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Hypertaurodontism Involving Permanent Maxillary First Molars – A Case Report

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Abstract:

Taurodontism is a rare dental abnormality affecting mostly the permanent and primary molars and are usually found in association with other disorders or as a part of syndrome. It is caused due to the failure of Hertwig's epithelial root sheath(HERS) to invaginate at the proper horizontal level. It is characterized by wide enlarged, elongated pulp chamber with the apical displacement of pulpal floor and also it lacks the cervical constriction which is characteristic of this area with extremely short roots. [1]

In this article we are reporting a rare case of a 28 year old female patient presented with taurodontism involving the developed permanent first molars of first and second quadrants, which was not associated with any other anomalies or syndromes.

Case Report

A 28-year-old female patient reported to the department of oral and maxillofacial surgery in our institution with a chief complaint of pain in maxillary right posterior region for the past 10 days. On clinical examination, deep cavitated caries with respect to 16 was seen and the tooth was tender on percussion and the tooth was diagnosed as grossly decayed. The extracted tooth revealed a large pulp chamber (bull like) and short roots, indicating taurodontism. The patient gave the history of hypothyroidism and under medication for past 10 years. There was no relevant medical and family history which confirmed that taurodontism in this case was not associated with any other syndromes or diseases. Literature states that bilateral taurodontism is more frequent than the unilateral one, and the incidence of bilateral taurodontism is more commonly seen with maxillary first molars. A radiograph of the contralateral first molar was taken to check for bilateral taurodontism. Radiograph revealed the presence of bilateral hypertaurodontism with respect to the maxillary first molar.

INVESTIGATIONS

The radiographic(IOPA) findings revealed that minimal constriction at the level of CEJ was also noted. Apical extension of the pulp chamber below the CEJ, along with apical displacement of bifurcation of roots was seen. There was enlargement of the crown at the expense of roots.

An orthopantomograph revealed that the permanent maxillary molar presented with enlarged pulp chambers with short roots such that the distance from the bifurcation of the roots to the CEJ was greater than the cervico-occlusal distance.

Discussion

'Taurodontism' is a term used to describe the unusual tooth form which was coined by keith in 1913. He defined taurodontism as 'a tendency for the body of the tooth to enlarge at the expense of the roots. It is a tendency to assume the condition seen in the bulls.' The term's origin is from the Greek word tauros, which means 'bull', and the word odontos, which refers to 'tooth'.[1]

In 1928, Shaw classified 3 subtypes of the condition as 'hypotaurodontism', 'mesotaurodontism' and 'hypertaurodontism. Hypertaurodontism consists of prismatic or cylindrical forms where the pulp chamber nearly reaches the apex and then breaks up into two or four channels. In Mesotaurodontism, pulp is quite large and the roots are short, but still separate. Hypotaurodontism is the moderate enlargement of the pulp chamber at the expense of the roots.[2]

The incidence of taurodontism has been reported to be lower than 1% in modern man and 3% in primitives, Eskimos and American Indians. [1]

Main cause of taurodontism is diverse and is commonly attributed to the failure of invagination of the epithelial root sheath.This anomaly is associated with certain disease such as hypophosphatasia or alterations of the sex chromosome such as Klinefelter's syndrome, Down's syndrome, X-chromosome aneuploid syndrome with ectodermal defects, Mohr's syndrome, tricho-dento-osseous syndrome and Maroteaux-Lamy syndrome.[5]

Conclusion

Taurodont teeth show wide variations in the size and shape of pulp chambers, varying degrees of obliteration and canal complexity, low canal orifices, and the potential for additional root canal systems.

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