

Surgical Removal of Maxillary Complex Odontoma- A Rare Case Report

Shamil.MT, Rena Ephraim, T Rajamani

Post graduate student, Dept. pedodontics and preventive dentistry, Mahe Institute of Dental sciences, chalakara, paloor, UT of poducherry, India

Case Report

***Corresponding author**

Dr. Shamil MT

Article History

Received: 06.05.2018

Accepted: 15.05.2018

Published: 30.05.2018

DOI:

10.21276/sjodr.2018.3.5.6



Abstract: Odontomas are mixed benign hamartomaous malformation of odontogenic origin. Mainly two type complex and compound Odontomas, complex type more often seen in premolar and molar region of mandible, compound type more often seen in anterior maxilla. They commonly occur in permanent teeth. They are generally assymptomatic, detected on routine radiographic examinations or radiographs are taken to determine the reason for failure of a tooth to erupt. Odontogenic tumor treated by surgical enucleation of lesion. Here we report a case of complex Odontomas in an 11 year old girl that cause distal displacement of maxillary lateral incisors, which is rare occurrence.

Keywords: Odontoma, complex odontoma, compound odontoma, hamartomaous.

INTRODUCTION

Odontomas are most common mixed benign tumors of odontogenic origin combining mesenchymal and epithelial components and undergo complete differentiation of epithelial and mesenchymal cells that give rise to ameloblasts and odontoblasts[1]. The Odontomas is perhaps more accurately defined as a hamartoma than a true neoplasm [2]. The term Odontomas was first coined by Broca in 1886, who defined it as a tumor formed by overgrowth of complete dental tissues [3].

According to WHO Classification, Odontomas is classified

- Ameloblastic fibro-odontomas: It consists of varying amount of calcified dental tissue and dental papilla like tissue, resembling fibroma. The ameloblastic fibro-odontome is considered as an immature precursor of complex odontome.

- Odonto-ameloblastoma: It is very rare neoplasm, resembles an ameloblastoma both structurally and clinically but contains enamel and dentine.
- Complex Odontomas: This consists of calcified dental tissue are simply arranged in an irregular mass bearing no morphologic similarity to rudimentary teeth.
- Compound Odontomas: Composed of all odontogenic tissue in an orderly pattern those results in many teeth like structure but without morphologic resemblance to normal teeth.

Z Gorlin *et al.* classified Odontomas as either complex or compound. There are essential two types of Odontomas [5].

- Complex composite odontoma
- Compound composite odontoma

A new type known as hybrid odontoma is also reported by some authors. Odontomas constitute about 22% of all odontogenic tumors of the jaws[6]. Incidence of complex Odontomas between 5 and 30%. Odontomas are discovered during 2nd and 3rd decade of

life. Compound odontoma is slightly more than common than complex odontoma[5]. Odontomas generally asymptomatic and discovered on routine radiographic examination [7].

Treatment of choice is surgical removal of the lesion and followed by curettage of enveloping soft tissue should be done to prevent cystic degeneration. Specimens send for histopathological examination for diagnosis [8, 9]

CASE REPORT

A 11 year old female patient reported to department of Pedodontics and preventive dentistry Mahe Institute of Dental Sciences and Hospital, Mahe, with chief complaint of irregularly placed and widely separated upper front teeth. Intra oral examination revealed that retained right primary lateral incisors, distal displacement of of right maxillary lateral incisors and mesial displacement of maxillary central incisors. The patient was medically fit.

Based on the history, clinical examination provisionally diagnosed as retained deciduous right lateral incisor. Differential diagnosis was odontoma,

supernumerary teeth, adamantoid odontogenic tumor, and calcified epithelial odontogenic tumor.

An orthopantomograph and Intra oral periapical radiograph revealed that well demarcated two radio opaque lesion, surrounded by radiolucent areas distal to maxillary right central incisor and mesial to right maxillary lateral incisors, coronal to retained deciduous maxillary right lateral incisors .which result in wide distal displacement of maxillary right lateral incisors .another radiograph was taken by shifting X-ray tube to more left side to know the position of odontoma. One radio opaque mass moved to opposite side and another move to same side. This confirmed that one is labial and other one is palatal.

Removal of odontoma had done by surgical procedure under LA. After LA administration, extraction of deciduous right lateral incisors, full thickness mucoperiosteal flap was reflected from right maxillary premolar to left lateral incisor. The vertical releasing incision avoided for the esthetic reason. Since the bone covering was thin removed by round burs, mass of calcified structure removed with elevator

without damage to adjacent teeth. Palatal flap was reflected from 14 to 22. Thin superficial layer of bone was removed by using curette. Calcified tissue removed by using elevator. All the hard tissue removed and cavity was curetted .The sharp bony edges removed by using bone roentgen and smoothing with bone file.

Intra oral periapical radiograph was taken to make sure the complete removal of the lesion immediately after the procedure. Specimens send for histopathology examination. Flap was repositioned by interrupted sutures. Postoperative medication consists of antibiotics and analgesics for 7 days.

Histopathologic report showed an irregular arrangement of dental tissue such as enamel, dentin and cementum, together with odontoblastic cells in pulp tissue. This confirmed diagnosis as complex odontome.

The suture were removed after 1 weak and patient had no pain any sign of intra oral swelling or inflammation. After follow up period of one month, fixed orthodontic treatment was planned for the alignment of maxillary anterior teeth.



Fig-1: Front view photograph of the patient



Fig-2: Pre-operative IOPAR and Orthopantomographic



Fig-3: A Mucoperiosteal flap was raised and bone over line odontoma was removed



Fig-4: Excised odontoma and retained deciduous teeth



Fig-5: Flap repositioned and sutured



Fig-6: Post-operative view after one month

DISCUSSION

Complex odontomas are less common than compound odontomas in the ratio of 1:2[10]. More of the compound type (62%) occur in the anterior maxilla in association with the crown of an unerupted canine and 70% of complex odontomas are found in the mandibular first and second molar area.⁵ Another study

shown occurrence of odontoma in maxilla is 67% and in mandible is 33% with a marked predilection for the anterior maxillary region i.e. 61%. Interestingly both type of odontoma occurred more frequently on the right side of jaw than left side (compound 62% and complex 68%)[11]

The actual etiology of odontoma is unknown. It has been suggested that local trauma or infection, inflammatory or infectious process, cell rest of serres (dental lamina remnants), mature ameloblast or due to hereditary anomalies (Gardner's syndrome, Herman syndrome), odontoblastic hyperactivity and genetic alteration may lead to production of the lesion[12]. Hitchin suggested that mutation in the epithelial cells of tooth germ may change the inherent capacity of odontogenic epithelium to go through the cap stage and bell stage for tooth formation, and stimulate mesenchymal differentiation to form functional ameloblast and odontoblasts, leading to the formation of odontoma[13].

Odontomas are generally asymptomatic but there are certain clinical indicators which includes, retained deciduous teeth, un-erupted or impacted permanent teeth, malposition or displacement of adjacent teeth, aplasia and expansion of cortical plate. Other symptoms include paresthesia in lip and swelling in the affected area[14].

Radiographs are most suitable aid in the diagnosis of Odontomas. In our case the lesion appeared as an irregular radiodense calcified mass surrounded by a thin radiolucent area, no resemblance to dental structure. Radiographs also used to assess the development stages of odontoma formation based on the degree calcification. In the initial stage Odontomas appears radiolucent due to absence of calcification; intermediate stage is characterized by partial calcification; and in the final stage the odontoma appears radiopaque mass surrounded by a radiolucent halo[15]. Since odontomas are well capsulated lesion, chances of recurrence is less, so management comprises of a conservative surgical excision [12].

Histologically, odontomas consists of varying amount of enamel, enamel organ pulp tissue and cementum. The connective tissue capsule is similar to that of dental follicle. Ghost cells are often seen along with spherical dystrophic calcification, enamel concretions and sheets of dysplastic dentin[16].

In general, because of small dimension of the lesions and its uneventful biologic behaviour, a conservative surgical enucleation is recommended, and no recurrence has been reported so far[17]. However, enucleation of large odontomas may affect adjacent bone and teeth[18]. Ideally odontomas should be removed when the permanent teeth adjacent to the lesion shows about the one-half of its root development so that the tooth eruption will not be disturbed[19].

CONCLUSION

Odontomas very common jaw tumors, more commonly associated with impacted. Teeth and rarely erupt into the oral cavity. These lesions are benign in nature; they can give rise to inflammation, pain and

infection when they erupt in the mouth. Adequate knowledge of their characteristics, early detection and treatment of Odontomas could increase the possibility of preservation of the impacted teeth. The treatment of choice is surgical removal of the odontoma, followed by histological analysis.

REFERENCES

1. Regezi, J. A., Sciubba, J. J., & Jordan, R. C. (2003). Oral pathology clinical pathological correlations. 6 [sup] th ed. *Missouri: Saunders Elsevier*, 168.
2. Neville, B. W., Damm, D. D., Allen, C. M., & Bouquot, J. E. (2002). Bone pathology. *Oral and maxillofacial pathology*, 3, 646-8.
3. Cohen, D. M., & Bhattacharyya, I. (2004). Ameloblastic fibroma, ameloblastic fibro-odontoma, and odontoma. *Oral and maxillofacial surgery clinics of North America*, 16(3), 375-384.
4. Pindborg JJ. Histological typing of odontogenic tumours, jaw cysts, and allied lesions. International histological classification of tumors. 1971:1-44.
5. Satish, V., Prabhadevi, M. C., & Sharma, R. (2011). Odontome: a brief overview. *International journal of clinical pediatric dentistry*, 4(3), 177.
6. Bhaskar, S. N. (1986). *Synopsis of oral pathology* (pp. 282-284). Saint Louis, USA: Mosby.
7. Das, U. M., & Nagarathna, A. (2002). Unerupted maxillary primary canine associated with compound composite odontoma: A case report. *Journal-indian society of pedodontics and preventive dentistry*, 20(3), 98-101.
8. Mehta, D., Raval, N., Udhani, S., Parekh, V., & Modi, C. (2013). An unusual case report of erupted odontoma. *Case reports in dentistry*, 2013.
9. Reddy, G., Reddy, G. V., Sidhartha, B., Sriharsha, K., Koshy, J., & Sultana, R. (2014). Large complex odontoma of mandible in a young boy: a rare and unusual case report. *Case reports in dentistry*, 2014.
10. Vengal, M., Arora, H., Ghosh, S., & Pai, K. M. (2007). Large erupting complex odontoma: a case report. *Journal of the Canadian Dental Association*, 73(2).
11. Shafer, W. G., Hine, M. K., Levy, B. M., & Tomich, C. (1997). Oral aspects of metabolic disease. *textbook of oral pathology 4th Edition*, 633-645.
12. Shekar, S. E., Rao, R. S., Gunasheela, B., & Supriya, N. (2009). Erupted compound odontome. *Journal of oral and maxillofacial pathology: JOMFP*, 13(1), 47.
13. Atkinson, S. R. (1949). Changing dynamics of the growing face. *American journal of orthodontics*, 35(11), 815-836.
14. Chaudhary, N., Ahlawat, B., Kumar, A., & Bhardwaj, V. (2015). Surgical management of a complex odontoma-a case report. *Indian Journal of Scientific Research*, 6(2), 157.

15. Vengal, M., Arora, H., Ghosh, S., & Pai, K. M. (2007). Large erupting complex odontoma: a case report. *Journal of the Canadian Dental Association*, 73(2).
16. Cohen, D. M., & Bhattacharyya, I. (2004). Ameloblastic fibroma, ameloblastic fibro-odontoma, and odontoma. *Oral and maxillofacial surgery clinics of North America*, 16(3), 375-384.
17. Mortellaro, C., Berrone, M., Turatti, G., Rimondini, L., Del Prever, A. B., Canavese, F., ... & Farronato, G. (2008). Odontogenic tumors in childhood: a retrospective study of 86 treated cases. Importance of a correct histopathologic diagnosis. *Journal of Craniofacial Surgery*, 19(4), 1173-1176.
18. Biocic, J., Macan, D., Brajdic, D., Manojlovic, S., Butorac-Rakvin, L., & Hat, J. (2010). Large erupting complex odontoma in a dentigerous cyst removed by a piecemeal resection. *Pediatric dentistry*, 32(3), 255-259.
19. Raj, K., Shetty, S. B., Joy, A., Shetty, R. N., & Kaikure, M. (2015). Compound Odontoma: A Case Report. *Int J Adv Health Sci*, 1(12), 10-13.