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Failure of tooth eruption- A report of cases

Sumit Gaur

Manipal College of Dental Sciences, India

Aim: Failure of eruption (FE) is a rare condition that involves impeded eruption of teeth despite the lack of an identified local or general causative factor. This study describes management of FE in children.

Methods: Case 1- An 11 year old boy reported with a chief complain of missing upper front tooth. His medical history was not contributory. Clinical examination revealed a full complement of teeth except for 11. Radiographic examination showed unerupted 11 in the bony socket. The case was managed by a combination of surgical exposure and removable orthodontic appliance. Case 2- A 12 year old boy presented with a chief complain of missing lower back tooth. His medical history was not contributory. Clinical examination revealed missing 45 confirmed through radiographs. Tooth was surgically exposed and moved with the help of fixed orthodontic traction.

Results: Timely intervention in both the cases enabled eruption of teeth in the arch, preventing their ankylosis.

Conclusion: FE is an eruption defect, manifesting as a complete failure of eruption or cessation of initial eruption with no obvious local or systemic causative factor. Lately a genetic component has been linked to it. Conventional methods of supporting eruption of embedded teeth are often futile in FE. Therefore accurate diagnosis combined with timely intervention is imperative to achieve normal occlusion. The above cases provide an insight into the effective treatment of FE.

get2sumitgaur@yahoo.co.in

Microstrain of human root dentine after chelating agents' application

Abdillah Imron Nasution

University of Syiah Kuala, Indonesia

Objective: to determine the effect of EDTA and RcPrep to microstrain of human root dentine.

Method: Fifteen extracted human premolars were sectioned at the cemento enamel junction using a diamond bur disc. Every group was then sectioned horizontally in the third cervical, third middle and third apical to have total of 45 specimens. Based on the test solutions used, specimens were divided randomly into three groups: (1) the EDTA group: 0.05 mL of 17% EDTA for 15 minute (n=15), (2) the RcPrep group, 0.05 mL of 15 % EDTA-urea peroxide-Carbowax for 15 minute (n=15), and (3) the control group, 1 mL of 0.9% saline for 15 minute (n=15). All specimens were prepared for the determination of microstrain of root dentine using X-Ray Diffraction (XRD) analysis. The microstrain of root dentine calculated using the equation $\eta = Br \cos\theta / \sin\theta$ then statistically analyzed using regression test.

Result: Analysis of regression between control and treatment groups were significant ($P < 0.05$). The microstrain was significantly greater with 17% EDTA when compared with 15% RcPrep. In addition, based on XRD result, all specimens showed same patterns as apatite groups. The pattern of RcPrep group showed better material than EDTA group.

Conclusion: EDTA and RcPrep can contribute to improvements of microstrain of root dentine. In comparing these properties, the RcPrep showed lower effect than EDTA.

nasution@unsyiah.ac.id