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Case Report

Erupted Complex Odontoma in the Mandible: Report of A Rare Case

Kübra Çam[1], **Hande Seyithanoğlu Doğruer**[2], **Ayşe Zeynep Zengin**[3]

[1] *Specialist, Ondokuz Mayıs University, Faculty of Dentistry, Department of Dentomaxillofacial Radiology, Samsun, Türkiye.*
[2] *Research Assistant, Ondokuz Mayıs University, Faculty of Dentistry, Department of Dentomaxillofacial Radiology, Samsun, Türkiye.*
[3] *Professor, Ondokuz Mayıs University, Faculty of Dentistry, Department of Dentomaxillofacial Radiology, Samsun, Türkiye.*

ABSTRACT

Introduction: Odontomas are most often located within the bone but can occasionally erupt into the oral cavity due to the eruption forces generated by surrounding reactive tissues. This case report presents the clinical and radiographic findings of a rare case of complex odontoma that erupted in the oral cavity.

Case Report: A 23-year-old female patient presented to our clinic complaining of a tooth-like hard mass in the posterior right mandible. Intraoral examination revealed a hard mass with a rough surface, shiny black and yellow discoloration in the area of tooth 47. Panoramic radiographs revealed that tooth 47 was impacted, and an amorphous, well-defined, dentin-opaque structure was present on the eruption path and at the apex of the alveolar crest. The patient was referred to the Oral and Maxillofacial Surgery Clinic with a preliminary diagnosis of erupted complex odontoma.

Conclusion: Clinical and radiographic examinations are crucial for accurately diagnosing erupted complex odontomas and formulating an appropriate treatment plan.

Keywords: Erupted odontoma; Panoramic radiography; Periapical radiography

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Corresponding author: Dr. Kübra Çam
Ondokuz Mayıs Üniversitesi Diş Hekimliği Fakültesi, Ağız Diş ve Çene Radyolojisi, 55139 Atakum, Samsun Türkiye.
E-mail: dtkbrcm@gmail.com

Editor: Prof. Dr. Sibel Elif Gültekin, Gazi University, Faculty of Dentistry, Department of Oral Pathology, Ankara, Türkiye.

INTRODUCTION

Although odontomas are classified as odontogenic tumors, they are generally considered developmental anomalies, that is, hamartomas. Their slow growth, long-term stability in size, and low tendency to recur support the view that these formations are hamartomatous in nature.[1,2]

Advanced odontomas mainly consist of enamel and dentine, with varying amounts of pulp and cementum. During the early stages of development, odontogenic epithelium and mesenchymal tissues are present at varying rates.[1] Although the etiology of odontomas is not fully understood, the most widely accepted view links them to trauma, infection, growth pressure, and genetic anomalies occurring during the deciduous dentition period.[3]

Odontomas are most commonly detected between the ages of 10 and 20 and show no significant gender predilection. They are rarely associated with deciduous teeth,[4,5,6] and occur more frequently in the maxilla than in the mandible. In the maxilla, odontomas are localised in the anterior region, whereas in the mandible, they are most commonly found in the molar region.[7,8]

These lesions are typically asymptomatic; however, patients often present with delayed eruption of permanent teeth, as odontomas can obstruct their normal eruption.[4,5,6]

According to the 1992 report of the World Health Organization (WHO), odontomas are classified into two subtypes: compound and complex.[9] Compound odontomas occur with the uniform arrangement of multiple small tooth-like structures, whereas complex odontomas are irregular masses that do not anatomically resemble teeth and are composed of enamel and dentine. In addition to these types, a rare variant known as the "dilated odontoma", considered an advanced form of dens invaginatus, is also defined in the literature.[5,10]

Complex odontomas are more frequently observed in the posterior region of the jaw, whereas compound odontomas are predominantly located in the anterior maxilla, typically around the canine teeth.[11] They have radiographically distinct cortical borders and a soft tissue capsule immediately inferior to the cortical border. The lesion content is largely radiopaque, with the degree of opacity varying depending on the amount of hard tissue. Compound odontomas contain irregular tooth-like structures, whereas complex odontomas consist of calcified tissue masses.[5] Radiographically, dilated odontomas appear "doughnut"-shaped, with a radiolucent center surrounded by a radiopaque border.[10]

Clinically, odontomas are observed in three forms: intraosseous, peripheral (extraosseous), and erupted odontomas. The intraosseous form has a higher incidence and is usually diagnosed during routine examinations.[12] Peripheral odontomas are histologically similar to intraosseous odontomas, but they are surrounded by soft tissue and are relatively rare.[13] An erupted odontoma refers to a lesion that develops within the bone and subsequently erupts into the oral cavity. This occurs due to the eruptive force created by reactive tissues surrounding the lesion.[6,9,12] Erupted odontomas are extremely rare. Amado *et al.*[14] reported that erupted odontomas accounted for only 1.6% of cases. While infection is uncommon in odontomas covered by bone, secondary infection may occur in erupted lesions due to exposure to the oral microflora.[6,9,12] Asymptomatic intraosseous lesions are typically managed with follow-up. In contrast, erupted odontomas are treated by simple surgical excision, with recurrence or local invasion being exceptionally rare.[5]

CASE REPORT

A 23-year-old systematically healthy female patient presented to our clinic with a hard, tooth-like mass in the posterior region of the right mandible, which had been present for approximately one year. She stated that the lesion occasionally caused a stabbing sensation while chewing, but did not cause any significant pain.

Intraoral examination revealed the absence of tooth number 47, and the presence of a hard structure on the alveolar crest, with an irregular surface and shiny black and yellow discoloration in the relevant area (Figure 1).

The periapical radiograph of the patient showed that tooth number 47 was impacted in a distoangular position. A well-defined, amorphous, heterogeneous radiopaque mass, approximately 13 x 8 mm in size with dentin-like opacity, was observed along the eruption path of this tooth. The radiograph also demonstrated incomplete root canal treatment and rarefying osteitis in the furcation area and mesial root of tooth number 46 (Figure 2).

The panoramic radiograph revealed that tooth number 47 was impacted in a distoangular position, with an amorphous, well-defined, radiopaque mass exhibiting dentin-like opacity along its eruption path. The radiograph also demonstrated fixed prosthetic restorations on teeth numbers 11, 12, 13, and 14;

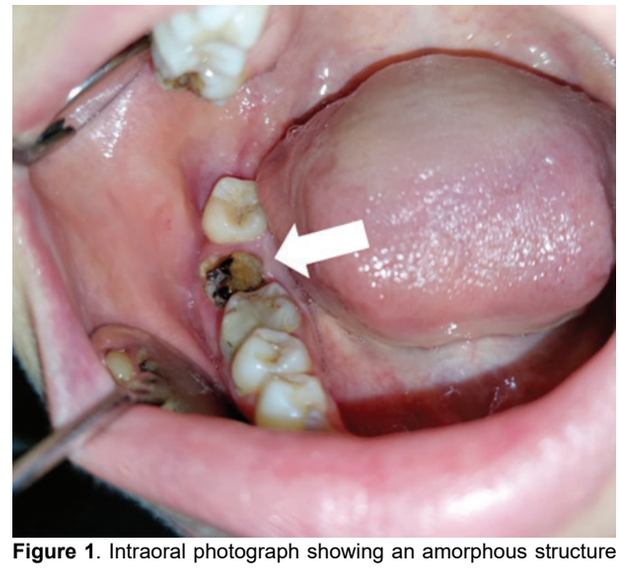

Figure 1. Intraoral photograph showing an amorphous structure with an irregular surface and shiny black and yellow areas on the alveolar crest at the site of tooth number 47 (white arrow).

Figure 2. Periapical radiograph of the right mandibular region showing a complex odontoma along the eruption path of tooth number 47.

incomplete root canal treatment and apical rarefying osteitis on teeth numbers 14, 26, 35, and 46; a filling restoration on teeth numbers 25, 36, 37 and 37; and impaction of tooth number 37 in mesioangular position (Figure 3).

The lesion was evaluated as an erupted complex odontoma because it appeared in the oral cavity as a hard, irregular-surfaced amorphous mass with dentin-like opacity; radiographically presented as a fully calcified structure without enamel–pulp organization; and was located along the eruption path of the impacted tooth number 47.

The patient was referred to the Oral and Maxillofacial Surgery Clinic for excision of the odontoma, diagnosis as a complex odontoma; to the Endodontics Clinic for retreatment of the root canal of tooth number 46; and to the Orthodontics Clinic for management of the eruption of tooth number 47. The patient underwent only surgical treatment and refused all other dental interventions. One year after the excision of the odontoma, a follow-up panoramic radiograph showed slight eruption of tooth number 47, while tooth number 48 remained impacted because it had mesialized into the area (Figure 4). Written informed consent was obtained from the patient for this case report.

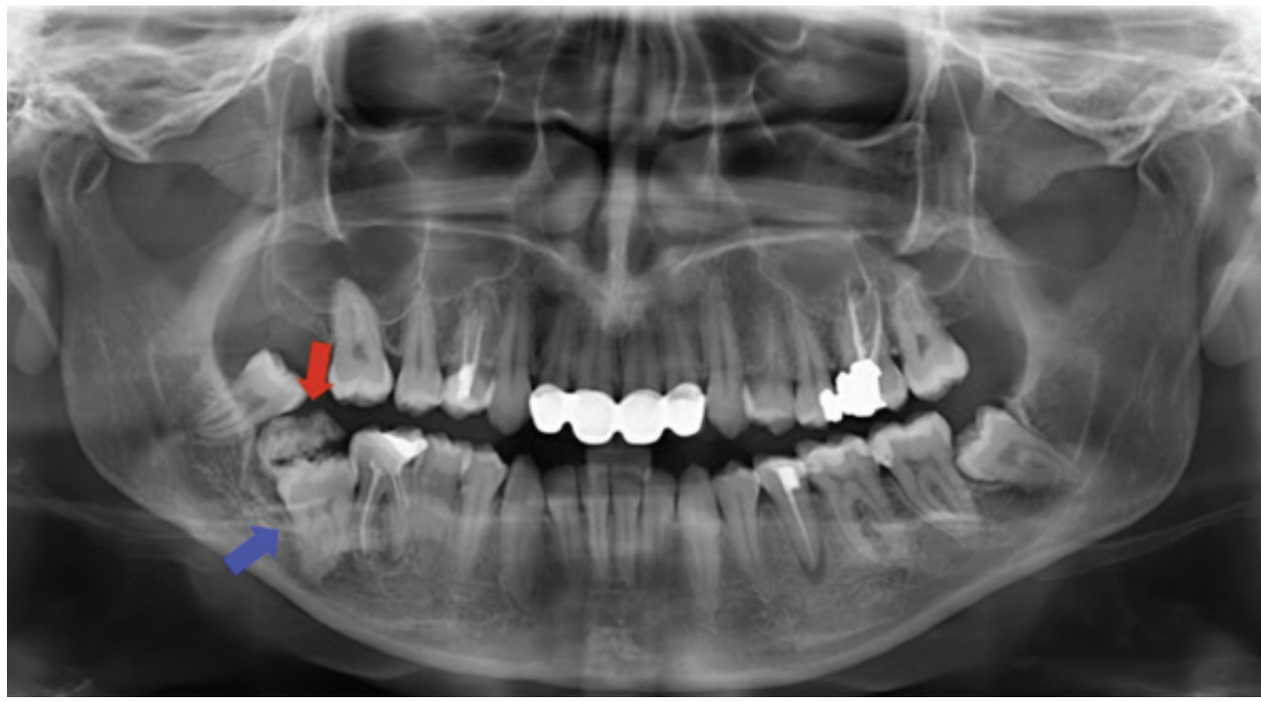

Figure 3. Panoramic radiograph showing tooth number 47 impacted (blue arrow) and a complex odontoma along its eruption path (red arrow).

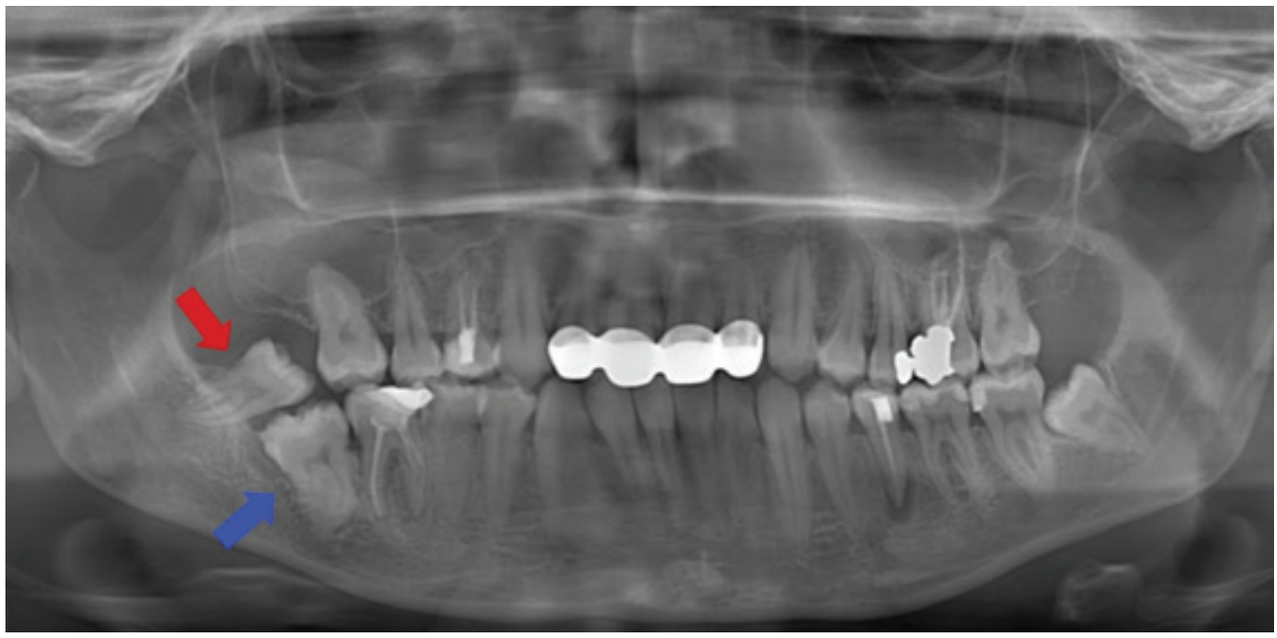

Figure 4. Panoramic radiograph taken one year after excision of an erupted complex odontoma, showing tooth number 48 mesialized into the area (red arrow) and the impacted tooth number 47 (blue arrow).

DISCUSSION

Odontomas are currently regarded as hamartomas and are reported to be the second most frequently encountered odontogenic lesion after ameloblastoma.[15] A great majority of cases are reported to be diagnosed within the first two decades of life. While some studies indicate no gender predilection, others report a higher prevalence in either men or women.[5,16] The case presented in this study involved a 23-year-old female patient, in parallel with the age range reported in the literature.

The WHO has classified odontomas as compound and complex based on their macroscopic and radiographic characteristics. Compound odontomas are distinguished by regular and tooth-like structures and are often accompanied by adjacent fibrous connective tissue matching the tooth follicle. In contrast, complex odontomas consist of irregular, amorphous calcified hard tissue. Compound odontomas are approximately twice as common as complex odontomas. While compound odontomas more commonly occur in the anterior maxilla, complex odontomas are more frequently observed in the molar regions of both jaws.[17] Dilated odontomas can develop in any part of the jaw, affecting both deciduous and permanent teeth, and most commonly affect the lateral incisors of the maxilla, often bilaterally.[5,18]

It is rare for odontomas to erupt into the oral cavity, a phenomenon first described as “erupted odontomas” in 1980.[6] Pamukçu *et al*.[19] identified 74 erupted odontomas in 73 cases in a literature review covering 1989-2020. The study reported that erupted odontomas were predominantly of the complex type with a rate of 65.8%, while compound odontomas accounted for 30.1% and dilated odontomas for 4.1%. Most cases were localized in the maxilla.[19]

In the present case, the complex odontoma, observed as an amorphous calcified hard tissue mass, was located in the posterior region of the mandible, consistent with general localization reported in the literature. However, unlike most erupted odontomas described in the literature, it was situated in the mandible rather than the maxilla.

The eruption of odontomas is considered to be associated with factors such as the eruptive force of impacted teeth, an increase in lesion size, bone resorption, and remodeling of the jaw bones. The absence of periodontal ligament in complex odontomas indicates that eruption does not occur through the pulling force created by the periodontal ligament, as in normal tooth eruption.[20] In cases where odontomas are associated with impacted teeth, the eruption of the teeth may facilitate the eruption of the odontomas. However, erupted odontomas not associated with impacted teeth have

also been reported. In such cases, remodeling and resorption of the overlying bone play an important role in eruption, indicating that the etiology of eruption is likely multifactorial.[17]

The literature reports both asymptomatic odontomas and cases accompanied by a wide range of symptoms such as pain, swelling, suppuration, and lymphadenopathy. The rough surfaces of erupted odontomas promote the adhesion and proliferation of dental plaque, while the absence of periodontal ligament facilitates the invasion of oral microorganisms into the bone. Consequently, erupted odontomas may give rise to more serious complications than non-erupted lesions.[9] The present case exhibited no clinical or radiographic signs of infection, and the only complaint was an occasional stabbing sensation during mastication. In the present case, a complex odontoma in the eruption path prevented the eruption of the tooth number 47. Although tooth number 47 partially erupted following excision, it remained impacted due to the mesialization of tooth number 48, as the patient refused orthodontic treatment.

The differential diagnosis of odontomas includes eruption sequestrum, peripheral osteomas, supernumerary teeth, ameloblastic fibro-odontomas, cementomas, calcified epithelial odontogenic tumors, and osteoblastomas. Eruption sequestrum is a rare condition typically associated with the mandibular first molar and appears as a small, irregular bone protrusion. Peripheral osteomas are radiopaque, well-defined lesions that lack tooth-like structures; they are slow-growing, asymptomatic, and non-odontogenic masses that are not associated with impacted teeth. Supernumerary teeth are most commonly observed in the premaxilla region and are usually conical. Ameloblastic fibro-odontomas are radiographically similar to compound odontomas and are typically present as mixed radiolucent-radiopaque lesions associated with impacted teeth. However, they are more aggressive and occur far less frequently than odontomas.[4,14]

In the present case, the hardness of the lesion, resembling that of a tooth and its odontogenic origin excluded the diagnoses of secestrum and osteoma. Furthermore, its amorphous structure and absence of enamel-pulp tissue ruled out a supernumerary tooth.

CONCLUSION

This study presents the clinical and radiographic findings of a rare complex odontoma in the oral cavity. The lesion was successfully removed via surgical excision; however, the patient's refusal of orthodontic treatment resulted in unfavorable changes in occlusion and tooth alignment. This case highlights the importance of early diagnosis and treatment of odontoma, as well as patient compliance for optimal oral health outcomes.

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CONFLICT OF INTEREST

The authors and/or their family members have no potential conflicts of interest related to this study, such as scientific and medical committee memberships or affiliations, consultancy, expert witness activities, employment at any company, shareholding, or similar circumstances.

Mandibulada Sürmüş Kompleks Odontoma: Nadir Bir Olgu Sunumu

ÖZET

Giriş: Odontomalar çoğunlukla kemik içerisinde yerleşim gösterir ancak nadiren çevresindeki reaktif dokuların oluşturduğu sürme kuvvetleri sayesinde ağız boşluğuna sürebilir. Bu olgu sunumunda ağız boşluğunda sürmüş nadir görülen bir kompleks odontoma vakasının klinik ve radyografik bulguları sunulmuştur.

Olgu Sunumu: 23 yaşında kadın hasta, sağ mandibula posteriorda diş benzeri sert kitle şikayetiyle kliniğimize başvurdu. İntraoral muayenede 47 numaralı diş bölgesinde yüzeyi pürüzlü, parlak siyah ve sarı renk değişiklikleri içeren, sert kitle görüldü. Panoramik radyografta 47 numaralı dişin gömülü olduğu ve sürme yolunda, alveol kret tepesinde, amorf yapıda, iyi sınırlı, dentin opasitesinde yapı bulunduğu görüldü. Hasta, sürmüş kompleks odontoma ön tanısı ile Ağız, Diş ve Çene Cerrahisi Kliniği'ne yönlendirildi.

Sonuç: Klinik ve radyografik incelemeler, sürmüş kompleks odontoma vakalarının doğru şekilde teşhisi ve uygun tedavi planının oluşturulmasında büyük önem taşımaktadır.

Anahtar Kelimeler: Panoramik radyografi; Periapikal radyografi; Sürmüş odontoma

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