Available online at www.sciencedirect.com

Pediatric Dental Journal

journal homepage: www.elsevier.com/locate/pdj

Case Report

Permanent mandibular incisor with multiple anomalies – Report of a rare clinical case

Treville Pereira M.D.S.[a,*], *Subraj Shetty M.D.S.*[a,1], *Svylvy Pereira B.D.S.*[b,2]

[a] *Dept of Oral & Maxillofacial Pathology and Microbiology, Dr. D.Y. Patil Dental College & Hospital, Sector 7, Nerul, Navi Mumbai, Maharashtra 400706, India*

[b] *1101, Maruti Mount View, Sector 8-B, C.B.D., Belapur, Navi Mumbai, Maharashtra 400614, India*

ARTICLE INFO

Article history:
Received 11 August 2013
Received in revised form
13 November 2013
Accepted 30 December 2013
Available online 1 April 2014

Keywords:
Anomalies
Dens invaginatus
Mandibular incisor
Talon cusp
Macrodontia

ABSTRACT

Background: Morphological alterations in tooth structure involving either crown or root are common in the literature. But co-occurrence of multiple anomalies in a permanent mandibular central incisor is extremely rare.

Case report: This paper reports an unusual combination of multiple dental anomalies—talon cusp, dens invaginatus and macrodontia affecting both the crown and root of a permanent mandibular left central incisor of a 12-year old Indian boy. Case management has been described and the implications are discussed.

Conclusion: Diagnosis and treatment of teeth affected by multiple anomalies is a challenging proposition, requiring careful clinical and radiographic interpretation.

Copyright © 2014 The Japanese Society of Pediatric Dentistry. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Morphological variations of dental structure involving either crown or root are common in the literature. Talon cusp is a relatively rare developmental anomaly of tooth shape. It has been defined as an additional cusp that projects predominantly from the labial or lingual surface of primary or permanent teeth. It extends at least half the distance from the cemento–enamel junction (CEJ) to the incisal edge [1].

Dens invaginatus is also a rare developmental anomaly defined as a deep surface invagination of the crown or root, which is lined by enamel and resulting from the invagination of the enamel organ into the dental papilla during odontogenesis [2]. The occurrence of dens invaginatus in mandibular teeth is very rare.

Macrodontia is the term applied when teeth are physically larger than usual. Macrodontia of a single tooth is relatively uncommon, but it is occasionally seen and is of unknown etiology [3]. Macrodontia of anterior teeth, caused by fusion or

* *Corresponding author*. Department of Oral and Maxillofacial Pathology, Dr. D.Y. Patil Dental College & Hospital, Dr. D.Y. Patil Vidyanagari, Sector 7, Nerul, Navi Mumbai, Maharashtra 400706, India. Tel.: +91 9821281458; fax: +91 2227709590.

E-mail addresses: trevillepereira@gmail.com (T. Pereira), docsubu@yahoo.com (S. Shetty), svylvyp@yahoo.com, svylvyp@gmail.com (S. Pereira).

[1] Tel.: +91 9920289839; fax: +91 2227709590.

[2] Tel.: +91 9821789895; fax: +91 2227574651.

http://dx.doi.org/10.1016/j.pdj.2013.12.006

0917-2394/Copyright © 2014 The Japanese Society of Pediatric Dentistry. Published by Elsevier Ltd. All rights reserved.

gemination, may be associated with other dental anomalies such as dens-in-dente, hypodontia, and supernumerary teeth. The tooth may appear normal in every aspect except for its size [3]. Macrodontia of only mandibular central incisor is a rare finding.

Although co-occurrence of talon cusp and dens invaginatus has been reported, their occurrence together with another anomaly like macrodontia in the same tooth has never been reported.

This paper reports an unusual combination of multiple dental anomalies—talon cusp, dens invaginatus and macrodontia affecting both the crown and root of a permanent mandibular left central incisor of a 12-year old Indian boy.

2. Case report

A 12 year old Indian boy was accompanied by his parents to our dental clinic, at Airoli, Navi Mumbai, Maharashtra, India, with a complaint of pain in the lower left front tooth region. Intra-oral examination revealed a permanent dentition with a fair oral hygiene. The pain was of moderate intensity, intermittent in nature and was present since one month. There was a draining sinus associated with the permanent mandibular left central incisor.

General health of the patient was normal, and there was no apparent manifestation of any systemic, genetic and syndromic disorders. The family history was non-contributory. The permanent mandibular left central incisor appeared larger in size with different crown morphology as compared with the contralateral incisor (Fig. 1). Talon cusp was observed on the lingual surface of the same tooth.

Patient was subjected to Intra-Oral Peri Apical (IOPA) Radiograph in relation to 31, which revealed an enlarged morphology of crown, root and an enlarged pulp space (Fig. 2a). The crown appeared to be bulbous and conical in shape. Buccal surface of the crown showed the presence of a normal radio-opaque enamel and dentin with a normal radiolucent pulp chamber ascending into the pulp canal. On the lingual aspect the cingulum appeared to be magnified. Presence of a channel lined by a varied thickness of enamel within the cingulum which descends to form a larger dilated pulp canal suggestive of a dens-in-dente/dilated odontoma was noticed. A radiographic diagnosis of coronal dens invaginatus type III was considered.

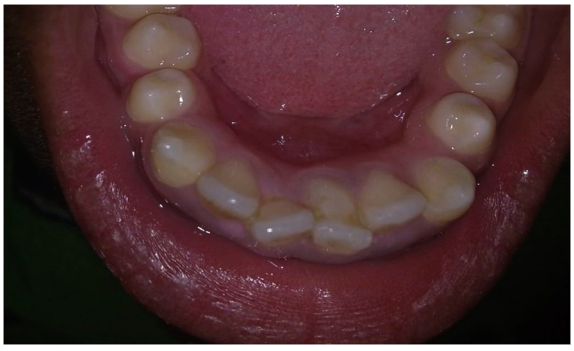

Fig. 1 – Mandibular left central incisor with abnormal crown morphology.

Since the tooth showed large periapical radiolucency with an associated draining sinus, it was extracted under local anesthesia. The extracted specimen showed an enlarged coronal morphology of the central incisor along with a bulbous radicular portion of the root (Fig. 3a,b).

Radiograph of the sectioned specimen also confirmed the presence of enamel like structures on the inner surface of the pulp chamber (Fig. 2b). The periapical tissue was curetted and sent for histopathological evaluation, which revealed features of a periapical granuloma.

Finally, the case was diagnosed as a tooth associated with multiple anomalies i.e. talon cusp (type 3), dens invaginatus (type III B) and macrodontia. The wound healing was uneventful and the tooth was prosthetically replaced.

3. Discussion

Single tooth affected with three dental anomalies involving both crown and root is not reported in the literature.

Although dens invaginatus and talon cusp may occur as isolated findings, they may occur with other tooth anomalies. Dens invaginatus with microdontia, macrodontia, taurodontism, amelogenesis imperfecta have been published. Similarly talon cusp with peg shaped lateral incisors, mesiodens, complex odontoma or megadont have also been reported [2]. However, the occurrence of both talon cusp and dens invaginatus in a single tooth is extremely rare.

Talon cusp on mandibular teeth is rare [4]. It affects both sexes either unilaterally or bilaterally. The permanent dentition is more often affected than the primary dentition, with the maxillary incisors being the most frequently involved teeth.

The etiology of talon cusp remains unknown, but it seems to have both genetic and environmental components. It is believed that the talon cusp originates during the morphodifferentiation stage of tooth development, where it may occur as a result of the outward folding of the inner enamel epithelial cells, and transient focal hyperplasia of the peripheral cells of the mesenchymal dental papilla [5].

Many clinical problems may be encountered with talon cusp which include compromised esthetics, occlusal interference, irritation to tongue during mastication and speech [6].

In the present case, this anomaly did not cause any problem to the patient.

Dens invaginatus is usually detected on routine radiographic examination. Radiographically, it appears as an unfolding of a radiopaque ribbon-like structure or pear-shaped structure with equal density as enamel [2].

Several theories have been put forward to elucidate the pathogenesis of dens invaginatus. A failure of growth of inner enamel epithelium with the surrounding normal epithelium continuing to proliferate, engulfing the static area has been proposed as one of the cause. On the other hand, Rushton et al., proposed that hyper-proliferation of inner enamel epithelium rather than retardation to be an etiological factor [7]. Mechanical factors like growth pressure leading to buckling of tooth germ and trauma and a twin theory suggesting fusion of two tooth germs have also been suggested. The

Download English Version:

https://daneshyari.com/en/article/3171509

Download Persian Version:

https://daneshyari.com/article/3171509

Daneshyari.com