

# Diagnosis and Management of Dens Invaginatus: Case Report

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## INTRODUCTION

Dens Invaginatus is a developmental malformation in which the enamel infolds into the dentin. This infolding of the enamel causes areas of bacterial development leading to dental caries. The caries infection can spread through enamel, infect the pulp and cause necrosis of the soft tissue. Dens invaginatus lesions have been reported to affect 0.3% to 10% of the population.

Dens invaginatus is classified into three types, as per the Oehlers (1957) classification:

Type I: Invagination is minimal and enamel-lined. Confined within the crown of the tooth and does not extend beyond the level of the external enamel-cemental junction.

Type II: Invagination is enamel-lined and extends into the pulp chamber, but remains within the root canal with no communication with the periodontal ligament.

Type III A: Invagination extends 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: Invagination extends through the root and communicates with the periodontal ligament at the apical foramen. There is no communication with the pulp.

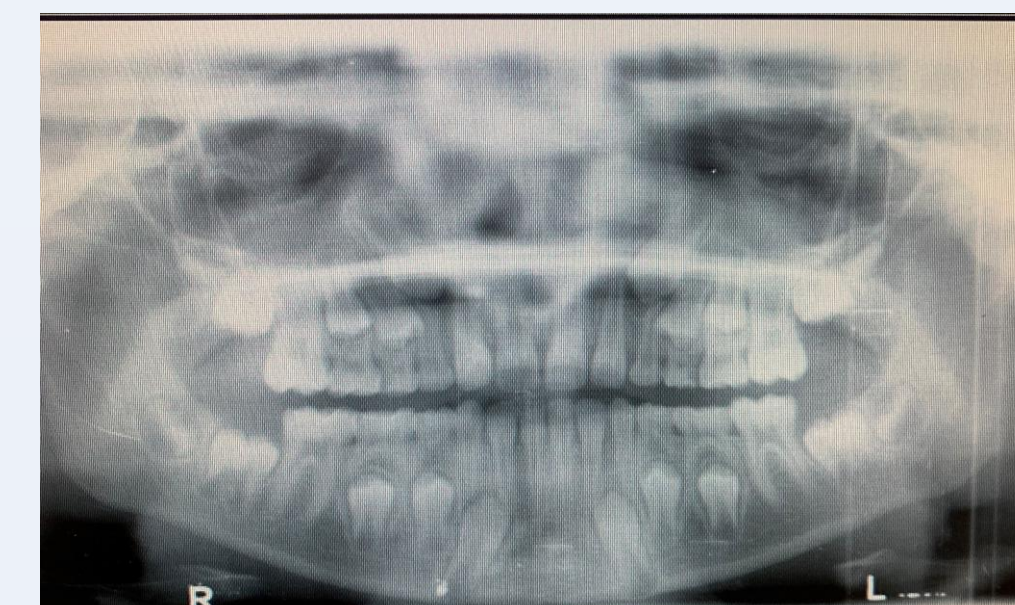
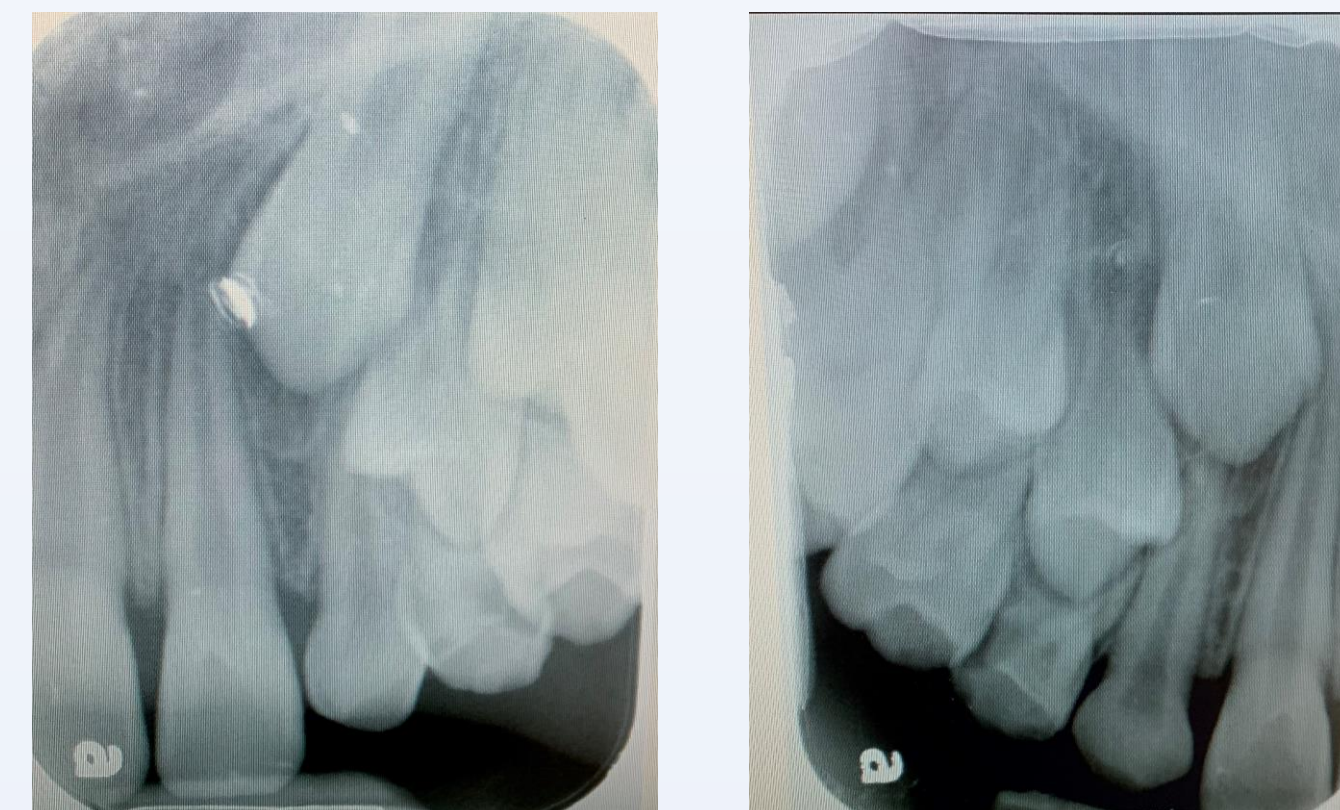
## CASE REPORT

A 10-year-old male presented to Staten Island University Hospital Dental Clinic with a chief complaint of spontaneous throbbing pain on an upper left tooth. Patient reports pain has been persistent over the last two days, which increases when eating or applying pressure. Patient points to tooth # 10. Patient's medical and dental history is non-contributory as per patient's mother. Patient and parent reported there was no history of head and neck trauma. No parafunctional habits were reported. Upon extraoral examination, no swelling, asymmetry or tenderness were noted. Intraoral examination revealed a deep pit on the cingulum portion of tooth # 10. Mild erythematous swelling was noted by the cervical gingiva of tooth # 10. Tooth # 10 had a positive response to percussion and negative response to electric pulp and cold testing. Radiographic examination revealed no abnormalities associated with periapical area or periodontal ligament of tooth # 10. Radiographic findings consistent with Oehler's Type I dens invaginatus. Differential diagnosis of dental trauma was ruled out due to presentation of findings and history. No caries lesions noted on tooth # 10. Clinical diagnosis of dens invaginatus with pulp necrosis was suggested based on clinical findings.

## MANAGEMENT

Due to history of spontaneous pain, positive percussion testing and absence of pulpal vitality, endodontic treatment was recommended for tooth # 10. Consent was obtained from mother to initiate endodontic treatment. Access and pulpectomy completed under rubber dam isolation. Pulpal necrosis was confirmed as per clinical presentation of pulp tissue and no hemorrhaging. Patient reported resolution of symptoms following subsequent treatment visits.

## RADIOGRAPHS



## DISCUSSION & CONCLUSION

Knowledge of classification and anatomic variations of teeth with dens invaginatus is critical for early detection and management. If anatomic variation of dens invaginatus is noted upon comprehensive oral examination prior to symptoms, preventative treatment is recommended, and includes but not limited to, sealing of deepest pits, grooves and fissures. In case of reversible pulp inflammation, some authors recommend endodontic treatment only the invagination, leaving the main pulp canal intact. Advanced progression of lesion may require conventional endodontic treatment with suited modality for dental developmental stage. The case highlights the importance of early detection and management through regular dental screenings.

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