



PP15: Differential diagnosis of Ankylosis and Primary Failure of Eruption

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AIM: The aim of this study is to underline the characteristics of primary failure of eruption and to point out the differential diagnosis between ankylosis and other causes of failure of eruption.

MATERIALS AND METHOD: A 15year old boy sought treatment at the Orthodontic Department of the National and Kapodistrian University of Athens, School of Dentistry. The patient underwent clinical and radiographic evaluation (figures).

RESULTS: The evaluation revealed failure of eruption of first permanent mandibular molars bilaterally.

- Differential diagnosis: mechanical failures of eruption, isolated ankylosis, primary failure of eruption, systemic or syndromic disorders.
- Mechanical failures and systemic disorders were excluded as the teeth remained unerupted after the extraction of the primary molars and the workup for any disorders was negative.
- Ankylosis affects only a single tooth in the dentition, commonly permanent first or second molar. The patient had no clinical or radiographic signs of ankylosis including a high metallic sound on percussion and absence of periodontal ligament connecting cementum to alveolar bone.
- Primary failure of eruption is a rare autosomal dominant non-syndromic disorder that causes partial or complete non-eruption of initially non-ankylosed teeth, due to a disturbed eruption mechanism. A genetic mutation in the PTH1R gene is associated with primary failure of eruption. Posterior teeth are most commonly affected, and typically, all teeth distal to the most mesial affected tooth exhibit the disorder. Orthodontic extrusion is not feasible. Adjuncts to the clinical diagnostic keys are tomographic evaluation that will prove a clear pathway, genetic tests and family history.

CONCLUSIONS: Primary failure of eruption is a rare condition that can be identified only genetically. There are some clinical findings that could make clinicians suspicious for the diagnosis, but exclusion of ankylosis and other conditions is necessary. In our patient, having rejected the other possible causes, existence of primary failure of eruption seemed probable but the patient has undergone none genetic test yet.

