

Case Report

Dens Invaginatus with Occult caries: A Clinical Challenge

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Abstract:

Developmental malformation resulting from invagination of enamel organ into dental papillae which begins at the crown and sometimes extends into the root before occurrence of calcification is known as dens invaginatus. A 12 year old male patient reported to department of Paedodontics and preventive dentistry for routine checkup. Maxillary and mandibular posterior teeth were affected by moderate caries and maxillary central and lateral incisors which were affected by hidden caries along with type I Dens Invaginatus. Diagnosis of Occult caries along with dens invaginatus is a challenge for the practitioner. After excavation of caries Composite resin restoration followed by pit and fissure sealants was done in all maxillary incisors.

Key words: Developmental malformation of teeth, Dens in dente, hidden caries.

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Introduction

There are multiple developmental malformations of teeth. Developmental malformation resulting from invagination of enamel organ into dental papillae which begins at the crown and sometimes extends into the root before occurrence of calcification is known as dens invaginatus.¹ Alanic and Bishop stated that dens invaginatus is more appropriate term because the outer portion of enamel infolded

into the inner dentine portion thereby creating a pocket or a dead space.² The term dens invaginatus was first given by hallet.³ He published the first classification of invaginated teeth in 1953.⁴ Oehlers had proposed a classification in 1957 which described this anomaly in three form. This classification is commonly used.^{3,5} classification is as follows

Type I: An enamel-lined minor form occurring within the confines of the crown not extending beyond the cemento-enamel junction.

Type II: An enamel-lined form which invades the root but remains confined as a blind sac. It may or may not communicate with the dental pulp.

Type III A: A form which penetrates through the root and communicates laterally with the periodontal ligament space through a pseudo-foramen. There is usually no communication with the pulp, which lies compressed within the root.

Type III B: A form which penetrates through the root and perforating at the apical area through a pseudoforamen. The invagination may be completely lined by enamel, but frequently cementum will be found lining the invagination.

A radicular form of invagination was described by Oehlers in 1958.⁶ This type of invagination is rare.⁷ Schulze & Brand in 1972 included invaginations starting at incisal edge or at the top of the crown and they also described dysmorphic root configuration. The prevalence of dens invaginatus ranges from 0.04%-10%. The teeth most affected are permanent maxillary lateral incisors and 43% of cases were reported with bilateral occurrence in maxillary lateral incisors.⁴ Maxillary lateral incisors were the most commonly affected teeth (88.3%), followed by maxillary canines (21.7%) in north Indian population.⁸

Case Report

A 12 year old male patient reported to Department of Paedodontics and preventive dentistry for routine checkup. (Figure 1) There was no relevant medical history present. On clinical examination moderate caries involving maxillary and mandibular

posterior teeth were found. In maxillary central and lateral incisors stained deep pits were also present in cingulum area. (Figure 2)



Figure 1: Profile view



Figure 2: Preoperative maxillary central and lateral incisors showing stained deep palatal pits.

Investigations

Intraoral periapical radiograph was taken for maxillary incisors which revealed in folding of enamel and dentine not extending up to pulp suggestive of type I dens invaginatus in maxillary incisors. Radiolucency were seen in crown of maxillary lateral incisors extending up to dentin suggestive of occult caries. (Figure 3 and 4)



Figure 3: IOPA of right Maxillary Central and Lateral Incisors showing dens invaginatus

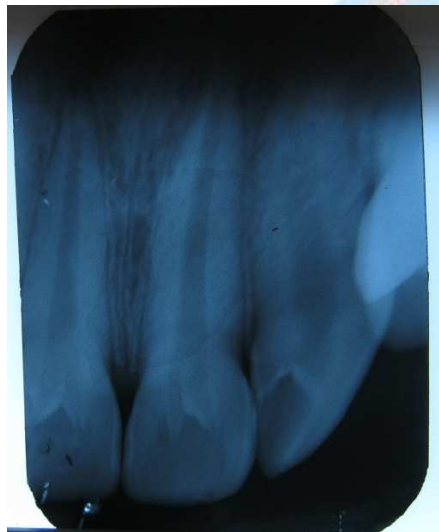


Figure 4: IOPA of left Maxillary Central and Lateral Incisors showing dens invaginatus

Differential Diagnosis of Dens evaginatus and Talons cusp were considered.

Treatment

It was decided to excavate caries from the maxillary incisors and to restore it with preventive resin restoration. Restorations of

maxillary and mandibular posterior teeth were planned. On excavation of caries in maxillary incisors, lateral incisors which were clinically seemed to be affected by mild caries were unusually found to be affected by occult carious lesion extending up to dentine while central incisors were affected by caries restricted to enamel. (Figure 5) Composite resin restoration followed by pit and fissure sealants was done in all maxillary incisors. (Figure 6)



Figure 5: Extension of carious lesions in Maxillary Central and Lateral Incisors



Figure 6: Restored Maxillary Central and Lateral Incisors

Discussion

In most case dens invaginatus is accidentally detected on radiograph. Sometimes affected teeth may not show any clinical signs of malformation but a deep foramen coecum or palatal pit may be considered as an important finding. Maxillary lateral incisors are most commonly affected with this kind of malformation, so they should be checked clinically as well as radiographically. Both

bilateral teeth should be investigated if one side teeth are found to be affected. As pulpal involvement of teeth with coronal invaginations may occur a short time after tooth eruption early diagnosis is mandatory.⁹ An Occult Caries which is also known as Hidden caries to describe dentine caries that is not identified with a visual examination, but is large and demineralised part of tooth.¹⁰ In the present case, radiographs were properly used for the diagnosis of hidden caries, which seemed clinically like a stained pits. Because of this finding finally treatment plane was changed and described treatment was done.

References

1. Colak H, Tan E, Aylikci BU, Uzgur R, Turkal M, Hamidi MM. Radiographic Study of the Prevalence of Dens Invaginatus in a Sample Set of Turkish Dental Patients. *J Clin Imaging Sci* 2012; 2:34.
2. Bishop K, Alani A. Dens invaginatus. Part 2: clinical, radiographic features and management options. *International Endodontic Journal*, 41, 1137–1154, 2008.
3. Hallett GEM. The Incidence, Nature and clinical significance of palatal invaginations in the maxillary incisor teeth. *Proceeding of Royal Society of medicine section of odontology*. 1953; 46:491-99.
4. Munir B, Tirmazi SM, Majeed HA, Khan AM, Iqbalbangash N. Dens invaginatus: aetiology, classification, prevalence, Diagnosis and treatment considerations. *Pakistan Oral & Dental Journal* 2011; 31(1):191-98.
5. Oehlers FAC. Dens invaginatus. Part I: variations of the invagination process and association with anterior crown forms. *Oral Surg Oral Med Oral Pathol* 1957; 10:1204–18.
6. Oehlers FA. The radicular variety of dens invaginatus. *J Oral Surg Oral Med and Oral Pathol Oral radiolendod* 1958; 11:1251-60.
7. Damm N, Bouquet A. *Oral and Maxillofacial pathology*. 3rd ed. Philadelphia: W.B. Saunders; 2009. pg. 90-93.
8. Patil Santhosh, Doni Bharati, Prevalence of dens invaginatus in north indian population: *Oral Max Path J* 2013; 4(1): 282-88.
9. Hulsmann M. Dens invaginatus: Aetiology, classification, prevalence, diagnosis, and treatment considerations. *International Endodontic Journal* 1997; 30:79-90.
10. Satish V, Prabhadevi CM, Hegde KV. Occult Caries: The Hidden Truth. *International Journal of Clinical Pediatric Dentistry* 2010; 3(3):225-29.

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