

Nonsurgical endodontic management of dens invaginatus type IIIb - A case report

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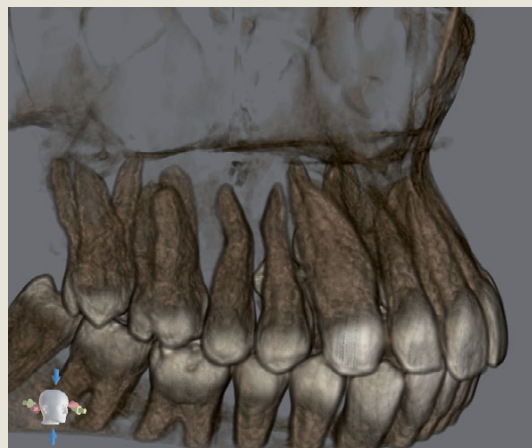
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DESCRIPTION OF CLINICAL CASE

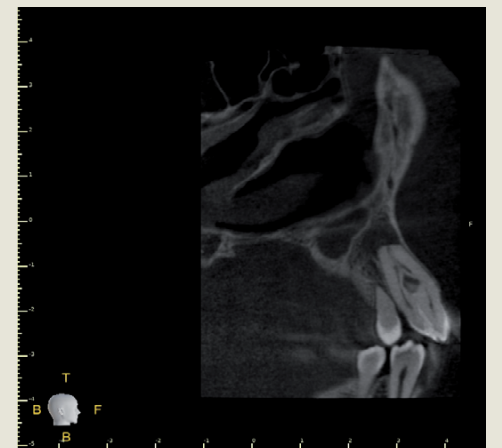
Male patient, aged 20, was referred to the post-grad Endodontic clinic after an acute apical abscess episode associated to a complex internal tooth anatomy. Dental pulp tests performed on the maxillary right canine (13) were negative, and the presence of a sinus tract at the time of the appointment was noted. A diagnosis of total pulp necrosis and chronic apical abscess was made, with indication for non-surgical root canal treatment (NSRCT). Radiographic examination revealed a dens-in-dent (Dens Invaginatus DI) type IIIb (Oehlers classification) with presence of periapical radiolucency. CBCT was requested to aid treatment planning. The access cavity was carried out under rubber dam isolation using a round diamond bur in a high-speed hand-piece and refined using Start-X® (Dentsply-Sirona) ultra-sonic tips. Canal scouting and working-length determination was carried out using hand K10 files and an apex locator. The canals were instrumented using the WaveOne Gold® (Dentsply-Sirona) system and irrigated using NaOCl 5.25% and Citric Acid 10%, both activated using the sonic device EDDY® (VDW). Obturation was carried out using continuous wave and thermo-compaction of gutta-percha with resin cement 2Seal® (VDW) followed by a coronal seal with glass ionomer cement. The access cavity was restored using composite resin. A dental operating microscope was used for the whole procedure.



Axial view of CBCT



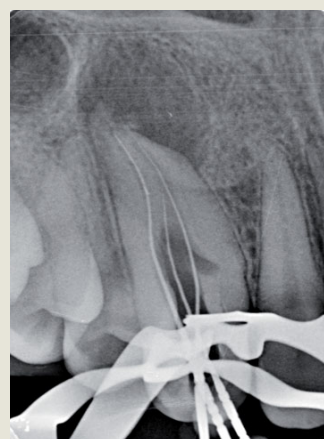
3D reconstruction



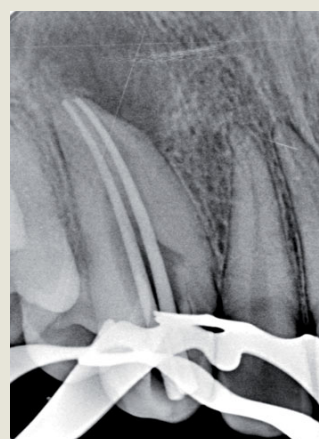
Sagittal view of CBCT



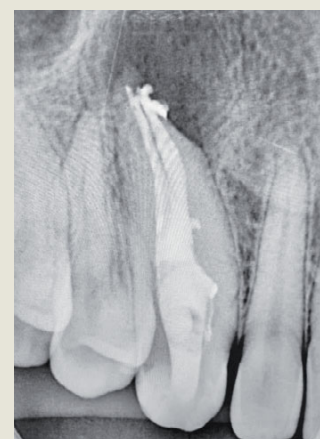
Inicial



Odontometry



Conometry



Pos- obturation



12 months follow-up

DISCUSSION

The dens-in-dente (Dens Invaginatus DI) is a dental developmental anomaly characterized by the presence of calcified tissues like enamel and dentine in the pulp space, having higher probability of developing pulpal and periapical pathology. The most likely cause of this anomaly is the invagination of these mineralized tissues, before they calcify. Dental anomalies, such as DI, pose a challenge for Dentists/Endodontists. However, if treatment is carried out following biological principles, the prognosis of non-surgical endodontic treatment is similar to one carried out in a tooth with less complex anatomy.

CONCLUSION

The non-surgical endodontic treatment carried out was effective in the resolution of this clinical case, Teeth with Oehler's Dens Invaginatus Type III and with periapical pathosis are a challenge to the endodontist considering their aberrant anatomy. The use of CBCT was an important tool in our case to provide relevant details of the internal anatomy of the invaginated tooth and thereby played a vital role in treatment planning. Complex cases such as this can only be successfully treated by combining operator experience with knowledge and technology.

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