

General Study on Taurodontism

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Introduction

Taurodontism is a tooth abnormality defined by the enlargement of the pulp cavity of a multi-root tooth with apical displacement of the pulp bed and branching of the root. Taurodontism can be part of an isolated feature or syndrome. Morphological features of teeth are especially important when studying phylogenetic relationships and population affinities. One of the most important abnormalities in tooth morphology is taurodontism. This abnormality is a developmental abnormality of the tooth that is not contracted at the level of the Cement Enamel Junction (CEJ) and is characterized by a vertically elongated pulp cavity, apical displacement of the pulp bed, and root bifurcation. If you ever had a dental X-ray showing tooth, roots and all in a large rectangular shape instead of the usual crown with one or two prongs you might have taurodontism. This unusual dental phenomenon most often affects permanent teeth, especially molars. It isn't easy to pinpoint taurodontism's cause. Find out how to spot taurodont teeth and learn how this rare dental condition can affect your oral health. If you have a taurodontic tooth, a dental X-ray reveals the condition and you cannot even know it until the dentist diagnoses taurodontism. The exact cause of taurodontism is unknown.

Taurodont teeth have a various causes like hormonal disorders or mutations, hereditary disorders, imperfections in amelogenesis, conditions that affect the development of tooth enamel, ectoderm dysplasia, conditions affecting hair, nails, teeth and sweat glands, cell mutations or disorders, evolutionary adaptation. Taurodontism can influence certain dental treatments such as root canals, tooth extractions, teeth where the shape of the teeth and short roots make it difficult to properly fill the root canal, tooth preparation for crown or bridge, two number one germ layers. Ectoderm and mesoderm collectively with neural crest cells supply upward push to enamel. The oral ectoderm offers upward push to teeth even as the ectomesenchymal tissue contributes to the ultimate teeth structure. Several genes are expressed in teeth improvement and those are related to signalling molecules in addition to epithelial-ectomesenchymal interaction. The boom of the dental sensory nerves is needed for the established order of the mesenchymal stem cells that offer FGF expression. In turn, FGF initiates dental tissue formation. The initiation of the placement of enamel inside the dental arch

is related to early mesenchymal expression of homeobox genes.

Dental tissue is present from the 28th day of embryogenesis. The tooth lamella is the site corresponding to the dental papilla, which induces and proliferates in the underlying external mesenchymal tissue in a certain genetically determined order. Fibroblast Growth Factor (FGF) stimulates mitotic activity in odontogenic cells and promotes transcription factor expression. Taurodontism mainly occurs in the molars. During early tooth development, the continuous interaction between the epithelium and the mesenchyme ultimately leads to the formation of root dentin, cementum, and periodontal tissue. The basis of permanent molars develops from the distal process of the tooth ridge. Each tooth germ consists of an enamel organ and a dental papilla surrounded by tooth follicles.

Dental Significance of Taurodontism

In taurodontism, normal pulp tissue can cause excessive bleeding during dental treatment, and complete removal of necrotic pulp tissue can be difficult. Due to the short roots and the pulp bed located at the apex, great care must be taken not to puncture the pulp cavity and root canal. Extraction of taurodont is usually complicated by the growth of one-third of the roots at the apex. Patients with hereditary disorders require an interdisciplinary approach and may require a unique oral health care approach due to the complexity of the patient's condition and dental needs. Communication between experts helps to obtain accurate diagnoses and optimize their management efficiency. Within a comprehensive craniofacial team, dentists play an important role in achieving appropriate functional results and as a result improve the quality of life of affected patients. The development of mole radiation photographic properties similar to pediatric and young adult in the recognition of the presence of formation of open top epithelium and incomplete roots, individuals that can be diagnosed that dentin differentiation is different that will support the final diagnosis of the condition. Since the tauro derivative node required at the early stage of puncture is large and similar to the paper-out chamber, it is large and similar to that characterized by the taurodontism. So because of the deposition of secondary dentin theism may not be clear and for this reason, clinical attention is recommended when interpreted molars with occlusal wear labeled with possible voice outages.