

## Odontoma: Report of Four Cases, Including One Giant Case

Halil İbrahim Durmuş<sup>1\*</sup> , Cansu Geben<sup>1</sup> 

1. Harran University , Faculty of Dentistry , Department of Oral and Maxillofacial Surgery , Şanlıurfa , Türkiye

\*Corresponding author: Durmuş H.İ. Msc. PhD. Harran University , Faculty of Dentistry , Department of Oral and Maxillofacial Surgery , Şanlıurfa , Türkiye  
E-mail: [durmushibrahim@gmail.com](mailto:durmushibrahim@gmail.com)

### Abstract

Odontomas are recognized as the most common, benign, mixed odontogenic tumors and typically present without clinical symptoms. The exact cause of odontomas is still unknown. They do not exhibit gender differences. Diagnosis of odontomas is usually incidental during radiographic examination, although in some cases they can lead to tooth eruption complications. Odontomas primarily consist of enamel and dentin, but they may also contain cementum and pulp tissue in various forms. Odontomas are considered to be a hamartoma rather than a true neoplasm. They are classified into two groups: complex and compound odontoma. If the tooth tissues within them are arranged randomly, they are referred to as complex odontoma; if they resemble the shape of teeth, they are called compound odontoma.

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**Key words:** Odontom, odontogenic tumor, hamartoma, neoplasm, dental tissues

### Introduction

The term odontoma was first coined by Paul Broca in 1867 to describe odontogenic tumours and similar lesions. (1,2,3).Odontoma contains dental tissues such as dentin, enamel, pulp and cementum(16). Odontoma is the most common odontogenic tumour of the jaws. Odontomas are not considered a true neoplasm but a tumour-like malformation (16).Although various conditions such as genetics, local trauma, chronic inflammation have been suggested in the etiology of odontoma, the exact cause is still unknown.It is usually noticeable in the 20s(15). In most cases, they are discovered incidentally during routine radiological examination.Clinical symptoms may occur with delayed eruption. Persistent teeth were seen in our two cases.Odontomas are frequently associated with impacted teeth and may cause malposition, diastema, malformation and devitalisation of the adjacent tooth(17).If odontomas reach very large sizes, they can cause expansion and lead to facial asymmetry.It can be seen together with Gardner and Hermann's syndrome(12).

Odontoma is divided into complex and compound classifications. If it is formed similarly to tooth tissue, it is called compound odontoma; if enamel, dentin and cementum are irregularly combined, it is called complex odontoma. Complex odontoma is often seen in the mandibular molar region, while compound odontoma is often seen in the anterior maxilla (17,18).In almost all literature reviews, compound odontoma is more common than complex odontoma. This ratio is 2/1 (7,17,19).

In our 4 cases, three of them were compound odontomas and one was complex odontoma.

### Case presentation

**Case 1:**A 17-year-old male patient was referred to Harran University Faculty of Dentistry, Department of Oral and Maxillofacial Surgery in August 2023 due to a lesion incidentally noticed in the maxillary canine region.The patient had no significant medical history, facial asymmetry, or swelling, and was asymptomatic at the time of the visit.An orthopantomographic film was taken for radiological examination, which revealed a well-defined giant radiopaque lesion

surrounding the impacted canine tooth (Fig. 1). The lesion caused displacement of teeth 21 and 24 and resorption of the root of tooth 22 (Fig. 2).

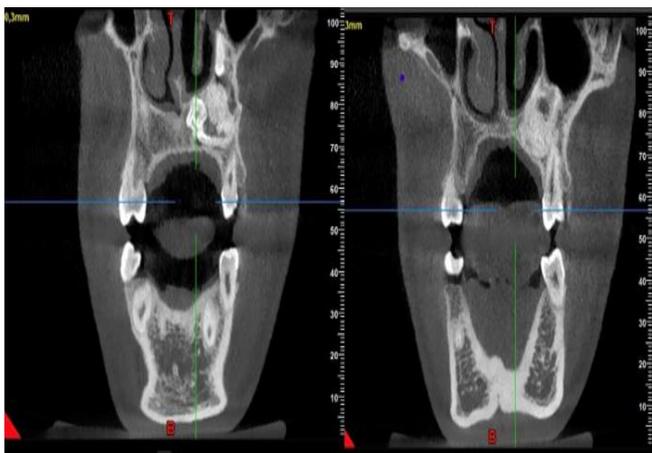


**Fig 1:** Missing deciduous canine.



**Fig 2:** Giant radiopaque mass surrounding the tooth in the coel maxilla canine region seen on the orthopantomographic film taken before treatment.

A computed tomography (CT) scan was performed to better visualize the borders of the lesion, revealing its associated with the base of the nose (Fig 3).



**Fig 3:** 3-dimensional computed tomography image.

Based on the clinical and radiographic findings, a preliminary diagnosis of complex odontoma was made and surgical treatment was indicated. Surgical removal was performed under general anesthesia using an intraoral approach. The lesion was found to be large and closely associated with tooth number 23, which failed to erupt. The flap was carefully removed after making the incision. The entire mass, along with the impacted tooth, was successfully surgically removed (Fig. 4). The remaining bone walls were checked for any residual lesion (Fig. 5). The flap was closed with vicryl suture without tension. The excised tissues were sent to the pathology department for histopathologic examination, which confirmed that the lesion was an odontoma. The patient was prescribed antibiotics, analgesics and mouthwash. She was advised to follow a soft diet. The suture was removed after 1 week.



**Fig 4:** Image of the removed odontoma with embedded canine.



**Fig 5:** Cleaned bone from the lesion.



**Fig 6:** Posttreatment panoramic radiograph.

**Case 2:** A 27-year-old female patient was referred to our clinic in October 2023 due to an incidental lesion in the left mandibular molar region. The patient had no significant medical history and was asymptomatic at the time of the visit. Radiographic evaluation revealed a well-defined radiopaque lesion above the mandibular canal associated with the root of the molar (Fig. 7).



**Fig 7:** Pretreatment panoramic radiograph

Based on the clinical and radiological findings, a preliminary diagnosis of a compound odontoma was made and surgical treatment was indicated. Surgical removal was planned under local anaesthesia. The odontoma, along with the tooth, was removed. The flap was closed with 3-0 silk suture without tension (Fig. 8). The tissues were sent to the pathology department for histopathologic examination, which confirmed that the lesion was an odontoma. Following surgery, the patient was prescribed antibiotics, analgesics and

mouthwash. She was advised to follow a soft diet. The suture was removed after 1 week.



**Fig 8:** Surgically removed odontoma

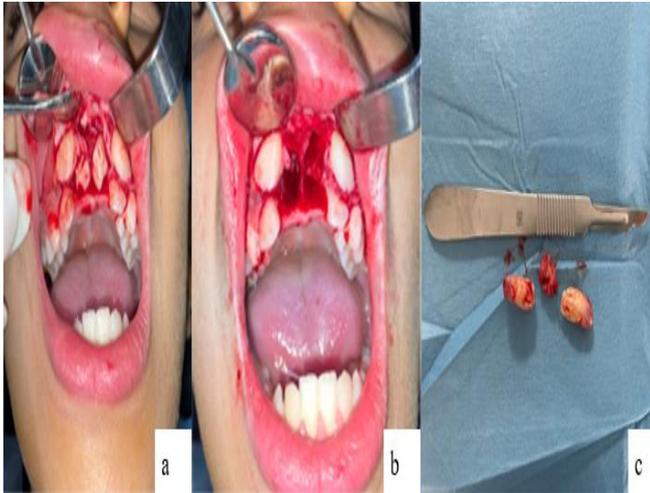
**Case 3:** A 12-year-old boy presented to our clinic with the complaint of delayed eruption of his maxillary central teeth. In the medical history, it was found that the patient was in good health. A painless, hard mass in the buccal region of the oral cavity was clinically detected. The patient was asymptomatic during the visit. Radiographic evaluation revealed a well-defined radiopaque mass with distinct boundaries in the anterior maxillary anterior region, obstructing the eruption of teeth 11 and 21. Based on clinical and radiological findings, surgical treatment was recommended with a preliminary diagnosis of compound odontoma (Fig. 9).



**Fig 9:** Pretreatment panoramic radiograph

The lesion was successfully removed along with the tooth. The flap was closed with vicryl suture without tension (Fig. 10). The excised tissues were sent

to the pathology department for histopathologic examination, which confirmed that the lesion was an odontoma. Following surgery, the patient was prescribed antibiotics, analgesics and mouthwash. She was advised to follow a soft diet.



**Fig 10(a,b,c):** Surgically removed odontomes

**Case 4:** A 10-year-old girl presented to our clinic with a complaint of delayed eruption of teeth. We did not find any significant medical history during the patient's anamnesis. Intraoral examination revealed a mass in the buccal region. Radiographic evaluation showed tooth-like structures in the maxillary anterior region in a position that prevented the eruption of teeth (Fig. 11).



**Fig 11:** Pretreatment panoramic radiograph

Based on clinical and radiographic findings, the lesions were excised under general anesthesia with a preliminary diagnosis of compound odontoma, and sutured using resorbable suture material. The excised tissues were sent to the pathology department for

histopathologic examination, which confirmed that the lesion was indeed an odontoma (Fig. 12).



**Fig 12(a, b,c):** Surgically removed odontomes

## Discussion

Odontoma is generally a symptom-free, slow-moving tumor. It is hamartomatous malformation composed of an untidy mass of both soft and hard textures of odontogenic origin. (14) It is the most common benign odontogenic tumor in the jaws with a rate of 22% (4). In a study by Escobar et al. 241 of 544 odontogenic tumors were odontomas with a rate of 44.3%. (5).

In a study by Santos et al. including 127 cases, the most common odontogenic tumor was odontoma with 50.40% (6). According to their morphologic and histologic characteristics, they are divided into 2 types: complex and compound. Compound type is 2 times more common than complex type (7,8). The compound form is more common in the anterior maxilla, while the complex form is more common in the posterior mandible (2). In our first case, the large odontoma we saw anteriorly in the maxilla was a complex odontoma contrary to this information.

The first stage gives a radiolucent appearance due to very little calcification, the second stage is intermediate, and the third stage contains intense radiopacity surrounded by a very small radiolucent ring (14). Odontoma may be associated with eruption disorders and incorrect positioning of the teeth. (7,8). In two of our cases, the lesion was recognized at an early age due to persistent teeth. Impacted teeth are a common condition that most frequently affecting the mandibular third molars and maxillary incisors.

Clinical data should be correlated with radiologic findings and histologic evaluation in order to diagnose odontomatosis. (9). In all our cases, we supported the radiologic findings histologically and additionally examined them three-dimensionally with Computed Tomography (CT). The pathology results of all lesions in our case series were in line with the preliminary diagnosis made after clinical and radiologic examination.

Although radiographic diagnosis of compound odontomas is easy because they contain tooth-like structures, the differential diagnosis of complex odontoma should be made with lesions such as cementoma, osteoid osteoma and cemento-ossifying fibroma and supernumere teeth (10).

Odontomas are usually painless lesions that are detected incidentally (11). Recurrence is rare and does not discriminate gender.

Rarely encountered erupted odontomas were first described by Rumel et al.(13) . There are also cases of erupted odontoma in the Turkish literature. In our cases, erupted odontoma was not encountered.

## Conclusion

Early diagnosis with clinical and radiographic evaluations followed by appropriate surgical intervention is critical for the elimination of persistent dental problems and prevention of pathologic complications.

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