Pediatric Dentistry

Age and curricular differences could influence clinical knowledge and perception of molar incisor hypomineralisation amongst dental professionals

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Aim: This study investigated the relationships between age, gender, cultural background and subspecialty of dentistry practiced in a group of Italian dentists and their general knowledge of clinical and epidemiological aspects of Molar Incisor Hypomineralisation.
Methods: Multiple choice questionnaires were distributed to a population sample of 398 dentists belonging to ANDI (Italian Association of Dentists), Bologna section. These questionnaires were previously validated and the data retrieved were compared to previously published data.
Results: Response rate was 63.0% (251/398). 19.1% of respondents had a dual MD-DDS degree; dentists with six years medical training-only represented 20.7%; Dental Program graduates = 45.4 %, Dental Program graduates with 1-2 year Masters degree = 14.7%.. Results from personal data evidence that mean age is 47±11 years, gender is 70% males, 36% of the population practiced for over 25 years. The majority of the respondents (85.7%) had encountered MIH clinically and 21.1% stated that MIH prevalence appears to have increased since 2001. 39.8% of the sample observed MIH affected individuals on a monthly basis. Genetic causes and antibiotic treatment to mother and/or child were mentioned as the main aetiological factors. Further information about MIH aetiology and treatment was requested by 92.4% of the sample.
Conclusions: Our sample showed the influence of age/gender and to a lesser extent of curriculum on MIH knowledge. Need for diagnostic and therapeutical training was a 75% majority of all responders (49.3% in the model questionnaire previous data); particularly 14% of the sample asked for updates on therapeutic strategies.

Evalutation of an imaging software for 3D rendering of deciduous teeth

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Aim: To evaluate the performance of a three-dimensions (3D) imaging software (3D Slicer) developed for medical surgeons, in the 3D rendering of images of deciduous teeth made by CBCT. 3D Slicer is an open source platform for segmentation, registration and 3D visualization of medical imaging data. Slicer started as a research project between the Surgical Planning Lab (Harvard) and the CSAIL - Computer Science and Artificial Intelligence Laboratory (MIT). So far this software has never been used for evaluating root canal anatomy in dentistry and more specifically in paediatric dentistry. Therefore we wanted to explore its possibilities to clearly visualize the external root surface of deciduous teeth and the relative canal configuration in three-dimensions.
Methods: Clinical CBCT images were used for the study, selecting scans previously taken for other purpose (e.g. impacted canines, odontoma) in which deciduous teeth were present. The CBCT scan had been obtained with the consent of the parents for the specific therapies. The age of young patients ranged from 6 to 14 years old . To use 3D slicer, some changes in the use and in the procedures had to be made. First import the DICOM file into software. Then crop volume for single

tooth visualization, so do the segmentation selecting a satisfying threshold. Eventually edit the segment created for remove the aberration.
Results: Results are shown by pictures, illustrating the possible achievement: root anatomy including resorption, root canal anatomy, intracanal navigation, measurements. In addition is possible export created surface in .stl file (stereo litography). With .stl file, for example students can navigate with a stl viewer application, even on their smartphone. Furthermore is possible with 3D printer make model that show root resorption and difference between anatomic apex and apical foramen.
Conclusion: 3D rendering of deciduous teeth is an interesting diagnostic and teaching tools in pediatric dentistry. The available software, even though is not specifically developed for tooth rendering, it can be used for do this and excellent results can be achieved. However it must be underlined the fact that the suggested modifications are custom made and require computer skills and knowledge to be applied. Moreover they are time consuming. Therefore the hope is that in future new specific software for dentistry could be developed, to make 3d rendering more easy and rapid to perform.

Early onset of oral abnormalities in a case of dyskeratosis congenita

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Aim: Dyskeratosis congenita (DC) is a rare, hereditary disease, which was first described by Zinsser in 1906. Later Engman and Cole et al reported other cases in detail and hence it is also known as Cole-Engman syndrome or Zinsser- Cole-Engman syndrome. DC occurs mostly in males and manifests between 5 to 12 years. Classic triad of skin pigmentation, nail dystrophy and oral leukoplakia occur in complete expression of this syndrome. Leukoplakic lesion is not uncommon in clinical practice but its occurrence as a component of a syndrome is rare. DC is a fatal condition in which majority of the patients develop aplastic anemia and malignant transformation occur in the keratotic white patches which is of considerable interest to a dentist. It is important for dentists to now about this condition as these leukoplakic lesions can spontaneously undergo malignant transformation; bone marrow involment with pancitopenia, oral and dental abnormalities may be present. Majority of cases have been reported in dermatology or pediatrics literature whereas only few reports have appeared in dental literature.
Case Report: A case of 21 months old baby is reported. At the age of 1 year a cronic asintomatic lesion of the tongue with papillary atrophy appeared. The boy was then referred to a pediatric dentist for oral evaluation: hair, nail and cutis were normal in aspect, but many oral lesions were noticed. Oral lesions consisted of extensive tongue erosions and keratosis with no hematological compromise. At that time a biopsy was decided and resulted in a diagnosis of leukoplakia. Four months later the patient developed aplastic anemia so, at that point, a genetic test to evaluate the diagnosis of Dyskeratosis Congenita was performed and a DKC1 gene mutation was confirmed. The patient underwent allogeneic bone marrow transplantation and was included in a oro-dental follow-up program to monitor the oral situation. The ortopantomography performed at the age of 4 years evidenced the presence of all the germs of the permanent teeth in normal stage of development and eruption, with no abnormalities in shape or position. No signs of bone lesions and/or dental caries were present. Currently the patient is on immunosuppressive therapy and is and periodically evaluated to monitor the hematologic situation and the oral conditions.
Discussion: Dyskeratosis Congenita (DC) is a rare pathology and requires a multidisciplinary approach. Development oral leukoplakic lesions, dental decay, hypodontia, aggressive periodontitis and intraoral brown pigmentation have been reported in literature. Furthermore, these patients are at high risk to develop oropharyngeal squamous cell carcinoma. The purpose of reporting this case is to create better awareness among dentists about the multisystem manifestations and oro-dental abnormalities of this fatal condition that can aid clinicians in early diagnosis.
Conclusion: Dentists should be able to recognize this condition in its early stages and advice appropriate hematological investigations; they could be the first to see and diagnose Dyskeratosis Congenita and have an important role in monitoring the oral malignant changes in the mucosa. For all these reason routine dental follow-up, hematological investigations and periodic biopsies are strategic in the management of such patients.

Halitosis, salivary b-galactosidases and oral health status in children who practice sport

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Aim: The aim of this work was to evaluate the association