



ABSTRACT

Taurodontism is an aberration of teeth that lacks the constriction at the level of the CEJ characterized by elongated pulp chambers and apical displacement of bifurcation or trifurcation of the roots, giving it a rectangular shape. Its occurrence in permanent teeth is common and is quite rare in deciduous dentition. A case with taurodontism involving deciduous and permanent molars is presented. A 7 ½ year old male patient reported to the dental clinic with complaint of pain in the lower left and right posterior region. OPG revealed the presence of taurodontism of deciduous first molars and the first permanent molars on both the sides. Taurodontism can occur as an isolated case or as a component of specific syndromes. In our case the patient had non-syndromic oligodontia. Most reports reveal that permanent teeth are more frequently affected than deciduous teeth. In our case both the deciduous and permanent molars were involved. As a taurodont shows wide variation in the size and shape of the pulp chamber and canal configuration, root canal therapy becomes a challenge.

Taurodontism of deciduous and permanent molars - a case report

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Figure 1.
Subclasses of taurodontism

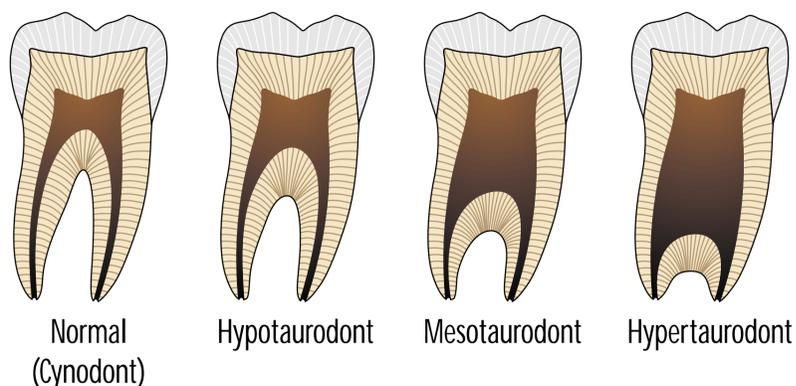
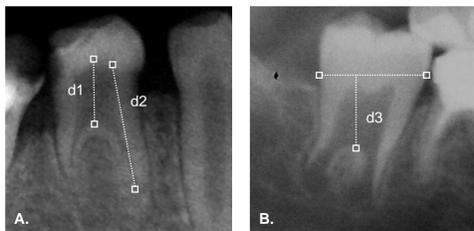


Figure 2.
X-ray criteria for taurodontism.



The determination was made only on teeth with at least half of the root developed (Shifman and Chananel method 1978). Three vertical measurements were made directly in the panoramic radiographs with a ruler.

Measurements were recorded to the nearest 0.5mm. Measure d1 was the vertical height of the pulp chamber: the distance between the lowest point of the roof of the pulp chamber and the highest point of the floor of the pulp chamber. Measure d2 was the distance between the lowest point of the roof of the pulp chamber and the apex of the longest root. These measurements were used to calculate the taurodontic index (TI). $TI = (\text{measure 1} / \text{measure 2}) \times 100$. Measure d3 was the distance between the baseline connecting the two cemento-enamel junctions and the highest point of the floor of the pulp chamber. Taurodontism was diagnosed in those molars in which the TI was above 20 or the variable d3 exceeded 3.5mm. The value of measure d3 was used in teeth with incomplete development of the roots.

Figure 3.
OPG of the affected patient revealed oligodontia and taurodontism.



INTRODUCTION

The term taurodontism was first introduced by Arthur Keith in 1913. It refers to a tooth form characterized by an external block configuration with an elongated body tending to enlarge at the expense of the root. The taurodontic teeth are identified by elongated pulp chambers and apical displacement of bifurcation or trifurcation of the roots. Due to this, the chamber has a greater apicoocclusal height than normally and lacks the constriction at the level of the CEJ giving it a rectangular shape. Etiology of taurodontism is diverse commonly attributed to the failure of invagination of the epithelial root sheath sufficiently early to form the cynodont. Autosomal transmission of the trait has also been observed. Taurodontism can occur alone limited to one or more teeth or it can be associated with various syndromes. Taurodontism may be unilateral or bilateral and affects permanent teeth more frequently than primary teeth. Taurodontism may be classified as mild, moderate and severe (Hypo, Meso and Hyper respectively) based on the degree of apical displacement of the pulpal floor (Fig. 1).

CASE REPORT

A 7 ½ year old male patient reported to the faculty with complaint of pain in the lower left and right posterior region. The first and the second deciduous molars on both sides were having deep caries. IOPA of decayed teeth revealed the presence of taurodontism of deciduous first mandibular molars on both the sides and the first lower left permanent molar (Fig. 2 a, b). OPG (after getting the consent from the parents) was performed to evaluate the entire dentition. OPG revealed oligodontia (lack of 22 permanent teeth) and one first permanent molar and four deciduous molars to be taurodontic (Fig. 3). The other permanent molars could not be evaluated as they were in their developmental stage.

DISCUSSION

Taurodontism can occur as an isolated case or as a component of specific syndromes. In this case the patients had non-syndromic oligodontia. Most reports reveal that permanent teeth are more frequently affected than deciduous teeth. In this case both the deciduous and permanent molars were involved. Mandibular molars are found to be affected more often than maxillary molars. We found taurodontism affecting both the maxillary and mandibular molars, but three of permanent molars could not be evaluated as they were in their developmental stage. As a taurodont shows wide variation in the size and shape of the pulp chamber with varying degrees of obliteration and canal configuration, root canal therapy becomes a challenge. Hence the author would like to stress on the importance of diagnostic radiographs for early identification of a taurodonts and rendering preventive care to these teeth.

