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Commentary

Classification of Supernumerary Teeth, Clinical Significance and its Management

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DESCRIPTION

Supernumerary teeth, also known as hyperdontia or extra teeth refer to the presence of an excessive number of teeth beyond the normal dental arch. These additional teeth can develop in any region of the oral cavity and can vary in size, shape, and eruption pattern. Supernumerary teeth are considered a relatively common dental anomaly, with a prevalence rate ranging from 0.1% to 3.8% in the general population. This study aims to provide a comprehensive overview of supernumerary teeth, including their occurrence, classification, etiology, clinical manifestations, and management.

Occurrence

Both the primary and permanent dentitions can have extra teeth, however the latter is where they are more frequently seen. They exhibit a slight male predilection and are frequently associated with other dental anomalies, such as impacted teeth, missing teeth (hypodontia), and developmental disorders like cleidocranial dysplasia and Gardner syndrome. Supernumerary teeth most commonly occur in the maxillary incisor region, followed by the maxillary molar region and mandibular premolar region.

Classification

Supernumerary teeth can be classified based on their location, morphology, and position relative to the normal dentition. The two main types of supernumerary teeth are supplemental and rudimentary. Supplemental supernumerary teeth resemble the normal dentition and possess a complete crown and root structure. On the other hand, rudimentary supernumerary teeth are smaller, malformed, and usually lack complete root development.

Based on their location, supernumerary teeth can be further classified as mesiodens (between the maxillary central incisors), paramolar (near molars), distomolar (distal to molars), and others. Mesiodens is the most common type of supernumerary tooth and is often associated with delayed or ectopic eruption of permanent incisors.

Etiology

The etiology of supernumerary teeth is multifactorial and not yet fully understood. Several theories have been proposed, including atavism (reversion to ancestral dental patterns), genetic factors, local hyperactivity of dental lamina, and disturbances during tooth development. Genetic studies have identified mutations in genes such as *Msh Homeobox1 (MSX1), Paired Box9 (PAX9),* and *Axis inhibition protein 2 (AXIN2)* that may contribute to the development of supernumerary teeth.

Clinical manifestations

The clinical manifestations of supernumerary teeth can vary widely. In some cases, supernumerary teeth may be asymptomatic and incidentally discovered during routine dental examinations. However, they can also cause various complications, including crowding, malocclusion, delayed or failed eruption of permanent teeth, root resorption, cyst formation, and aesthetic concerns. These complications emphasize the need for early diagnosis and appropriate management.

Management

The treatment of extra teeth is based on a number of variables, such as the type, location, and difficulties that may be present. The primary goal of treatment is to ensure the optimal alignment and eruption of permanent teeth, as well as to prevent or address any associated complications. The management options may include observation, extraction of supernumerary teeth, orthodontic treatment, and surgical intervention in cases of significant impaction or cyst formation. Supernumerary teeth are relatively common dental anomalies that can pose various clinical challenges. Early diagnosis and appropriate management are crucial to prevent complications and ensure optimal oral health. Dentists and orthodontists should maintain a high level of awareness regarding

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the occurrence, classification, etiology, and clinical significance of supernumerary teeth in order to provide timely and effective treatment for affected individuals. Further analysis is needed to better understand the underlying mechanisms and genetic factors associated with supernumerary teeth, which will contribute to improved management strategies in the future.