University J Dent Scie 2024; Vol. 10, Issue 3

Complex Odontoma: A Case Report

Abstract:
Odontomas are considered as benign tumors of odontogenic tissue origin and are more over non-aggressive. They can also be categorized as hamartomas and are a result of developmental malformation of odontogenic tissues. They possess limited and slow growth potential and are well differentiated. They can be ectodermal, mesodermal or mixed in origin. Compound odontomes are reported to be twice more common than complex odontomes. Complex odontomes are asymptomatic unless they cause bony expansion of the jaws.

Case report: This paper aims to report and discuss a case of 22-year-old female presented with complex odontoma of large size with impacted teeth 47 and 48 with painless swelling on right angle of mandible region.

Key-words: Complex Odontoma, Mandible,Odontogenic Tumors, Benign Tumors.

Introduction:

The term odontoma was initially introduced by Paul Broca in 1866, describing it as a tumor resulting from the excessive growth of fully developed dental tissue. Odontomas are abnormalities in development caused by the proliferation of fully differentiated epithelial and mesenchymal cells, leading to the formation of functional ameloblasts and odontoblasts.

Odontomas are benign developmental anomalies or lesions originating from odontogenic tissues, comprising enamel, dentin, cementum, and pulpal tissue. As odontomas progress, enamel and dentin may be laid down in a manner that produces structures resembling normal tooth anatomy. In 1914, odontomes were categorized based on their developmental origins into epithelial, composite (consisting of both epithelial and mesodermal elements), and connective tissue types. According to the WHO classification system, odontomes are grouped into three categories: Complex, Compound, and Ameloblastic fibro-odontomes. Compound and complex odontomes contain multiple tissue types and are therefore referred to as composite odontomas.

The majority of cases (83.9%) occur before the age of 30, with a peak incidence in the second decade of life. Interestingly, most odontomas found in the anterior segment of the jaw are of the compound composite type (61%), while those in the posterior segment are predominantly complex odontomas. Clinically, they present as painless, slow-growing lesions often discovered incidentally on routine radiographs.

Access this article online

Website: www.ujds.in

Quick Response Code

DOI: https://doi.org/10.21276/ujds.2024.10.3.10

Case Report :

A 22 years old female patient visited the Department of Oral and Maxillofacial Surgery, Maharana Pratap College of Dentistry and Research Centre Gwalior with chief complaint of swelling on the right side of the mandible. The swelling was painless and was present since last 2 month. Her medical

[1]NITIN JAGGI, [2]NIKHIL PUROHIT, [3]GUNPREET KAUR, [4]SHUBHANGI PATHAK, [5]ASHISH SINGH, [6]PARIDHI PATERIA, [7]AYUSHI GOUR
1,2,4,5,6,7Dept. Oral & Maxillofacial Surgery
Maharana Pratap College of Dentistry & Research Centre Gwalior
3Dept of Prosthodontics
Maharana Pratap College of Dentistry & Research Centre Gwalior

Address for Correspondence: Dr. Shubhangi Pathak
Dept. Oral & Maxillofacial Surgery
Maharana Pratap College of Dentistry & Research Centre Gwalior (MP)
Email: drshubhipatha.k97@gmail.com

Received : 25 July, 2024, **Published :** 30 Sept., 2024

How to cite this article: Nitin Jaggi, Nikhil Purohit, Gunpreet Kaur, Shubhangi Pathak, Ashish Singh, Paridhi Pateria, & Ayushi Gour. (2024). Complex Odontoma - Case Report. UNIVERSITY JOURNAL OF DENTAL SCIENCES, 10(3).

history was not significant. Clinically patient presented with diffuse bony hard swelling present on the mandibular angle region of the right side. The overlying skin was normal with normal mouth opening.

a)Preoperative frontal view showing b) lateral view swelling over left lower jaw.

Fig. (1). Pre-operative View.

Intraorally, the patient presented with missing mandibular right second and third molar tooth along with a breach in the corresponding alveolar mucosa in relation to 47 region. There was evidence of buccal expansion of the mandible in the same region which was hard and non tender on palpation. Further there was no significant lymphadenopathy. Provisional diagnosis considered was odontoma.

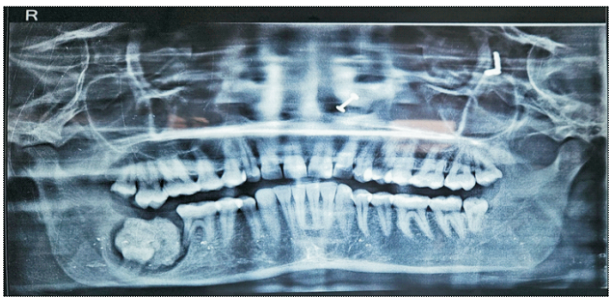

Fig.(2). Panoramic radiograph showing the lesion as well defined radiopacity in the right side of the mandible in the angle region.

The orthopantomogram (OPG) revealed a spectacular well-defined radiopacity, of about 25.7 x 27.1 mm in dimensions involving second and third molar. Further there was evidence of secondary inferior displacement of inferior alveolar nerve canal around the 48. The clinical and radiographic presentation of the lesion led to diagnosis of complex odontoma fig (1,2).

3 D RECONSTRUCTION

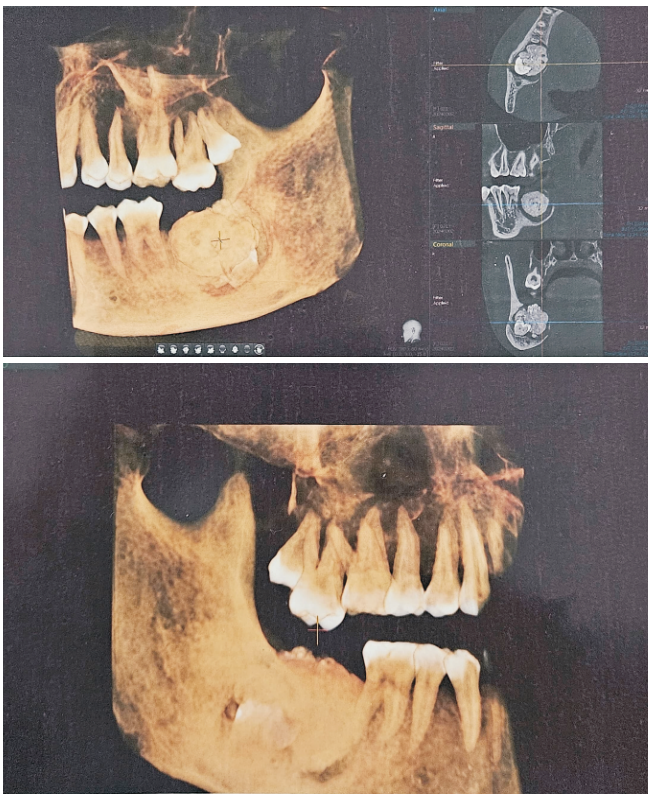

Fig. (3) CBCT showing cross sectional images in three different regions coronal, axial and sagittal sections.

In anticipation of surgical excision of the lesion, CBCT images were obtained. The CBCT images revealed a 25.7 x 27.1 mm hyperdense mass surrounded by hypodense border interspersed with areas of hypodensity. The lesion extended superiorly from the alveolar ridge, depressing the mandibular canal inferiorly, displacing the right second molar inferiorly. Hyperdense area resembling teeth are observed in the lesion. Distal root resorption of first molar is seen. The diagnosis of complex odontoma was confirmed i.r.t 47 and 48.

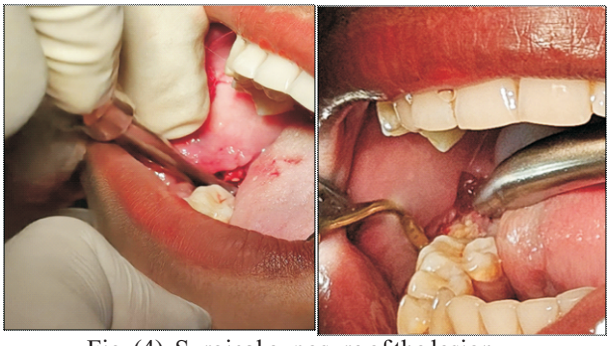

Fig. (4). Surgical exposure of the lesion.

Under local anaesthesia, the surgery was performed, consisting of surgically excision of whole odontoma in pieces along with the impacted teeth 47, 48 and the lesion all around. The excised lesion specimen was sent for histopathological examination.

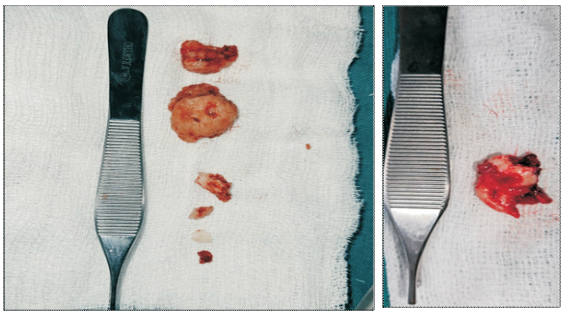

Fig (5) Excised lesion.

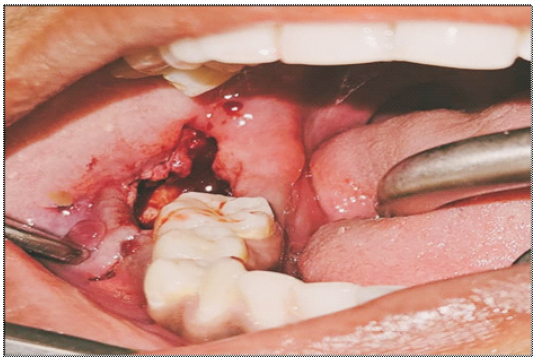

Fig. (6) Surgical site after excision of lesion.

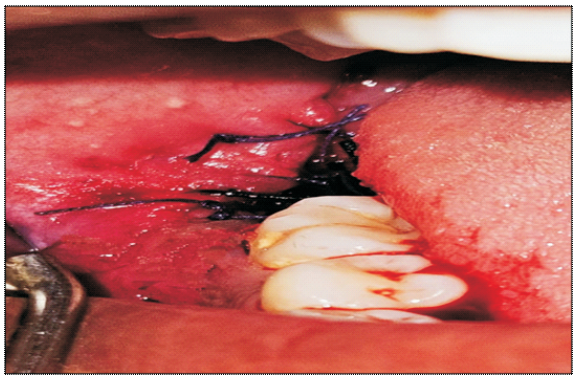

Fig. (7)post-operative view with sutures

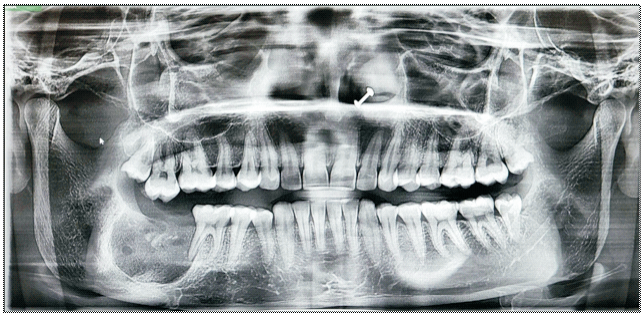

Fig (8). Immediate post operative OPG.

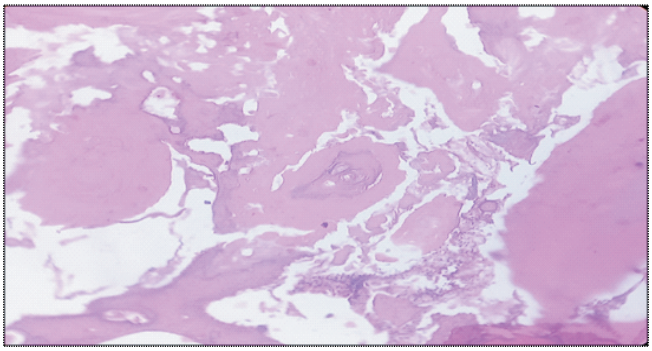

Fig (9). Histopathological picture.

Histopathological examination revealed hard bony irregular massess with haphazard arrangement of basophilic enamel matrix, dentinoid material and tubular dentin which confirmed the diagnosis of complex odontoma.

Discussion:

Odontomas represent the most frequently encountered odontogenic tumors, with an incidence rate of 22%. Subsequent literature suggests their developmental nature, often commencing alongside the emergence of normal dentition. Typically, complex odontomas documented in studies measure approximately 1-2 cm in diameter. There is no gender bias, and odontomas may manifest at any age, although they are most commonly identified during the second decade of life.

As previously mentioned, complex odontomas typically exhibit no symptoms. Moreover, they tend to be small in size, seldom surpassing the dimensions of the associated tooth. Occasionally, however, they may grow to unusually large proportions, as observed in this instance. In such scenarios, they manifest as swelling in the jaw's alveolar region, resulting in facial asymmetry and expansion of the cortical plates. Clinically, the affected tooth may remain unerupted or absent. Additionally, it can cause misalignment, deviation, or impaction of neighboring teeth, as observed in the current case.

While odontomas can manifest in various locations within the jaws, complex odontomas are notably more prevalent in the mandibular molar region.

Some authors suggest that the presence of an unerupted tooth alongside a complex odontoma implies that the eruptive force exerted by the unerupted tooth may contribute to the odontoma's eruption into the oral cavity.

The radiographic appearance of complex odontomas varies according to their developmental stage and level of mineralization.

Radiographically, a complex odontoma presents as a radiopaque mass that lacks resemblance to typical tooth structure. Histologically, it is identified by sheets of immature tubular dentin containing enclosed hollow structures resembling teeth.

Conclusion:

Complex odontomas, classified as odontogenic tumors, typically exhibit an asymptomatic nature. This case report highlights a painless, sizable complex odontoma associated with the absence of the second and third lower right mandibular molars. It underscores the significance of diagnosing complex odontomas that develop in conjunction with missing teeth. Early detection of such dental lesions is facilitated by panoramic radiography and CBCT imaging, allowing for timely surgical excision and subsequent histopathological examination, ultimately averting complications. The prognosis for these tumors is highly favorable.

References:

1. Park JC, Yang JH, Jo SY, Kim BC, Lee J, Lee W. Giant complex odontoma in the posterior mandible: A case report and literature review. Imaging Sci Dent. 2018 Dec;48(4):289-293.
2. D'Cruz AM, Hegde S, Shetty UA. Large Complex Odontoma: A report of a rare entity. Sultan Qaboos Univ Med J. 2013 May;13(2): E342-5.
3. Sajesh S, Edsor E, Nandagopan S, Devi SS, Praveen V, Chidambareswaran S. Compound and Complex Odontomes: Case Series with Surgical Management and Brief Review of Literature. J Pharm Bioallied Sci. 2021 Nov;13.
4. Santos LA, Lopes LJ, Roque-Torres GD, Oliveira VF, Freitas DQ. Complex Odontoma: A Case Report with Micro-Computed Tomography Findings. Case Rep Dent. 2016; 2016:3584751.
5. Boffano P, Zavattero E, Roccia F, Gallesio C. Complex and compound odontomas. J Craniofac Surg. 2012 May;23(3):685-8..
6. Bagewadi SB, Kukreja R, Suma GN, Yadav B, Sharma H. Unusually large erupted complex odontoma: A rare case report. Imaging Sci Dent. 2015 Mar;45(1):49-54.
7. Yadav M, Godge P, Meghana SM, Kulkarni SR. Compound odontoma. *Contemp Clin Dent*. 2012;3(Suppl 1):S13-S15.
8. Boffano P, Zavattero E, Roccia F, Gallesio C. Complex and compound odontomas. *J Craniofac Surg*. 2012;23(3):685-688.
9. Smith GC. An interesting presentation of a complex-compound odontome. *Aust Dent J*. 1985;30(4):265-267.
10. Samuels HS, Gerry RG. Complex-compound odontoma: report of case. *J Oral SurgAnesth Hosp Dent Serv*. 1963; 21:348-352.