Cukurova Medical Journal
ÇUKUROVA ÜNİVERSİTESİ TIP FAKÜLTESİ

Cukurova Med J 2018;43(1):263-264
DOI: 10.17826/cumj.341422

EDİTÖRE MEKTUP / LETTER TO THE EDITOR

Radicular dens invaginatus in second mandibular molar

İkinci mandibular molar dişlerde radiküler dens invajinatusu

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Cukurova Medical Journal 2018;43(1):263-264.

Dear Editor,

A 35-year-old male patient visited dental clinic with a chief complaint of pain in the right lower back region of the mouth since one week. On clinical examination, there was the presence of superficial caries in the central occlusal pit of the occlusal surface of 47. The morphology of crown was appearing normal. The tooth was tender on vertical percussion and there was grade I tooth mobility. Intraoral periapical radiograph of 47 showed radiolucency involving enamel and dentin approximating the pulp chamber in the occlusal and distal surface of the crown. Periapical radiolucency was seen at the apex of 47. Also, vertical bone loss between 47 and 48 was observed. The furcation area of 47 was present near to root apices, with short roots. However, since the height of pulp chamber was normal, taurodontism was ruled out. Also noted was the longitudinal radiopacity within the radiolucency in the radicular portion of 47 indicating radicular dens in dente.

Careful radiographic examination revealed that the invagination seemed to perforate the mesial root at the apical portion, near to the furcation area and communicated with the surrounding periapical area. The teeth also exhibited complexly arranged root canal system (Figure 1). Since the tooth was mobile and radiographic examination indicated significant bone loss around the tooth roots, the tooth was extracted.Developmental abnormalities of teeth occur due to various local and systemic factors. Dens invaginatus is also called as dens in dente, tooth within a tooth, dilated composite odontome or extensive compound odontoma[1-3]. Dens invaginatus occurs due to invagination of the external surface of tooth crown before the occurrence of calcification[1]. This invagination acts as a road of entry to microorganisms and environmental irritants leading to caries, pulpal and periapical infections[4,5]. Dens invaginatus commonly occurs in maxillary lateral incisors and is rare in mandibular molars[1,2,6]. Radicular dens invaginatus occurs due to infolding of Hertwig's epithelial root sheath [7]. Usually, there is communication between the invagination and root surface, which was observed radiographically in our case also[7]. In radicular dens in dente (Type III dens in dente), the invagination is lined by enamel/cementum and it extends up to the apical portion of the root leading to the rise of second apical foramen[2,3,8]. The enamel/cemental lining is usually thin and is in close proximity with the pulp. In many cases, caries develops without visible clinical signs[6,7].

Figure 1. Mandibular second molar exhibiting radicular dens invaginatus with short roots and normal pulpal height.

Periodontal infections can communicate with tooth pulp through radicular invagination, leading to the involvement of pulp and periapical complications[7]. A radiograph may show oval radio-opacity in the crown or root portion giving a characteristic "tooth within tooth" appearance[6]. Dens in dente are usually

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Geliş tarihi/Received: 27.11.2016 Kabul tarihi/Accepted: 14.12.2016

treated by restoration, endodontic treatment, nonsurgical endodontics, intentional replantation or extraction[5].

Radiographs are immensely valuable in the detection of dens invaginatus. Early diagnosis and preventive restorative therapy are helpful in these conditions. The present case demonstrates the rare occurrence of radicular dens invaginatus in the lower second molar tooth. Every clinician should be alert of the occurrence of this condition to manage it effectively in time.

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