CASE REPORT

Bilateral taurodontism in primary dentition with hypodontia

Marappan Natarajan Surendar, Ramesh Kumar Pandey, Richa Khanna

Department of Pedodontics with Preventive Dentistry, King George's Medical University, Lucknow, Uttar Pradesh, India

Correspondence to

Dr Surendar MN, surendar_mn@yahoo.co.in

SUMMARY

Taurodontism is a rare dental anomaly in which there is an enlarged pulp chamber at the expense of roots with apical displacement of the pulpal floor, giving it a rectangular shape. It is caused by the failure of Hertwig's epithelial root sheath to invaginate at the proper horizontal level. Taurodontism has been reported as an intraoral feature of several syndromes like Down syndrome, Klinefelter syndrome, Smith-Magenis syndrome, Hurler syndrome, etc. Association of taurodontism with hypodontia in permanent dentition has also been reported. Taurodontism in primary dentition and its association with hypodontia is very rarely reported in the literature. The present case illustrates bilateral taurodontism of primary mandibular molars with hypodontia in maxilla.

BACKGROUND

Taurodontism in primary molars and its association with hypodontia have rarely been reported.¹ Although their association in permanent dentition has been studied, their correlation in primary dentition needs to be explored for better management at an early stage, and clinicians can be alerted to the possibility of this dental anomaly and syndromes in patients with missing teeth.²⁻³ Hence, we report this case to motivate further studies to find their correlation.

CASE PRESENTATION

A 5-year-old boy reported to the Department of pedodontics with preventive dentistry, Faculty of Dental Sciences, King George's Medical University, Lucknow, India with a chief complaint of pain and swelling in the gums in relation to the right mandibular back teeth region. Intraoral examination revealed a small swelling with discharging sinus in the attached gingiva in relation to the right mandibular first primary molar (84) and was observed to be deeply carious with grade 2 mobility.⁴⁻⁶ Intraoral periapical radiograph (IOPA) revealed the tooth to be a taurodontic with periapical radiolucency and additional radiolucent areas around the tooth. The periapical radiolucency was in close proximity to the corresponding permanent tooth bud (figure 1). On further investigation, an orthopantomogram also showed the contralateral mandibular first primary (74) molar to be taurodontic (figure 2).

Taurodontism manifests usually with hypodontia. In this patient, both the primary and permanent right maxillary lateral incisors (52, 12) were found to be missing (figure 2). The extraction of the

Figure 1 Intraoral periapical radiograph of the right mandibular primary first molar (84) showing taurodontism.

carious tooth (84) was preferred in order to save the permanent tooth bud. The extracted primary tooth showed a normal coronal portion with lack of marked cemento-enamel junction. The radicular portion showed a large trunk with the absence of furcation and roots (figure 3). Overall, the extracted tooth seems like a cylindrical structure without roots. The patient was given a band and loop space maintainer to prevent space loss.

INVESTIGATIONS

IOPA of the right mandibular first primary molar (84) was performed for the complaint of pain and swelling in the associated region and the presence of deep caries and grade 2 mobility. It showed the presence of taurodontism and periapical radiolucency. An orthopantomogram was further advised which showed the contralateral mandibular first primary (74) molar also to be taurodontic.

Figure 2 Orthopantomograph of the patient showing contralateral taurodontic primary first molar (74) and missing upper right lateral incisors (52, 12).

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Figure 3 Extracted right mandibular primary molar (84) with large trunk and small roots.

TREATMENT

Extraction was performed to protect the permanent tooth bud.

OUTCOME AND FOLLOW-UP

The patient was scheduled for a 6-month follow-up to evaluate the eruption of the permanent tooth bud.

DISCUSSION

Taurodontism is generally considered to be a component of a specific syndrome. In the present case, it occurs as an isolated anomaly. Shifman and Chanannel⁷ gave the taurodontic index to define different classes of taurodontism biometrically. Many authors have advocated that permanent teeth are more frequently affected than primary teeth,⁸ but in the present case, there is an unusual occurrence of bilateral taurodontic primary molars (figure 2). Both the primary molars were categorised as hypertaurodont teeth. In the present case report, the permanent teeth were in the developing stage, and hence they were not analysed. An orthopantomogram of the patient revealed missing deciduous and permanent right lateral incisors (figure 2). Seow and Lai⁹ stated a correlation between taurodontism and hypodontia analysing mandibular first permanent molar for taurodontism and correlated with hypodontia. Further studies are needed to find out the correlation between taurodontic primary teeth and hypodontia. Root canal therapy in a taurodontic tooth is a challenge due to the large pulp chamber and small roots.¹⁰ The root canal treatment in primary teeth is further complicated due to various levels of resorption of their small

roots. Hence, the early identification of taurodonts through radiographs and rendition of preventive care is of utmost importance. The correlation between hypodontia and taurodontic primary teeth needs to be explored for better management at an early stage.

Learning points

- ▶ Diagnosis of taurodontic teeth can be missed in routine clinical examination.
- ▶ Hypodontia in primary and permanent teeth may be correlated.
- ▶ Correlation between hypodontia and taurodontism may help in early diagnosis of taurodontic teeth.
- ▶ Early diagnosis of taurodontic teeth is important as their internal anatomy present a great challenge to endodontic treatment, especially in primary teeth.

Competing interests None.

Patient consent Obtained.

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