

# Infected Complex Odontoma – A Case Report

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## ABSTRACT

**Introduction:** Odontomas are benign, painless slow growing tumors with compound and complex variants. It has been classified as complex and compound odontomas. Complex odontoma is a tumor of mixed tissue origin. It is mostly detected and diagnosed on routine radiographic examination or may be suspected if corresponding tooth fails to erupt. Its management is surgical excision with excellent prognosis.

**Case report:** A thirteen years old girl reported with the painful swelling on right body of mandible. Along with diffuse hard and tender extraoral swelling, pus discharge with 46 and 47 was evident on intraoral examination. Radiography revealed an aberrant calcified mass surrounded by a radiolucent halo and displaced 47. These findings confirmed the diagnosis of infected complex odontoma.

**Conclusion:** Odontomas generally are quiescent yet can pose a threat by displacement of adjacent teeth and secondary infections. Both these complications were observed in this case. It makes clinicians to consider this entity whenever come across such clinical presentation.

**Key words:** Odontoma, complex odontoma, radiodiagnosis, prognosis

## INTRODUCTION

The term “odontoma” was first introduced by Paul Broca in 1867 to designate odontogenic tumors formed by the excessive development of transitory or complete dental tissue.<sup>1</sup> It refers to an odontogenic tumor of mixed tissue origin with epithelial and mesenchymal cells exhibiting complete differentiation to ameloblasts and odontoblasts forming abnormal enamel and dentin due to failure of these cells to reach a normal state of morpho-differentiation.<sup>2</sup> The structural relationship of the component tissue may vary from nondescript mass of dental hard tissue termed to as a complex odontoma while multiple well-formed teeth as a compound odontoma.<sup>4</sup> Odontomas have no sex predilection, and are mostly diagnosed in the second decade of life. They are preferentially located in the anterior maxillary region. Compound odontomas are more prevalent than complex odontoma, and show no predilection in terms of patient gender, age or location.<sup>4</sup> Radiologically, odontomas manifest as a solid radiopaque lesion surrounded by a thin radiolucent halo. Compound odontomas are irregular masses with variations in contour and size, composed of multiple radiopacities corresponding to the so-called denticles. In the complex variant, radiopacity is not specific and a disorganized, irregular single or multiple mass is seen. In both varieties a radiolucent halo corresponding to the connective tissue

capsule is present.<sup>5</sup> Surgical removal of odontomas is recommended in the absence of any complication/contraindications. Clinical and radiographic follow-up is advised where surgical treatment is deferred.<sup>6</sup>

The purpose of this paper is to illustrate a case of complex odontoma associated with an infection in the mandibular posterior region where an obvious cause for infection in otherwise healthy patient was difficult to find clinically. Further, the radiographic examination revealed an unerupted radiopaque mass suggestive of an odontoma as its eruption in the oral cavity is rare.

## CASE REPORT

A thirteen years old girl reported with a complaint of pain and swelling in right body of mandible since one and half months, for which she was treated by a physician but there was no relief.

Extraoral examination revealed a diffuse, hard and tender swelling over the body of mandible on right side extending up to right submandibular space with inflamed overlying skin. The local temperature was raised; ipsilateral submandibular lymph nodes were palpable and tender (fig. 1). Intraorally swelling was present in relation with 46, 47 regions with inflamed overlying mucosa. Pus discharge was seen through a punctum in the buccal gingiva (fig.2). Second molar was missing and 46 was

tender on percussion. Orthopantomograph showed a dense radiopaque mass surrounded by a radiolucent band in the region of third molar, with displaced second molar towards inferior border of mandible (fig. 3).

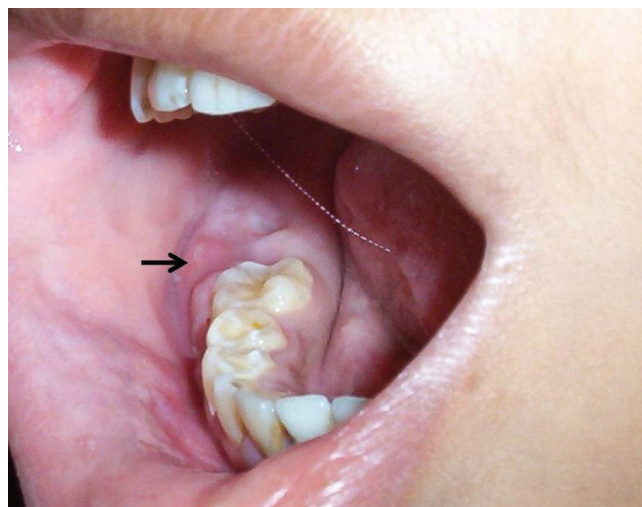
From clinical and radiographic findings, provisional diagnosis of secondarily infected complex odontoma was made. She was prescribed with analgesic (Ibuprofen, 200 mg, t.i.d.) and antibiotic (Amoxicillin, 250 mg, t.i.d.) for five days that substantially controlled pain and infection. Conservative surgery was performed under local anaesthesia with complete removal of the odontome confirming the clinico-radiographic diagnosis. Second molar was retained to erupt. Healing was uneventful (fig. 4 and 5).

## DISCUSSION

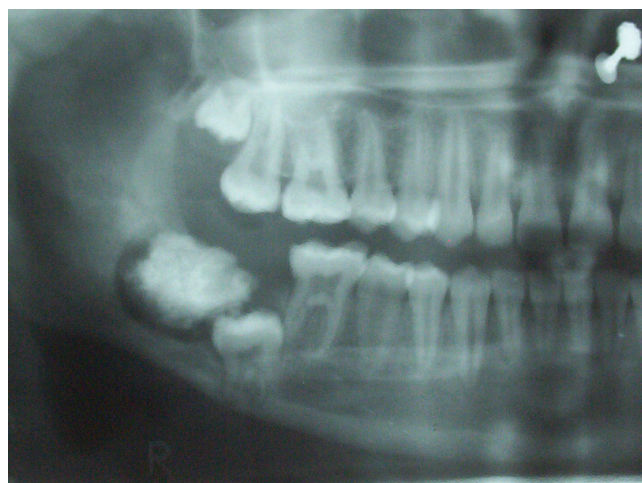
Odontomas are benign and slow growing tumor arising from tooth forming elements, either mesenchymal or a mixture of epithelial and mesenchymal elements. These tumors were first classified by Gabell et al in 1914, according to their developmental origin as epithelial, composite and connective tissue (mesodermal). Thoma and Goldman (1946) classified them as germinated, compound and complex composite odontomas, dilated odontomas and cystic odontomas.<sup>1</sup> According to Hitchin<sup>7</sup>, odontoma occurs by mutation in the genes concerned or by inheritance of these abnormal genes. Growth pressure, trauma and infections may be sources of disturbances in the mechanism of genes controlling tooth development. The World Health Organization has classified odontomas in context to histopathological viewpoint as: (a) complex odontomas, in which the dental tissues are well formed but exhibit a more or less disorderly arrangement; and (b) composite odontomas, in which the dental tissues are normal, but their size and conformation are altered – giving rise to multiple small tooth-like structures (denticles). Compound odontomas are found more frequently than Complex odontomas.<sup>4</sup> Compound odontomas usually show a predilection for the maxillary anterior region, while Complex odontomas are mostly found in the mandibular posterior region.<sup>8</sup> Same findings were present in this case. Odontoma is generally painless, neuralgic symptoms are present only when there is compression of nerve which is very rare. If odontoma get secondarily infected, it reveals symptoms of pericoronitis, sometimes leading to osteomyelitis.<sup>9</sup> Due to their odontogenic nature, odontomas can transform into a dentigerous cyst, which results from the cystic degeneration of the enamel organ after partial or total development of the crown.<sup>10</sup> In their analysis of 351 odontomas, Kraegers<sup>11</sup> found the average age for the compound odontoma as 16.5 years and for the complex odontoma as 22 years, which is very less in our case. Clinical finding for suspicion of odontoma may include retention of deciduous tooth, non-eruption of permanent tooth, pain, expansion of the cortical bone and



**Figure-1:** Extraoral photograph showing ill-defined swelling



**Figure-2:** Intraoral photograph showing missing 47 with swelling and infection

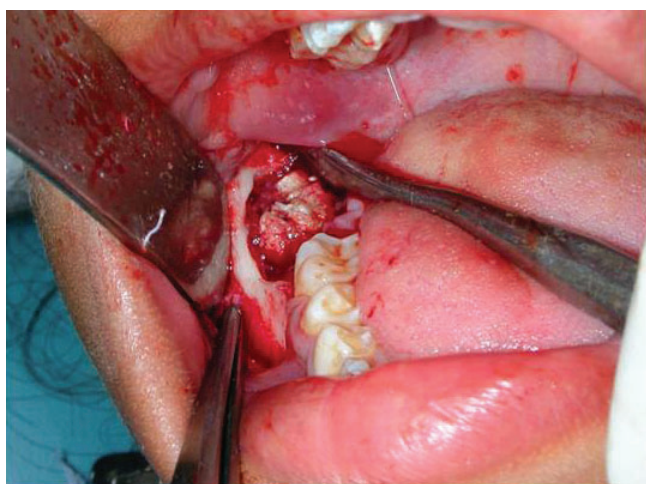


**Figure-3:** Panoramic radiograph revealing radiopaque mass with radiolucent band and displaced second molar

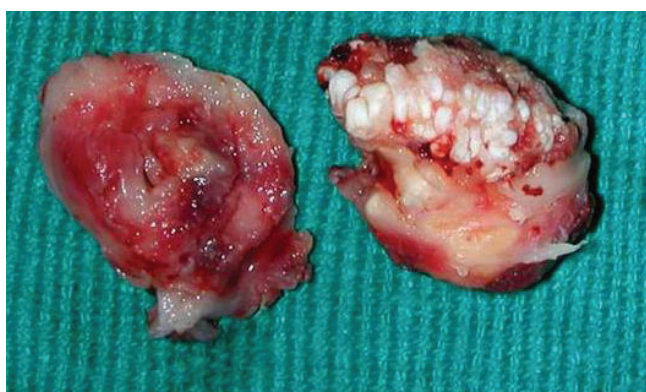
tooth displacement. Other symptoms include parasthesia in the lower lip and swelling in the affected area.<sup>6</sup> In present case, age of the patient was thirteen and coinciding with eruption of second molar so eruption gingivitis with the same was suspected.

The odontoma appears as a well-defined radiopacity





**Figure-4:** Surgical exposure of the odontoma



**Figure-5:** Surgical specimen

located in bone, but with a density that is greater than bone and equal to or greater than that of a tooth and contains foci of variable density. A radiolucent halo, surrounded by a thin sclerotic border, surrounds the radiopacity. The radiolucent zone is a connective tissue capsule of a normal tooth follicle. The thin sclerotic border resembles the corticated margin seen in a normal tooth crypt.<sup>6</sup> There are three developmental stages, based on the radiological features and degree of calcification of the lesion at the time of diagnosis. Thus, the first stage is characterized by radiolucency due to the absence of calcification of dental tissue, while the second or intermediate stage presents partial calcification, and the third a classically radiopaque stage exhibits predominantly calcified tissue with surrounding radiolucent halo<sup>5</sup>. In our report, there was an irregular, disorganized radiopaque mass with radiolucent halo suggestive of mature 'complex' odontoma.

Complex odontoma is a tumor of odontogenic origin that is asymptomatic and found on routine radiographs. They seldom erupt into the mouth and tend to be associated with impacted teeth. Despite their benign nature, their eruption can give rise to pain, inflammation, infection, and ulceration. Early diagnosis of odontomas is important for preventing craniofacial and tooth developmental problems. The early diagnosis accompanied by a proper treatment at right time will result in a favorable prognosis.<sup>12,13</sup>

Surgical excision of an odontoma and surrounding fibrous capsule is recommended as the treatment of choice. The lack of recurrence specifies that conservative excision is adequate.<sup>11</sup> This case was managed surgically with removal of odontoma along with its capsule.

## CONCLUSION

A case of secondarily infected complex odontoma in place of third molar causing displacement of mandibular second molar is reported. Diagnosis of this case was established on the basis of clinical and radiographic presentation that got confirmed post operatively.

## REFERENCES

1. Budnick SD. Compound and complex odontoma. *Oral surg.* 1976;42:501-506.
2. Shafer WG, Hine MK, Levy BM. Cysts and tumors of odontogenic origin. A textbook of oral pathology. 4<sup>th</sup> ed. India: Saunders Harcourt, 2001; pp258-317
3. White SC, Pharoah MJ. Benign tumors of the jaws. In oral radiology principles and interpretations. 5<sup>th</sup> ed. Missouri: Mosby, 2004; pp410-457
4. Hidalgo-Sánchez O, Leco -Berrocal MI, Martínez-González JM. Metaanalysis of the epidemiology and clinical manifestations of odontomas. *Med Oral Patol Oral Cir Bucal.* 2008;13:E730-4.
5. Amado-Cuesta S, Gargallo-Albiol J, Berini-Aytés L, Gay-Escoda C. Review of 61 cases of odontoma. Presentation of an erupted complex odontoma. *Med Oral.* 2003;8:366-73.
6. Vengel M, Arora H, Ghosh S, pai KM. Large Erupting Complex Odontoma: A Case Report. *JCDA.* 2007; 73:169-172.
7. Hitchin AD. The aetiology of the calcified composite odontomes. *B Dent J.* 1971;130:475-482.
8. 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:E 299-303.
9. Henriksson CO, Kjellman O. Complex odontoma. *Oral Surg, Oral Med, Oral Pathol.* 1964;18:64-69.
10. Sales MA, Cavalcanti MG. Complex odontoma associated with dentigerous cyst in maxillary sinus: case report and computed tomography features. *DMFR.* 2009;38:48-52.
11. Kraugers GE, Miller ME, Abbey LM. Odontomas. *Oral Surg Oral Med Oral Pathol.* 1989;67: 172-176.
12. Losso EM, Pizzatto E, Ulbrich LM. Complex odontoma associated to a primary maxillary canine: a case report. *RSBO.* 2009;6: 204-207.
13. Bagewadi SB, Kukreja R, Suma GN, Yadav B, Sharma H. Unusually large erupted complex odontoma: A rare case report. *Imaging Sci Dent.* 2015;45:49-54.

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