

Premolarized double dens in dente in albinism – a case report

SUPRABHA B.S.*

Abstract

Dens in dente are known to be associated with many dental abnormalities such as taurodontism microdontia, gemination, and dens evaginatus. This paper describes a rare case of double dens in dente in a lateral incisor with crown morphology similar to a premolar present in a patient with features of albinism. Problems associated with this condition and their management is discussed.

Key words: Albinism, Double dens in dente, Premolarization

Maxillary lateral incisors are the commonest teeth that re-affected by developmental anomalies like congenitally missing teeth, cuneiform teeth, supernumerary teeth, dens invaginatus and talon's cusp.^[1]

Dens invaginatus or dens in dente are a developmental anomaly resulting from the invagination of enamel organ into the dental papilla, before the mineralization of dental tissues occurs.^[2] Oehlers^[3] classified dens invaginatus into three categories according to the depth of penetration and communication with the periodontal ligament or periapical tissue. Type 1 is an enamel-lined cavity confined to the crown and not extending beyond the cemento enamel junction. Type 2 is an enamel-lined cavity extending into the root and there may/may not be communication with pulp. Type 3 is an invagination extending beyond the cemento enamel junction perforating apically or laterally at a foramen and usually there is no communication with the pulp.

Any teeth in the maxillary or mandibular arch may be affected, but maxillary lateral incisors are the commonest teeth that are affected. Clinically, it appears as a deep lingual pit susceptible to caries. Because there is often only a thin layer of enamel and dentin covering the pulp, it is susceptible to pulpal necrosis and periapical pathology. The patient is usually unaware of this condition and the condition is detected by chance with the help of intra-oral periapical radiograph.^[1,4] Radiographically, it is seen as a loop-like or pear-shaped defect lined by a radio opaque line with density equal to that of enamel, resembling a tooth within a tooth. In severe forms of invagination, the crown is malformed and an open apex is present.^[2,5]

Dens in dente are known to be associated with other abnormalities such as taurodontism, microdontia, gemination,

supernumerary tooth and dentinogenesis imperfecta.^[6] Kantapura and Gorlin^[7] reported a case of an extremely rare condition of molarized bilateral maxillary central incisors with dens in dente. Noikura et al.^[8] reported a case of bilateral double dens in dente of multi-tuberculated maxillary supernumerary central incisors with a central cusp. This paper describes a rare case of double dens in dente associated with anomalous lingual tubercle in a patient with features of albinism.

Case Report

A 13-year-old male patient reported to the dental clinic with complaints of irregular teeth. On examination, it was noted that he had features of albinism such as congenital absence of pigmentation of skin, hair and eyes [Figure 1]. He also had decreased visual acuity and photophobia suggesting that the albinism is of oculocutaneous type. Family history was negative but there was history of consanguineous marriage. Oral examination revealed severe malocclusion with severe crowding of upper and lower anterior and increased over jet. The upper left permanent lateral incisor (22) had abnormal morphology, i.e., it appeared more like a premolar with an accessory cusp on the lingual side which was connected to the labial aspect occlusally by a prominent transverse ridge. There were two deep pits on either side of the ridge, which showered evidence of decay [Figures 2 and 3]. A routine orthopantomogram showed abnormal root morphology of the lateral incisor [Figure 4]. An intra oral periapical radiograph revealed double dens in dente. The root showed abnormal curvature and the apex was closed [Figure 5]. The two decayed pits were restored with glass ionomer [Figure 6]. No endodontic treatment was performed, because there was no pulpal involvement. The patient was referred to an orthodontist for treatment of malocclusion.

Discussion

No dental anomalies have been reported in patients with

*Assistant Professor, Department of Pedodontics and Preventive Dentistry, Manipal College of Dental Sciences, A constituent of MAHE, Mangalore, Karnataka, India



Figure 1: Photograph of the patient showing features of albinism

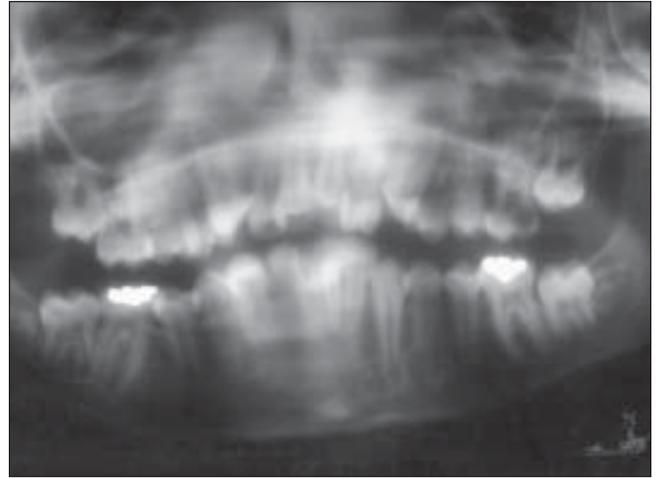


Figure 4: Orthopantomogram shows abnormal root morphology of 22



Figure 2: Photograph shows abnormal morphology of erupted tooth in 22 region



Figure 5: Intraoral periapical radiograph showing features of double dens in dente in 22



Figure 3: Occlusal surface of 22 resembles a premolar



Figure 6: 22 was restored with glass ionomer

oculo cutaneous albinism except for the occurrence of enamel hypoplasia in brothers with albinism in both primary and permanent dentition.^[9,10] In the case presented here, the patient with oculocutaneous albinism had an upper maxillary lateral incisor showing features of both dens invaginatus and dens evaginatus, which is a rare phenomenon. The present case was an example of type 2 dens invaginatus as described by Oehlers. It was classified as double dens in dente because there were two-enamel-lined invagination cavities in the pulp cavity of this tooth, as revealed by the radiograph. The simultaneous occurrence of dens in dente with dens evaginatus in this case may suggest a common etiologic factor in these two related anomalies.^[8] Osborn^[11] used the term *rectigradation* in referring to such variations as origin of new cusps or cuspules that he believed to result from latent homologies in teeth. He used the term *multi tuberculism* or *polybunodonty* to describe teeth with indefinitely multiplied cuspules.

In the case described here, the problems associated with malformed left maxillary lateral incisor are poor esthetics, possible interference with occlusion after completion of orthodontic treatment, and pulpal pathology due to the dens invagination. If interference with occlusion occurs after orthodontic treatment, lingual cusp will have to be reduced. As the radiographs indicated pulp horn extension into the cusp, endodontic treatment may be necessary in case of pulp exposure after cuspal reduction. The endodontic management can be challenging owing to the abnormal pulpal morphology.^[12]

The occurrence of apical root resorption during orthodontic treatment is a well known adverse effect due to local over compression of periodontal ligament.^[13] Certain morphological characteristics including dens invagination predispose the tooth to root resorption during orthodontic treatment. The pulp in the invaginated canals is predisposed to infection resulting in apical breakdown. This apical breakdown may be aggravated by orthodontic forces.^[14] Hence, sealing the invaginated areas with suitable restorative material like glassionomer is important and this was done in the present case. Periodic radiographic examinations are

necessary to monitor root resorption during orthodontic treatment and rule out occurrence of periapical pathology.

References

1. Su-Chia Yeh, Yyg Tzertin, Shin Yulu, Dens invaginatus in the maxillary lateral incisor, *Oral Med Oral Pathol Oral Radiol Endod* 1999;87:628-31.
2. Shafer WG, Hine MK, Levy BM. *A Text Book of Oral Pathology*, 4th edn. Philadelphia: WB Saunders 1983;41-2.
3. Oehlers FA, Dens invaginatus, variations of the invagination process and associated anterior crown forms, *Oral Surg Oral Med Oral Pathol* 1957;10:1204-18.
4. Chen YM, Tseng CC, Harn WM. Dens invaginatus, Review of formation and morphology with 2 case reports, *Oral Surg Oral Med Oral Pathol* 1998;86:347-52.
5. Benenati FW. Complex treatment of a maxillary lateral incisor with dens invaginatus and associated aberrant morphology, *J Endod* 1994;20:180-2.
6. Vajrabhaya L. Non surgical endodontic treatment of a tooth with double dens in dente: *J Endod* 1989;15:323-5.
7. Kantapura PN, Gorlin RJ. Double dens invaginatus of molarised maxillary central incisors, premolarisation of maxillary lateral incisors, multituberculism of mandibular incisors, canines and first premolars and sensorineural hearing loss, *Clin Dysmorphol* 1992;1:128-36.
8. Noikura T, Ooya K, Kukuchi M. Double dens in dente with a central cusp and multituberculism in bilateral maxillary supernumerary central incisors, *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1996;82:466-9.
9. Hall RK. *Pediatric Orofacial Medicine and Pathology*, 1st edn., London: Chapman and Hall Medical 1994;201-2.
10. Odom RB, James WD, Berger TG. *Andrews diseases of the skin, clinical dermatology*, 9th edn. Philadelphia: WB Saunders 2000;1069-71.
11. Osborn HF. *Evolution of mammalian molar teeth*, New York : Macmilan 1907;229-37.
12. Pecora JD, Cornado CA, Zucolitto WG, Sousa Neto MD, Saquy PC. Root canal therapy of an anomalous maxillary central incisor: a case report, *Endod Dent Traumatol* 1993;9:260-2.
13. Bender IB, Byers MR, Mari K. Periapical replacement resorption of permanent vital endodontically treated incisors after orthodontic tooth movement, Report of two cases, *J Endod* 1997;23:768-73.
14. Fristad I, Molven O. Root Resorption and apical breakdown during orthodontic treatment of a maxillary lateral incisor with dens invaginatus, *Endod Dent Traumatol* 1998;14:241-4.

Reprint requests to:

Dr. Suprabha B.S.
'Shreyas', 5th Cross Road,
Shivabagh, Kadri, Mangalore – 2, Karnataka, India