

Opis redkega primera: Nadštevilni zob med koreninami prvega zgornjega stalnega kočnika

Report of a rare case: supernumerary tooth between the roots of the permanent maxillary first molar

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Izvleček

Namen: Namen prispevka je predstaviti primer medkoreninskega nadštevilnega zoba.

Poročilo o primeru: V primeru predstavljamo 45-letnega pacienta s sepsom odontogenega izvora. Klinični pregled ustne votline in panoramski rentgenski posnetek sta pokazala štiri avitalne zobe z neustreznimi koreninskimi polnitvami, med katerimi sta bila oba prva zgornja stalna kočnika. Ob koreninah desnega so bile vidne periapikalne radiolucence, značilne za periapikalni parodontitis, med koreninami levega pa nenavadna radiolucentna struktura. V diferencialni diagnozi so bili kondenzirajoči osteitis, odontom in benigni cementoblastom, računalniška tomografija s stožčastim snopom (RTSS) pa je pokazala, da gre za miniaturni nadštevilni zob med bukalnima koreninama omenjenega zoba. Odstranitev medkoreninskega zoba ni bila indicirana,

Abstract

Purpose: To present the case of a patient with an inter-radicular supernumerary tooth.

Case report: A 45-year-old male patient presented with sepsis of odontogenic origin. Oral clinical investigation and panoramic radiography revealed the presence of four avital teeth with inadequate root canal fillings, including both maxillary first molars. The right one had periapical radiolucencies, indicating periapical periodontitis. The left one had an unusual radiopaque structure between the roots. Condensing osteitis, odontoma, and benign cementoblastoma were included in differential diagnosis; however, cone-beam computed tomography (CBCT) showed a miniature supernumerary tooth located between the buccal roots of this tooth. Surgical removal of the inter-radicular tooth was not indicated, because there were no associated pathological changes.

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ker ni bilo spremljajočih bolezenskih sprememb. V nadaljevanju je bil desni prvi zgornji kočnik kot najverjetnejši izvor sistemske okužbe ekstrahiran, preostali avitalni zobje pa so bili ponovno endodontsko zdravljeni.

Zaključek: Medkoreninski nadštivilen zob se pojavi redko, vendar je treba tudi to možnost upoštevati pri obravnavi radiopačne spremembe v predelu zgornjega stalnega kočnika. Njegova slika na običajnih rentgenskih posnetkih je lahko nejasna zaradi prekrivanja s sosednjimi koreninami. RTSS ima ključno vlogo pri postavitvi pravilne diagnoze in ugotavljanju anatomskih odnosov.

Subsequently, the right first molar was extracted as the most likely source of systemic infection. The remaining three avital teeth were endodontically re-treated.

Conclusion: An inter-radicular supernumerary tooth is a rare occurrence; however, it is important to take into account when evaluating a radiopacity associated with a permanent maxillary molar. Its image on conventional radiographs may be unclear due to overlap with the neighbouring roots. CBCT plays a leading role in radiologic diagnosis and the establishment of anatomical relationships.

INTRODUCTION

Supernumerary teeth are those in excess of the normal number of 20 primary and 32 permanent teeth. The prevalence of supernumerary teeth in the permanent dentition varies from 0.5% to about 3.0% in different populations (1). The molar region in the maxilla is one of the most frequent regions for the occurrence of supernumerary teeth (2). Most of them are situated buccally to the molar row (paramolars) or distally to the third molar (fourth molars or distomolars). In this article, we describe a rare case of a supernumerary tooth located between the roots of the permanent maxillary first molar (inter-radicular tooth).

CASE PRESENTATION

A 45-year-old male patient with sepsis was referred to the University Dental Clinic for evaluation and treatment. An oral focus of infection was suspected based on a positron emission tomography scan and isolation of a common oral pathogen, *Aggregatibacter actinomycetemcomitans*, from his blood. Pri-

or to referral, parenteral antibiotic treatment with ceftriaxone was initiated.

Oral clinical investigation and panoramic radiography revealed no signs of periodontal disease; however, there were four avital teeth with inadequate root canal fillings: 25, 16, 26, and 46. Periapical radiography and cone-beam computed tomography (CBCT) showed periapical radiolucencies and thickening of the antral mucosa associated with the roots of tooth 26. A diagnosis of asymptomatic periapical periodontitis was made. Periapical radiography also revealed an unusual radiolucent structure among the roots of tooth 16 (Figure 1). CBCT images clearly showed that this structure was a miniature supernumerary tooth (mesio-distal crown diameter 2.1 mm, bucco-palatal crown diameter 2.8 mm, tooth length 7.7 mm) with a single root and a simple conically-shaped crown (Figure 2). It looked like a small replacement tooth inside the bony septum separating the buccal roots (Figure 3). The root of the supernumerary tooth was in close proximity to the floor of the maxillary sinus (Figure 4). Surgical removal of

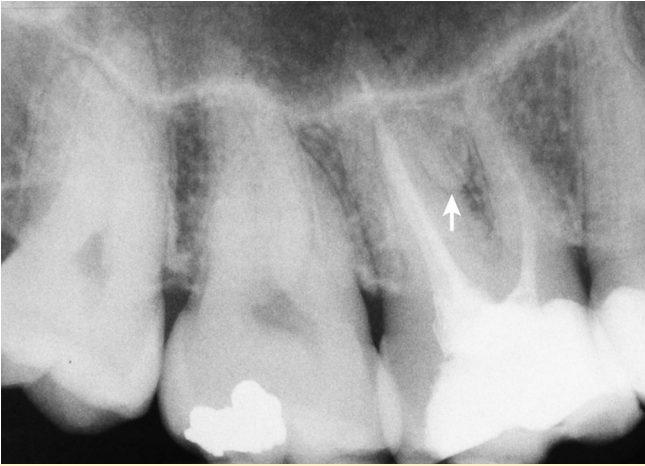


Figure 1. Periapical radiograph of the right permanent maxillary first molar showing the presence of a radiopaque structure between the roots (arrow).



Figure 2. Sagittal CBCT image revealing the presence of a supernumerary tooth between the buccal roots of the right permanent maxillary first molar.

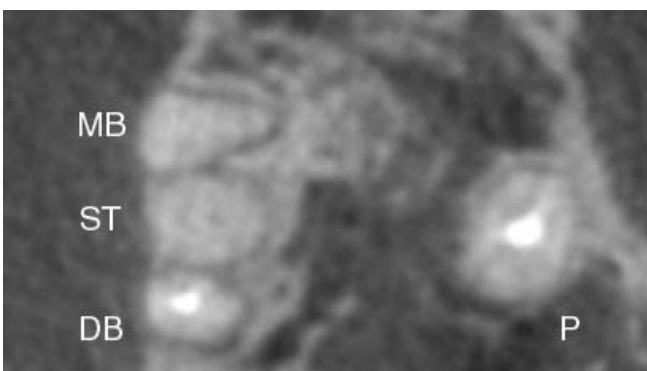


Figure 3. Axial CBCT image of the right permanent maxillary first molar: MB – mesiobuccal root, DB – distobuccal root, P – palatal root, ST – root of the supernumerary tooth.

this tooth was not indicated, because there were no associated pathological changes.

Tooth 26 was extracted. Endodontic re-treatment of the remaining three avital teeth was accomplished over the following seven months. Tooth 16 had a mesiobuccal root with three canals and distobuccal and palatal roots with one canal each (Figure 5).

DISCUSSION

One of the unusual sites in the jaw where a supernumerary tooth can develop is the inter-radicular septum of a maxillary molar. We have been able to find only three previous references to the presence of supernumerary teeth at this location. Schulze (3) described a miniature supernumerary tooth, which was firmly lodged between the roots of an extracted maxillary second molar. Huffman and Thatcher (4) and Jones (5) presented two patients, each with a slightly larger supernumerary tooth between the roots of the maxillary first and second molar, respectively.

An inter-radicular tooth tends to remain unerupted within the jaw, unless the adjacent maxillary molar is extracted. In the unlikely case that it remains in the jaw after extraction, it might erupt and replace the extracted molar, as if it were its true successor. An inter-radicular tooth may initiate external resorption in the furcal region of the roots (3, 4) and, although not documented, could cause follicular cyst formation. In our case, the patient was asymptomatic, there was no associated pathology, and the risk of developing external resorption in the future was considered negligible. Firstly, there was a considerable distance between the crown of the inter-radicular tooth and the furcal region of the maxillary first molar. Secondly, the root of the supernumerary tooth was fully formed, and no further tooth migration could be expected. The tooth was, therefore, left in place and kept under observation.

From a diagnostic viewpoint, it is important to differentiate inter-radicular teeth from pathologic entities with a potentially similar radiographic appearance but different prognosis and treatment, e.g., condensing osteitis, odontoma, and benign cement-



Figure 4. Cross-sectional CBCT image of the right permanent maxillary first molar: P – palatal root, ST – supernumerary tooth.

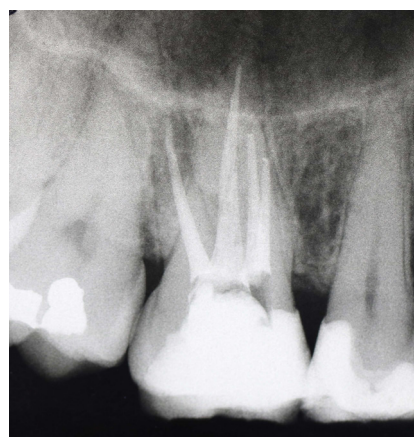


Figure 5. Postoperative radiograph of the right permanent maxillary first molar.

oblastoma. In our case, the inter-radicular tooth was detected incidentally on conventional radiographs; however, the image was unclear due to its small size and superimposition on the roots of the adjacent maxillary molar. CBCT was helpful in making an accurate diagnosis and determining the exact anatomical relationships. The additional finding of three canals in the mesiobuccal root of the first maxillary molar has also rarely been reported in the literature (6-8).

CONCLUSIONS

Clinicians should be aware that the inter-radicular septum of a permanent maxillary molar is a rare, yet possible location of a supernumerary tooth. The image of an inter-radicular supernumerary tooth on conventional radiographs may be unclear. CBCT is indicated to rule out pathologic entities with potentially similar radiographic appearance but different prognosis and management.

REFERENCES

1. Schuurs A. Pathology of the hard dental tissues: John Wiley & Sons; 2012.
2. Grimanis GA, Kyriakides AT, Spyropoulos ND. A survey on supernumerary molars. Quintessence Int. 1991; 22(12): 989-95.
3. Schulze C. Anomalien und Mißbildungen der menschlichen Zähne: Quintessenz; 1987.
4. Huffman GG, Thatcher JW. Supernumerary tooth. Oral Surg Oral Med Oral Pathol. 1974; 37(5): 826-7.
5. Jones RL. Unusual impacted maxillary tooth. Oral Surg Oral Med Oral Pathol. 1974; 37(5): 825-6.
6. Ferguson DB, Kjar KS, Hartwell GR. Three canals in the mesiobuccal root of a maxillary first molar: a case report. J Endod. 2005; 31(5): 400-2.
7. Ahmad IA, Al-Jadaa A. Three Root Canals in the Mesiobuccal Root of Maxillary Molars: Case Reports and Literature Review. J Endod. 2014; 40(12): 2087-94.
8. Kamble AP, Pawar RR, Mattigatti S, Mangala TM, Makandar S. Cone-beam computed tomography as advanced diagnostic aid in endodontic treatment of molars with multiple canals: Two case reports. J Conserv Dent. 2017; 20(4): 273-7.