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RESEARCH ARTICLE

MESOTAURODONTIC PRIMARY SECOND MOLARS: A CASE REPORT

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Abstract

The prevalence rate of taurodontism is variable in both adults and children, approximately 0.5-46% and 0.3%. Based on the displacement of the pulpal floor, the taurodontic teeth are classified by Shawashypotaurodontic, mesotaurodontic, and hypertaurodontic. According to Seow and Lai, taurodontic teeth were also classified using a biometric method. A tooth with a Crown Body and Root ratio of >1.10 was categorised as taurodontic. Endodontic treatment of taurodontic teeth is a difficult task. This article discloses, a 5-year-old child with a bilateral Mesotaurodontic primary second molar.

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Introduction:-

Taurodontism was termed by Sir Arthur Keith in 1913. It is a developmental dental anomaly that lacks normal constriction at the cemento-enamel junction, which is characterized by elongated larger pulp chambers with the apical displacement of its floor and furcation of its roots. The etiology is unclear but assumed to be the failure of Hertwig's epithelial diaphragm to invaginate at an appropriate horizontal level, resulting in a tooth with an elongated body, enlarged pulp, short roots, and normal dentin^{1,2}.

The syndromes associated with taurodontism are amelogenesis imperfecta, Down's syndrome, ectodermal dysplasia, Klinefelter syndrome, tricho-dento-osseous syndrome, Mohr syndrome, Wolf-Hirschhorn syndrome, and Lowe syndrome³. The clinical diagnosis is impracticable, so the better and the ideal way for identification is through radiograph. This paper discloses a case with bilateral mesotaurodontism involving maxillary and mandibular deciduous second molars.

Case Report

A female patient of 5-year-old who reported to the Outpatient clinic of the Department of Pedodontics and Preventive Dentistry, had a chief complaint of extraoral swelling and pain on the lower left back tooth for the past 2 days. The dental or medical history of the patient was non-contributory and her developmental milestones were normal. On intraoral examination, a bilateral deep carious lesion in the mandibular deciduous second molar (75,85) was appreciated. The teeth were tender on vertical percussion with observable swelling and no sinus tract. IOPA revealed that mandibular left and right primary second molars (75,85) had an enlarged pulp chambers with short

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roots [Fig. 1,2]. The Crown body and root ratio of 75, 85 were measured using Adobe photoshop CS6 extended, which was around 1.45 and 1.58, respectively, and classified as Mesotaurodont⁴, according to Seow and Lai classification [Fig. 3a,b]. Both clinical and radiographic findings revealed adento-alveolar abscess of Mesotaurodontic mandibular deciduous second molars (75,85). Multi-visit pulpectomy followed by placement of a stainless steel crown was planned. The tooth was anesthetized and the access was opened. The pulp tissue was extirpated and irrigated with 2.5% sodium hypochlorite. A working length was estimated and biomechanical preparation was done followed by obturation with Endoflas FS (Sanlor and Cia. S.en C.S., Cali, Colombia) [Fig. 4a, b]. The pulpectomy was followed by restoration of the teeth with the placement of stainless steel crowns [Fig. 5].

Orthopantomograph (OPG) revealed that 55, 65, 75 and 85 had enlarged pulp chambers with short roots, suggestive of taurodontism [Fig. 6].

Discussion:-

There are different classification systems to assess the severity of taurodontism, in this case report we have used Seow and Lia⁴ classification system and categorised it as mesotaurodontic, the ratio of crown body and root of the teeth were 1.45 and 1.58 (<2.0). The mandibular primary molars were measured because the outline is clear. The root morphology of the maxillary molars was superimposed on the zygomatic bone, causing burdensome to calculate the Crown Body and root ratio. The differential diagnosis of taurodontism is dentine dysplasia, which has similar radiographic features with a larger pulp chamber. This condition is less appreciated in elderly people and those with a fibrous diet, because of the deposition of secondary and tertiary dentine⁵.

Access opening was similar to a normal tooth, but the procedures like orifice location, pulp extirpation, negotiation, instrumentation, and obturation were challenging. Increased hemorrhage during access opening may be mistaken for perforation. Because of the complexity of the root canal anatomy, complete filling of the root canal system in taurodontic teeth is challenging. In this case report, Endoflas FS (Sanlor and Cia. S.en C.S., Cali, Colombia) was used as an obturating material because of its better resorbable properties similar to the natural primary root and to prevent the fast resorbable, hollow tube effect caused by other obturating materials.

Figures:



Fig 1: IOPA of Carious 75



Fig 2: IOPA of carious 85

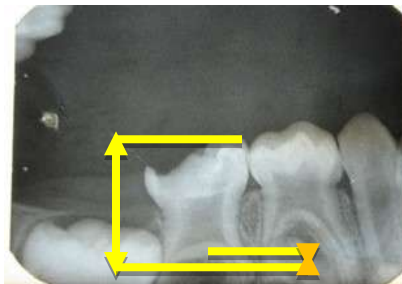


Fig 3a: Crown body, Root ratio of 85



Fig 3b: Crown body, Root ratio of 75



Fig 4a:- Obturated 85



Fig 4b:- Obturated 75.



Fig 5:- Mandibular occlusal view after placement of stainless steel crown.



Fig 6: Mesotaurodontic primary upper and lower second primary molars.

Conclusion:-

It is very essential to be aware of all dental anomalies especially, which are difficult to diagnose like taurodontism, which helps to detect any associated syndromes and other systemic conditions.

Declaration of parent consent

Informed consent forms were written and obtained from parents reporting to publish their daughter's images and clinical information.

Why this paper is important?

1. To provide knowledge on the dental anomaly which is difficult to diagnose.
2. Classifying the anomaly might help in treatment planning.
3. Difficulties encountered in treating this anomaly are discussed.

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