

An Enamel Pearl on Maxillar Wisdom Tooth: A Rare Case Report

Üst Çene Akıl Dişi Üzerinde Mine İncisi: Nadir Bir Olgu Sunumu

Şeref EZİRGANLI,^a
Alper KUŞTARCI,^b
Uğur GÜREER^c

^aClinic of Oral Surgery,
Kadıköy Oral and Dental Health Center,
İstanbul

^bDepartment of Endodontics,
Cumhuriyet University
Faculty of Dentistry,

^cPrivate Practice, Sivas

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Yazışma Adresi/Correspondence:

Şeref EZİRGANLI
Kadıköy Oral and Dental Health Center,
Clinic of Oral Surgery, İstanbul,
TÜRKİYE/TURKEY
seref.ezirganli@gmail.com

ABSTRACT The enamel pearl is an ectopic accumulation of enamel that is firmly adherent to the tooth root surface. Although the pathogenesis of ectopic enamel formation is not known, possible mechanisms to account for this phenomenon, the radiographic presentation of enamel pearls and its clinical significance are discussed in the context. Enamel pearls are generally found on the root surface of molar teeth and as single. The most common site for enamel pearls is at the cemento-enamel junction of maxillary molars. They are varying in size from microscopic to a few millimetres. In this case report, enamel pearl which was about 3 mm diameter on between roots of maxillary wisdom tooth was presented.

Key Words: Dental enamel; molar, third

ÖZET Mine incisi, diş kök yüzeyine sıkıca yapışmış olan mine ektopik birikimdir. Ektopik mine oluşumun patogenezi bilinmemesine rağmen, makalede bu fenomenin muhtemel oluşum mekanizması, mine incilerinin radyografisi ve klinik önemi tartışıldı. Mine incileri genellikle büyük azı dişlerinin kök yüzeylerinde ve tek olarak bulunurlar. Mine incilerinin en sık görüldükleri alan üst çene büyük azıların mine-sement birleşimidir. Mikroskobik boyuttan birkaç milimetreye kadar çeşitli boyutlarda olabilirler. Bu olgu sunumunda, üst çene akıl dişi kökleri arasında bulunan yaklaşık 3 mm çapında olan mine incisi takdim edilmiştir.

Anahtar Kelimeler: Dental mine; azı dişi, üçüncü

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Enamel pearl, also known as enamel drop, enamel nodule, and enameloma, is a small globule of enamel 1 to 3 mm in diameter that occurs on the roots of molars.¹ The diagnosis of the enamel pearl is relatively easy because of its characteristic clinical appearance of a well circumscribed globule and radiographic density that is equivalent to enamel.² It is found in about 3% of the population, probably formed by Hertwig's epithelial root sheath before the epithelium loses its enamel-forming potential.¹ The most common site for enamel pearls is at the cemento-enamel junction of multi-rooted teeth. They are most commonly mesial or distal on maxillary teeth and buccal or lingual on mandibular teeth. Enamel pearls most often occur singly and can be composed exclusively of enamel.³

CASE REPORT

A 34-year-old female patient was referred to our clinic complaining of sensitive teeth in the right posterior mandibular region. On the radiographic and intraoral examination revealed both mandibular and maxillary wisdom teeth were unerupted. Firstly, we extracted right maxillary wisdom tooth and determined enamel pearl at the cementoenamel junction of multirooted tooth (Figure 1). The enamel pearl was not discernible on the radiograph (Figure 2). However, it was described on the X-ray microtomography after surgery (Figure 3).

DISCUSSION

Enamel pearls are one of a group of ectopic enamel structures occurs circular mass of calcified material that can be found on the roots of deciduous and permanent teeth.^{2,4-6} Concerning their histology, it is the spatial relationship among enamel, dentin, and cementum which has attracted.⁷ Enamel pearls probably arise from a local activity of ameloblasts, derived from Hertwing's epithelial root sheath, which have remained adherent to the dentine surface. According to Brower enamel in the bifurcation area may be formed by ameloblasts of the enamel organ that produced the crown enamel.^{8,9}

The prevalence of macroscopically detectable enamel pearls varies with race, jaw, tooth, and tooth surface; among different populations, the prevalence in molars ranges from 0 to 23.3%.⁷ Depending on the study, enamel pearls on permanent molar teeth have an incidence rate of between 1.1-9.7% with distinct differences among racial and national groups.⁵ In a study, reported enamel pearls on 1.6% molars of dental patients examined.⁶ In an-



FIGURE 1: An enamel pearl shown on extracted molar tooth.



FIGURE 2: A panoramic radiograph.

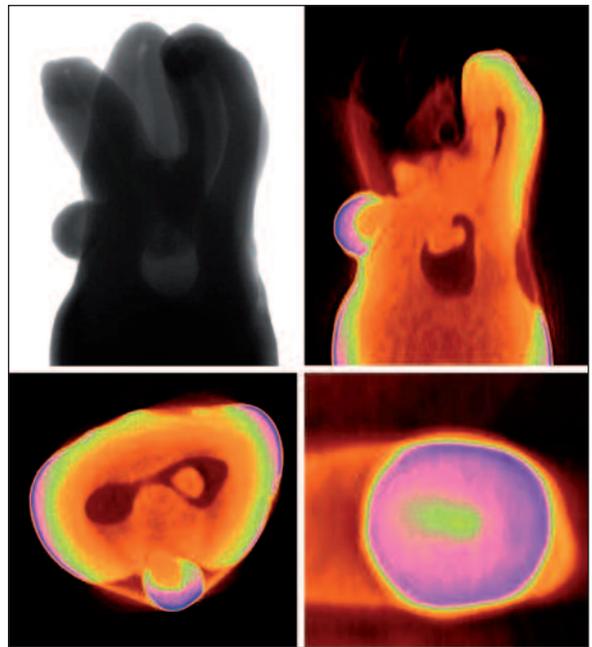


FIGURE 3: X-ray microtomography.

other study of dental patients, the frequency reported for enamel pearls on molar of 8854 teeth examined was 2.28%.¹⁰ Chrcanovic et al.¹¹ observed enamel pearl incidence of 0.82% for all teeth. The common site of location of the enamel pearl is adjacent to the furcation, especially the bifurcation or trifurcation areas of maxillary and mandibular molars.¹² They are either isolated from or connected with the crown enamel and are directed toward or even reach into the bifurcation; most are situated on the second permanent mandibular molar.⁹ The incidence of enamel pearls increases

greatly in histological studies, suggesting that they are often obscured by a covering of cementum.⁵

Enamel pearls are relatively uncommon and usually incidentally recognized during routine radiography as hemispherical dense opacities projecting from the cemento-enamel junction surface of multirooted teeth and can be radiographically seen as 1 to 3 mm smooth round radiopacities.^{1,2,6,12-14} The major radiologic differential diagnosis is projection geometry causing overlap of root contours in multirooted teeth. In the primary dentition, radiographic interpretation and detection of the enamel pearl can be complicated by the superimposition of the developing permanent tooth.⁶

Most enamel pearls form below the crest of the gingival and are not detected during a clinical examination. However, they appear primarily in the furcation areas of molar teeth, particularly the maxillary third and second molars and is attached to the external surface of a tooth.^{1,2,5} The maxillary molars are usually at the mesial or distal aspect, in contrast to those on the mandibular molars, which are most often buccal or lingual.¹ They can be regarded as a primitive supernumerary cusp or

tooth.⁴ They may have a core of dentin and rarely a pulp horn extending from the chamber of the host tooth.¹ They usually occur singularly, but occasionally more develop.^{1,5}

When associated with enamel pearls, third molars are particularly susceptible to caries, pulp and periodontal diseases. It would be expected, therefore, that such teeth would be lost preferentially during life compared with unaffected third molars.¹⁵ However, usually no clinical symptoms are associated with their presence, although they may predispose to periodontal pocket formation and subsequent periodontal disease.¹ The cervical enamel projection is also thought to play a role in the development of the paradental cyst (also referred to as buccal bifurcation cyst and Craig cyst).¹³

Treatment is not usually suggested, because it frequently leads to the development of pulpitis, root caries, or external resorption. However, it can be removed the enamel pearl if its location at the cemento-enamel junction predisposes to periodontal disease; however, as the possibility must always be considered that it can contain dentin and pulp horn, caution is advised.^{1,3,13,16}

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