

Ankylosed Teeth: Implications for Dental Health and Occlusion

Georgios Stacy*

Department of Dentistry, University of Florida, Gainesville, Florida, USA

DESCRIPTION

Ankylosed teeth are a dental condition characterized by the fusion or union of the tooth root with the surrounding alveolar bone, preventing normal tooth eruption and movement. This condition disrupts the normal physiological process of tooth development and can have significant implications for dental health and occlusion. Ankylosed teeth can occur in both primary and permanent dentitions, and their diagnosis and management require careful assessment and treatment planning.

Etiology

The exact cause of ankylosed teeth is not fully understood, but several factors have been implicated in its development. These include trauma to the tooth and adjacent bone, inflammation, genetic factors, and disruptions in the normal eruption process. Ankylosis is more commonly observed in primary teeth, particularly in cases of trauma or prolonged retention of primary teeth. In permanent teeth, ankylosis can result from various causes, such as dental trauma, infections, systemic diseases, and genetic predisposition.

Clinical features

The clinical features of ankylosed teeth can vary depending on the stage of tooth development and the location of the affected tooth. In primary dentition, ankylosed teeth may exhibit delayed eruption or failure to exfoliate naturally. The affected tooth may appear submerged compared to adjacent teeth, leading to esthetic concerns. In permanent dentition, ankylosed teeth can cause occlusal disturbances, such as infraocclusion or malocclusion, due to the lack of vertical eruption and continued growth of neighboring teeth.

Diagnosis

The diagnosis of ankylosed teeth involves a thorough dental examination, evaluation of dental and medical history, and radiographic assessments. Clinical examination helps identify the signs of ankylosis, such as lack of mobility, percussion sound, and

altered tooth positioning. Radiographic imaging, including periapical or panoramic radiographs, allows for a detailed assessment of the tooth root and its relationship with the surrounding bone.

Cone-Beam Computed Tomography (CBCT) may provide additional information regarding the extent of ankylosis and aid in treatment planning.

Treatment

The management of ankylosed teeth depends on various factors, including the age of the patient, the stage of tooth development, the location of the affected tooth, and the presence of associated dental conditions. The treatment options can be categorized as conservative, interceptive, and surgical approaches.

Conservative management

In cases where ankylosed primary teeth are detected early, a conservative approach involving regular monitoring may be adopted. This allows for the observation of spontaneous eruption or the identification of any emerging orthodontic concerns.

Interceptive treatment

Interceptive orthodontic treatment can be employed to minimize the impact of ankylosed teeth on occlusion and dental alignment. Techniques such as selective grinding, composite buildup, or use of orthodontic appliances may be employed to optimize occlusal relationships and mitigate the effects of ankylosis.

Surgical interventions

Surgical approaches are typically employed in cases of severe ankylosis or when the tooth poses significant functional or esthetic concerns. Surgical options include extraction of the ankylosed tooth and its replacement with a dental implant or a prosthetic appliance. Orthodontic treatment may be necessary to create space for implant placement or to facilitate the movement of adjacent teeth.

Correspondence to: Georgios Stacy, Department of Dentistry, University of Florida, Gainesville, Florida, USA, E-mail:stacyg@gmail.com

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Periodontal considerations

When an ankylosed tooth is extracted, careful management of the surrounding alveolar bone and periodontal tissues is crucial to preserve bone volume and ensure optimal conditions for future restorative or orthodontic procedures. Ankylosed teeth present unique challenges in dental practice, requiring a

comprehensive understanding of their etiology, diagnosis, and management. Timely detection and appropriate treatment planning are essential to minimize the potential complications associated with ankylosis, such as occlusal disturbances and esthetic concerns. Dentists, orthodontists, and oral surgeons should work collaboratively to determine the most suitable treatment approach for each individual case.