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Compound odontoma involving the four quadrants of the jaws: A case report and review of the literature

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Odontomas are the most common odontogenic tumors, representing 70% of all odontogenic tumors. They may present in two specific forms; compound odontoma forms multiple small tooth-like structures, while complex odontoma forms an amorphous calcified mass. In this report, we present a 27-year-old male patient with multiple compound odontoma occupied regions at his jaws. The odontomas involve both alveolar and

basal processes of the maxilla and mandible as well as both maxillary sinuses. Converse to conventional recommended treatment, which is surgical excision of the lesion, the management was removal of the lesion and clinical-radiologic follow-up. The first year's follow-up findings are presented in this case report. (*Quintessence Int* 2014;45:341–344; doi: 10.3290/j.qi.a31331)

Key words: compound odontoma, maxilla, mandible, odontoma

Odontomas are the most common odontogenic tumors, representing 70% of all odontogenic tumors.¹ These tumors are considered to be developmental anomalies resulting from the growth of differentiated epithelial and mesenchymal odontogenic cells.² In gen-

eral, they are usually recognized in radiographic examination, and the treatment for small or average size odontomas is enucleation.³ Enucleation of greater size odontomas may result in potential fractures and damage to anatomic landmarks.³ There are two types of odontoma: complex and compound. A compound odontoma involves many separate, small tooth-like structures, while a complex odontoma forms an irregular mass of dentin and enamel without resemblance to a tooth.¹ We present a rare compound odontoma case involving bilateral maxillary/mandibular alveolar and basal bones in a 27-year-old Turkish male patient. The clinical, radiographic, and histopathologic aspects, any possible relevant systemic disorders, and management approach chosen are presented and discussed.

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CASE REPORT

A 27-year-old man was admitted to the Faculty of Dentistry, Çukurova University, Adana, Turkey, on June

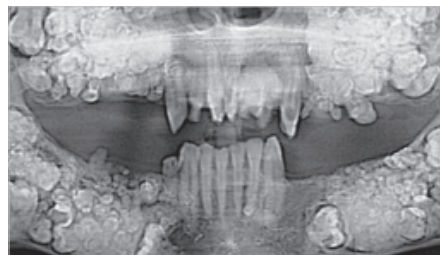


Fig 1 (left) Intraoral photograph showing maxillary arch with multiple unerupted teeth.

Fig 2 (right) Panoramic radiograph showing multiple radiopaque masses occupying both arches.

2011. His general dentist referred the patient due to the lack of multiple teeth and the presence of tooth-like structures with caries detected in clinical and radiographic examination. Past medical and family history was unremarkable. General physical examination of the patient revealed a debile-looking male with an advanced sight disorder. Clinical intraoral examination showed edentulism in both posterior segments in the maxilla and the mandible. The patient was free of paresthesia and pain intraorally and extraorally. Tooth-like structures with caries penetrating the oral mucosa were apparent in the anterior regions of the maxilla and the mandible (Fig 1). No other abnormality was detected intraorally. There was no extraoral swelling or cervical lymphadenopathy. Radiographic examination showed multiple and diffuse tooth-like opacities occupying the maxilla and the mandible as well as both maxillary sinuses. The posterior teeth were impacted due to these calcified lesions (Fig 2). Cone beam computed tomography (CBCT) images revealed the extensiveness of the lesions. The masses occupied the basal and alveolar parts of the mandible at the parasymphysis and body parts bilaterally. Similarly, maxillary premolar and molar regions were occupied by the masses. They extended to the rim of the orbital cavity superiorly and bilaterally without significant extraosseous expansion (Fig 3).

The patient was referred to the endocrinology, dermatology, hematology, and ophthalmology departments to study for possible relevant syndromes such as Gardner syndrome or cleidocranial dysplasia. Medical consultations did not confirm any syndrome. The patient was found to have mild mental retardation and severe myopia (−8.00, −7.00 diopter). The serum calcium, phosphorus, and alkaline phosphatase levels were within the normal limits.

According to clinical and radiologic findings, the initial diagnosis was multiple compound odontoma, and incisional biopsy was made from the right maxillary molar region. The histopathologic examination showed dentin, cement, enamel, and pulp tissues arranged in a tooth-like order. Histopathologic examination revealed the initial diagnosis and the final diagnosis of compound odontoma was made (Fig 4).

The surgical treatment options including enucleation and resection/reconstruction, their postoperative sequelae, and possible complications were discussed with the patient as well as his family members. The patient and family members refused an extensive surgery and preferred symptomatic treatment. The odontomas, which were penetrating oral mucosa, were removed under local anesthesia. The remaining parts were left in situ. The healing was normal at the regions where lesions were removed. A removable denture was fabricated and delivered to the prosthodontic department. The patient was recalled every 3 months for clinical and panoramic radiographic examination. Another CBCT scan was taken after 12 months. Both clinical and CBCT examinations showed that there was no enlargement of the masses in any direction after 12 months (Fig 5). It was concluded that the patient was in the course of asymptomatic status and follow-ups were continued without further surgical intervention. The patient was given a schedule of clinical and radiographic follow-ups.

DISCUSSION

Odontomas may be found at any age; however, they are mostly detected in the first two decades of life. There is no gender predilection and most lesions are

Figs 3a to 3d Initial CBCT images: (a) 3D reconstruction; (b) axial view; (c) sagittal view; (d) coronal view.

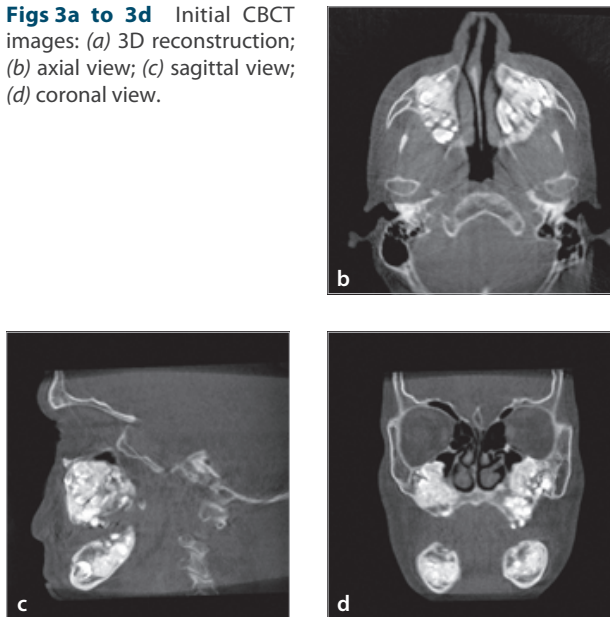
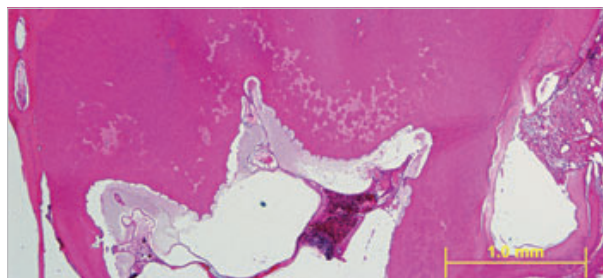
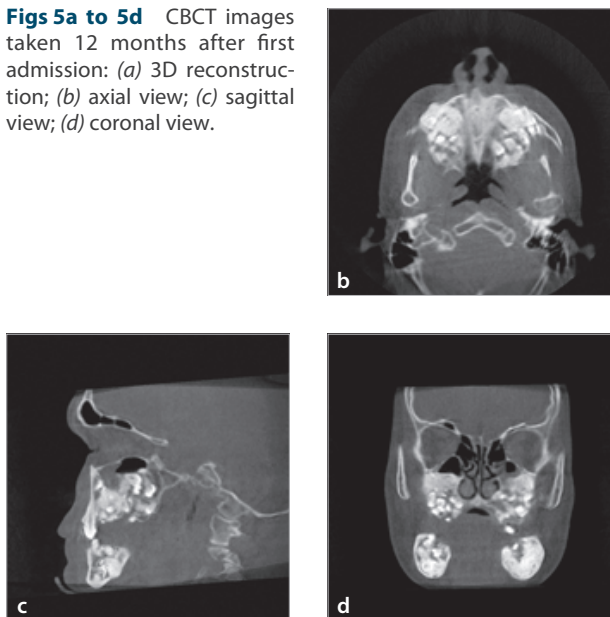


Fig 4 Photomicrograph showing dentin, cement, enamel, and pulp tissues arranged in a tooth-like order.



Figs 5a to 5d CBCT images taken 12 months after first admission: (a) 3D reconstruction; (b) axial view; (c) sagittal view; (d) coronal view.





detected on routine radiographs.⁴ The maxilla is affected slightly more frequently than the mandible by odontomas.⁵ Compound odontomas are usually found in the anterior part of the jaws and give rise to a painless swelling. However, complex odontomas tend to favor the posterior segments; they are usually seen in young persons, but may escape diagnosis until late in life.^{2,5} The radiographic differential diagnoses of complex and compound odontomas include cementoblastoma, ameloblastic fibro-odontoma, periapical cement-osseous dysplasia, and florid cement-osseous dysplasia.^{1,2} Our case was inconsistent with usual cases in terms of anatomic location, since the odontomas were located in the posterior segments of the maxilla and the mandible. The conventional treatment of odontoma is complete removal with any associated tissues.⁶ No recurrences are expected.

In this case report, we present a rare case with multiple compound odontomas in the maxilla and mandible, which are associated with impacted teeth. Although there are several publications reporting complex odontoma cases with unusual massive sizes,⁷⁻⁹ few cases with multiple compound odontoma occurring in both jaws are available. Bordini et al² reported a 17-year-old man with multiple compound odontomas in the jaws. The authors treated the patient surgically. All tooth-like tumor masses were excised and the impacted teeth were extracted with the enucleation of the tumor. Another multiple compound odontoma case was presented by Ajike and Adekeye.⁶ The patient was a 15-year-old girl with unacceptable facial appearance due to extensive extraosseous growth of the masses. They partly removed the masses in order to provide an esthetic and functional result.⁶ The literature shows four additional similar reports.² Out of four case reports, the lesions were completely removed in three reports and the patient was symptomatically treated in one case report, as for the present patient.¹⁰⁻¹³

Our patient was asymptomatic concerning pain and related neurologic and soft tissue involvement, and had no esthetic deficit due to growth of the lesions. Total surgical removal would result in massive defects, which require complicated reconstruction procedures.

The patient was dependent on his family due to his low-grade mental retardation and such surgical interventions would cause severe impairment in his life quality. We preferred clinical and radiologic follow-up without extensive surgery in case of inactivity of the lesions. This report differs from previous reports as we managed the patient partially with surgical removal of the lesions.

CONCLUSION

Although compound odontoma usually involves a single location and is found in the anterior portion of the alveolar bones, they may have multiple and bimaxillary involvements. The general dental practitioner should be aware of the unusual characteristics of this lesion. Conventional treatment approaches may not be applicable to all patients due to specific patient-related factors.

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