carried out in order to establish a base from which decisions could be made regarding treatment in dental offices of early childhood caries.

*Results:* Some of the general requirements are: parents need to understand the implications, limitations and inconveniences of the alternative proposed, and they should sign the right informed consent papers. The professional and his team should be prepared to supply care to very young children, and to have the facilities and experience to use advanced behavior techniques, mainly premedication, conscious sedation and effective pain techniques.

Three stages are identified: mild, moderate and severe.

We propose a diagram with steps for taking therapeutic decisions that use the combination of traditional and alternative techniques, and which includes a biological focus for caries control.

*Conclusions:*

1. Pediatric dentists should be sensitive to the problem for families of active caries in very young children.

2. Professionals are the best prepared for caring for these children in dental clinics and they should offer alternatives for disease control that are affordable for all families.

3. Parents should be encouraged to provide the care and habit changes that are necessary for stopping the progression of the caries and this prevention should be extended to the brothers of these patients and any mothers who are pregnant again.