SUCCESSFUL ENDODONTIC AND SURGICAL TREATMENT OF DENS INVAGINATUS WITH INFECTED INVAGINATION AND VITAL PULP: A CASE REPORT

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Aim

To present a case of successful treatment of chronical apical periodontitis with a cyst-like lesion of tooth #12 with an infected invagination (Oehlers' type 3) and the surrounding vital pulp.

Introduction

Dens invaginatus (DI) is a malformation of the tooth. It results a deepening or invagination of the enamel organ into the dental papilla prior to calcification of the dental tissues. Oehlers (1) first described different types of DI. Type 3: invaginations extend into the root and exit laterally or apically. There is usually no communication with the pulp. Any communication between the oral cavity and the invaginatus foramen can lead to an inflammatory response within the periodontal tissues ('peri-invagination periodontitis' (PIP). Where PIP exists but the pulp remains healthy all efforts should be aimed to preserve pulp vital (2).

Case Presentation

14-year-old male was referred for root canal treatment of tooth #12.

Complains: constant light pain, tenderness to percussion and palpation, swelling history in the past.

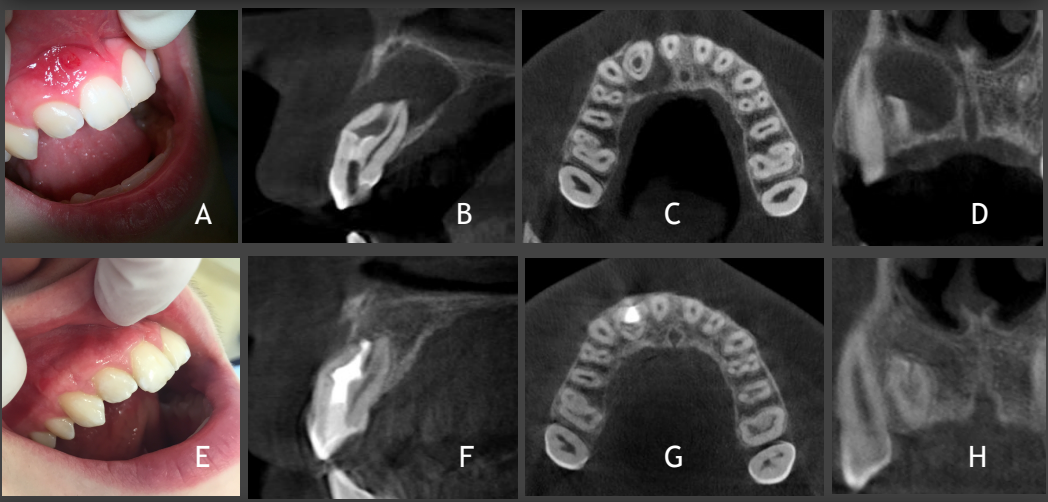
Intraoral examination: anomalous looking tooth #12 compared to left maxillary incisor, active sinus tract (*Fig.A*). Tooth revealed a normal response to pulp testing.

CBCT imagination: a huge radiolucent cyst-like lession around tooth #12 and the invagination extending to the periodontum (*Fig.B,C,D).*

Treatment: under the microscope the space of invagination was cleaned chemomechanically. $Ca(OH)_2$ paste was inserted for 2 weeks. After medication patient had no complains and no sinus tract. Pulp reveled normal response. Apical part of invagination was filled with MTA, rest space - with thermoplastic gutta-percha and sealer. Cavity was sealed with "Biodentin"(to protect vital pulp) and composite crown filling.

After 3 months surgical procedure was performed under general anesthesia. The cystic lining/granulation tissue was carefully enucleated, without damaging periapical region of teeth #11, #12, #13. Histological evaluation confirmed the diagnosis of radicular cyst.

Control visits for tooth vitality and function were made after 1, 2, 3, 6 and 12 months. Patient had no complains and were no sings of infection (*Fig.E).* In the follow-up after 12 months CBCT examination showed fully repaired bone structure (*Fig.F,G,H).*



Discussion

Surgical treatment approach in such cases is debatable. There are opinions, that surgical intervention for large periapical lesions should be applied only in cases where the orthograde canal treatment was not successful (3). On the other hand, 'true' cysts are completely separate from the root canal, and are less likely to heal by nonsurgical root canal therapy alone (4). Preservation of the pulp vitality allowed us to save as much as possible of the root dentin and consequently, increased our expectations for the long-term treatment success. The extended follow up period of 12 months proved the successful outcome of the selected treatment procedures.

Conclusion & Clinical Relevance

In the presented case, endodontic treatment success was based on careful diagnostics and on adequate treatment planning. All efforts should aim to treat PIP and to preserve pulp vitality in Oehlers Type 3 anomalies.

References

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