

Compound Odontoma: Differential Diagnosis and Review of the Literature

R Gedik¹, S Müftüoğlu²

ABSTRACT

Odontomas are the most common odontogenic tumours. They are usually asymptomatic and are often discovered during routine radiography. Compound odontomas are regularly calcified tissue that bear similarity to teeth or appear as a collection of small teeth. We report a rare case of compound odontoma in the mandible of an adult patient with clinical and radiological features and a review of the literature.

Keywords: Compound odontoma, mandibula, radiopaque, tooth-like

Odontoma Compuesto: Diagnóstico Diferencial y Revisión de la Literatura

R Gedik¹, S Müftüoğlu²

RESUMEN

Los odontomas son los tumores odontogénicos más comunes. Son generalmente asintomáticos y a menudo descubiertos en radiografías de rutina. Los odontomas compuestos son comúnmente tejidos calcificados que se asemejan a los dientes, o aparecen como un grupo de pequeños dientes. Reportamos un caso raro de odontoma compuesto en la mandíbula de un paciente adulto, con características clínicas y radiológicas, y una revisión de la literatura.

Palabras claves: Odontoma compuesto, mandíbula, radiopaco, similar al diente

West Indian Med J 2014; 63 (7): 793

INTRODUCTION

Odontomas are the most common odontogenic tumours. They are considered to be hamartomas rather than neoplasms, and are composed of the tissues native to teeth: enamel, dentin, cementum and pulp tissue. They develop from epithelial and mesenchymal components of the dental apparatus, producing enamel and dentin. They can occur at any age, but are most common in the first two decades of life, with an average age of 14–18 years. They are slightly more common in females and more common in the maxilla, especially the anterior maxilla, than in the mandible (1–6). Odontomas frequently can inhibit the eruption of adjacent teeth. Odontomas are generally small; however, they may occasionally grow large, resulting in bone expansion (6–10). Odontomas are further sub-classified based upon their gross and radiographic features into compound (small tooth-like

structures), complex (a conglomeration of dentin, enamel and cementum) and cystic. Compound odontomas are more commonly found in the anterior maxilla, and appear as a collection of small teeth, leaving few entities in the radiographic differential diagnosis except, perhaps, a supernumerary tooth (4, 11). Most lesions are detected on routine radiographs (1–8). Generally, odontomas have been associated with trauma during primary dentition as well as with inflammatory and infectious processes, hereditary anomalies (Gardner syndrome, Hermann's syndrome), odontoblastic hyperactivity and alterations in the genetic components responsible for controlling dental development (1–8). Histologically, compound odontoma have the tooth-like structures which are arranged in a uniform manner similar to the normal tooth (1–4). The structures in complex odontomas are mixed and disorganized. These lesions are benign and are conservatively treated with simple curettage. Recurrence is not described; if it recurs, one must rule out other odontogenic lesions such as calcifying odontogenic cyst and ameloblastic fibro-odontoma (8–16). The treatment of choice is not always surgical removal of the lesion, unless the patient had a history of pain or swelling in the area. We

From: ¹Department of Oral and Maxillofacial Radiology, Faculty of Dentistry, Cumhuriyet University, Sivas, Turkey and ²Children's Hospital, Sivas, Turkey.

Correspondence: Dr R Gedik, Cumhuriyet University, Faculty of Dentistry, Department of Oral and Maxillofacial Radiology, Sivas 58140, Turkey. E-mail: rgedik@cumhuriyet.edu.tr

present an interesting and a rare case of compound odontoma in the mandible of an adult patient.

CASE REPORT

A 38-year old woman presented to our dental faculty for a routine dental examination. Radiographs revealed a lesion of the anterior mandible. Neither the patient nor her parents could recall any history of pain or swelling in the area. She did not have a positive medical history of any hereditary disease. A panoramic radiograph showed a collection of tooth-like structures with a narrow radiolucent rim apical to the canine, lateral and central incisors in the right mandibula; she also had an impacted right maxillary premolar tooth (Figure).

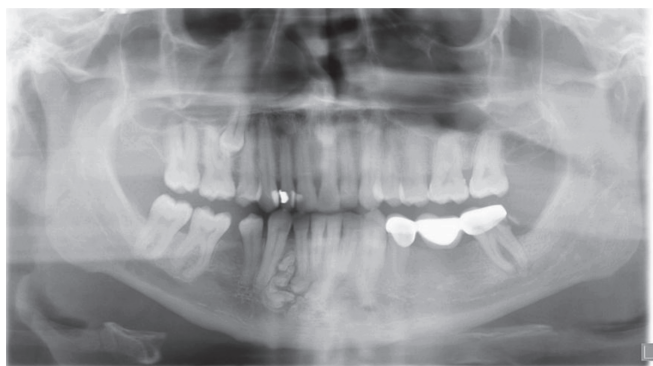


Figure: A panoramic radiograph shows a collection of tooth-like structures with a narrow radiolucent rim apical to the canine, lateral and central incisors in the right mandibula, as well as an impacted right maxillary premolar tooth.

DISCUSSION

Odontomas account for 22% of all odontogenic tumours. Odontomas are slow-growing, asymptomatic neoplasms found in jaws. In about 80% of cases, they are associated with impacted or unerupted teeth. Radiographically, odontomas present as a well-circumscribed radiolucency resembling a dental follicle or dentigerous cyst. Rarely, an odontoma may erupt into the oral cavity. Odontomas are generally small; however, they may occasionally grow large, resulting in bone expansion. Usually, odontomas can be confidently subclassified based on the radiographic appearance alone (1–7). Although they are commonly asymptomatic, clinical indicators of odontoma may include retention of deciduous teeth, noneruption of permanent teeth, pain, expansion of the cortical bone and tooth displacement (9–14).

Radiologically, odontomas are classified as complex, compound and cystic. Complex odontomas are less common than the compound variety in the ratio 1:2. Compound odontomas are more common in the anterior jaws, while complex odontomas occur more often in the posterior jaws. Compound odontomas tend to occur between teeth and tend to be composed of multiple small tooth-like structures, while complex odontomas tend to occur in the posterior jaws and

present as a conglomerate mass. Both types are made up of enamel matrix, dentin, cementum and dental pulp surrounded by a dental follicle or cyst. Compound odontomas appear as a collection of small teeth, leaving few entities in the radiographic differential diagnosis except perhaps, a supernumerary tooth (1–10). Complex odontomas appear as a radiodense mass of hard tissues which may result in a broader differential diagnosis. Both have radiolucent rims, representing dental follicular tissue or, less commonly, a dentigerous cyst.

Histologically, the odontoma is not a diagnostic dilemma. It is composed of dentin, cementum, pulpal tissue and enamel. However, mature enamel is lost during the decalcification processing and will not be seen on conventional haematoxylin and eosin stained slides. The compound odontoma recapitulates the organization of a normal tooth, while the complex odontoma appears as a disorganized mass of hard odontogenic tissue. Loose, myxoid connective tissue with odontogenic epithelial rests may be seen in close association with the lesion, and most often represents normal dental follicular tissue. Fibrous connective tissue with a cystic lining representing a dentigerous cyst may also be seen (15–21). Generally, as in the index case, the treatment of choice is not always surgical removal of the lesion, unless the patient had a history of pain or swelling in the area (1–4).

REFERENCES

1. Shafer WG, Hine MH, Levy BM. A textbook of oral pathology. 3rd ed. Philadelphia: WB Saunders Co; 1974: 276–8.
2. Baden E. Odontogenic tumors. Pathology Annual 1971; **6**: 475–568.
3. Nelson LB, Thompson DRL. Compound odontoma. Head Neck Pathol 2010; **4**: 290–1.
4. Srivastava A, Annaji AG, Nyamati BS, Singh G, Shivakumar GC, Sahana S. Complex odontoma in both the jaws: a rare case report. J Orofac Res 2012; **2**: 56–60.
5. Bordini J Jr, Contar CM, Sarot JR, Fernandes A, Machado MA. Multiple compound odontomas in the jaw: case report and analysis of the literature. J Oral Maxillofac Surg 2008; **66**: 2617–20.
6. Oz YG, Tosun G, Kiziloğlu D, Durmuş E, Şener Y. An unusual association of odontomas with primary teeth. Eur J Dent 2007; **1**: 45–9.
7. Noonan VL, Gallagher G, Kabani S. Compound and complex odontomas. J Mass Dent Soc 2006; **55**: 40.
8. Reichart PA, Philipsen HP. Compound odontoma. In: Odontogenic tumors and allied lesions. London: Quintessence; 2004: 149–53.
9. Serra-Serra G, Berini-Aytés L, Gay-Escoda C. Erupted odontomas: a report of three cases and review of the literature. Med Oral Patol Oral Cir Bucal 2009; **14**: E299–E303.
10. Vengal M, Arora H, Ghosh S. Large erupting complex odontoma: a case report. J Can Dent Assoc 2007; **73**: 169–73.
11. Junquera L, de Vincente JC, Roig P, Olay S, Rodriguez-Recio O. Intraosseous odontoma erupted into the oral cavity: an unusual pathology. Med Oral Patol Oral Cir Bucal 2005; **10**: 248–51.
12. Dagistan S, Cakur B, Göregen M. A dentigerous cyst containing an ectopic canine tooth below the floor of the maxillary sinus: a case report. J Oral Sci 2007; **49**: 249–52.
13. Cohen DM, Bhattacharyya I. Ameloblastic fibroma, ameloblastic fibro-odontoma, and odontoma. Oral Maxillofac Surg Clin North Am 2004; **16**: 375–84.
14. Dhanuthai K, Kongin K. Ameloblastic fibro-odontoma: a case report. J Clin Pediatr Dent 2004; **29**: 75–7.

15. Oghli AA, Scuto I, Ziegler C. A large ameloblastic fibro-odontoma of the right mandible. *Med Oral Patol Oral Cir Bucal* 2007; **12**: E34–7.
16. Chen Y, Li TJ, Gao Y. Ameloblastic fibroma and related lesions: a clinicopathologic study with reference to their nature and inter-relationship. *J Oral Pathol Med* 2005; **34**: 588–95.
17. Gallana-Alvarez S, Mayorga-Jimenez F, Torres-Gomez FJ. Calcifying odontogenic cyst associated with complex odontoma: case report and review of the literature. *Med Oral Patol Oral Cir Bucal* 2005; **10**: 243–7.
18. Kim IK, Kim JR, Jang KS, Moon YS, Park SW. Orbital abscess from an odontogenic infection. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2007; **103**: 1–6.
19. Ogunlewe MO, Adeyemo WL, Ladeinde AL, Bamgbose BO, Ajayi OF. Surgical management of a large complex odontoma of the mandibular angle-ramus region through intra-oral buccal approach – a case report. *Niger Postgrad Med J* 2005; **12**: 312–5.
20. Neville BW, Damm DD, Allen CM, Bouquot JF. Odontogenic cysts and tumors. In: *Oral and maxillofacial pathology*. 2nd ed. Philadelphia (PA): WB Saunders; 2002: 631–32.
21. Mupparapu M, Singer SR, Rinaggio J. Complex odontoma of unusual size involving the maxillary sinus: report of a case and review of CT and histopathologic features. *Quintessence Int* 2004; **35**: 641–5.