

COMPOUND ODONTOMA – A RARE CASE REPORT IN A 17 MONTH OLD CHILD

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ABSTRACT:

Introduction: Odontomas are Hamartomatous lesions of odontogenic origin. They comprise of two varieties complex and compound. Aetiology of odontoma is multifactorial. Usually odontomas are asymptomatic clinically and diagnosed only on routine radiographic imaging in children and young adolescents without any gender predominance. Mostly they may be associated with missing or impacted teeth or delayed eruption of a tooth.

Case report: The present case delineate an unusual presentation of the odontoma in a 17 months old male in lower anterior which was removed completely along with the capsule. Patient had reported no complications in a duration of 10 month follow-up.

Conclusion : To ensure better prognosis, early diagnosis of odontomas and complete removal is necessary.

Key words: odontoma, compound odontoma, unerupted teeth

INTRODUCTION:

The term “odontoma” was coined first by Paul Broca in 1866, who defined odontoma as tumor formed by the overgrowth of transitory/complex dental tissue. Odontomas are developmental anomalies which results from growth of completely differentiated epithelial and mesenchymal cells which give rise to functional ameloblast and odontoblast¹

Odontomas are non aggressive lesions which are more likely Hamartomatous in nature than neoplastic. Despite its designation as hamartoma, it is considered to be most common odontogenic tumors. It is also associated with odontogenic cyst and tumors. Odontomas are the most common maxillary tumors, and according to different sources in the literature account for 22–67% of all odontogenic maxillary neoplasms.² Most of the odontomas are found in young adults. A compound odontoma is most commonly seen in anterior maxilla where as complex odontoma is seen in posterior mandible.³ Several factors have been associated with the pathogenesis of odontomas. It could be because of trauma in the primary dentition in childrens, hyperactivity of odontoblasts or changes in the genetic components responsible for dental development⁴ This case report presents an unusual case of compound odontoma in the anterior mandible of a seventeen months old child.

CASE REPORT

A 17 month old male child reported to department of pedodontics with chief complaint of swelling in mandibular left anterior region. Patients medical and family history were inconclusive. Intraoral examination revealed unerupted deciduous teeth in lower left anterior region with mild swelling. The radiographic examination revealed intraoral periapical radiograph taken showing compound odontome in association with 72, 73. There were multiple small teeth like radioopaque structures at the coronal portion of mandibular left primary second incisor and canine.

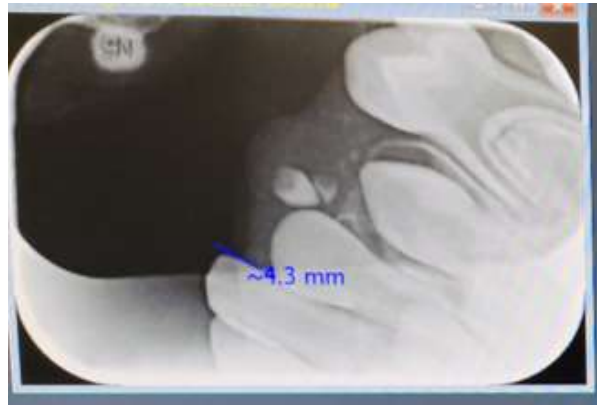


Figure 1

Provisional diagnosis of compound odontoma was made based on clinical and radiographic assessment. After gaining adequate anaesthesia, mucoperiosteal flap was elevated from distal surface of primary incisor 71 and mesial surface of primary molar 74. Surgical excision of the lesion by curettage, removing calcified tooth like structures were removed without disturbing the unerupted 72,73. The surgical area was curetted and finally irrigation done with povidone iodine-saline solution. After hemostasis was achieved, the flap was approximated and closed primarily with 3.0 silk sutures and post operative radiograph were taken immediately. (Figure 2).



Figure 2



Figure 3

Sutures were removed one week postoperatively. The specimen containing multiple bits of soft and hard (tooth specimens, small miniature than normal) tissue specimen, each measuring approx. 1.2 x 1.4 x 2 cm in diameter, pinkish white in color, soft in consistency with irregular border and surfaces. All the bits of tissues sent for processing. Histopathological examination confirmed the provisional diagnosis of compound odontoma, showing encapsulated mass of multiple denticles, embedded in a fibrous connective tissue stroma. Each one of the denticles shows, presence of enamel (empty spaces), dentin, pulp and calcified cementum, which are arranged in a similar fashion as seen in normal tooth. At places presence of odontogenic epithelium showing tall columnar cells resembling ameloblasts like and presence of Ghost cells appreciated at places. (Figure 6,7)



Figure 4



Figure 5

Two months postoperatively intraoral periapical radiograph was taken to check the eruption for 72 and 73.(Figure 3). In intraoral periapical radiograph , position of unerupted 72 was measured which was 4.3 mm thickness from soft tissue to crown of 73 in intraoral periapical radiograph taken immediately after surgery and 2.3 mm after 2 months follow up shows erupting 72, 73. In 4 month post operative radiograph ,completely erupted 72 and erupting 73 is seen with minimal thickness of soft tissue in radiograph (Figure 4) and completely erupted 72 and 73 seen in 10 month follow up radiograph.(Figure 5).

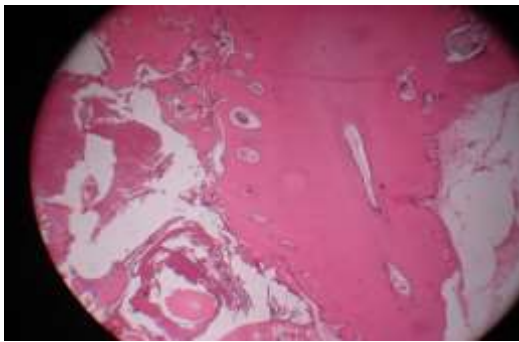


Figure 6

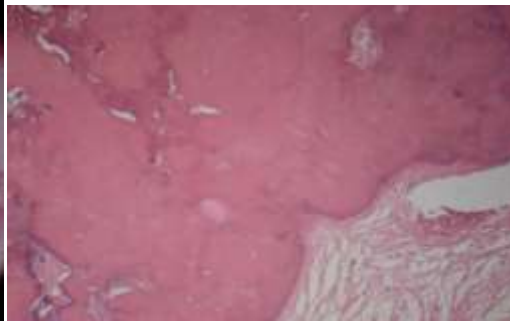


Figure 7

DISCUSSION:

Odontoma by definition refers to” **Tumor of Odontogenic origin**” as it arises from the growth of completely differentiated epithelial and mesenchymal cells that give rise to ameloblasts and odontoblasts. Odontomas are more common, asymptomatic odontogenic hamartomatous malformations because it’s a developmental malformation which manifest later ,presenting with self limited growth an also Not a true neoplasm, but a true neoplasm may develop in a hamartoma⁵. In a broad sense, it means a growth with both the epithelial and mesenchymal components exhibiting complete differentiation resulting in functional ameloblasts and odontoblasts. The most diagnostic clinical presentation for an odontoma is its association with impacted or unerupted primary teeth.⁶ The mean age of detection on an average is 14.8 years, with the prevalent age being the second decade of life. There is some predilection for the occurrence in males (59%) when compared with females (41%).

Classification:

According to the World Health Organization (WHO) classification 2005, odontomes can be divided into three groups:⁷

1. Complex odontome: calcified dental tissues , simply arranged in an irregular mass bearing no morphologic similarity to rudimentary teeth.
2. Compound odontome: consist of all odontogenic tissues in an orderly pattern, which result in many teeth-like structures, but without resemblance to normal teeth morphologically.
3. Ameloblastic fibro-odontome: consists of varying amounts of calcified dental tissue and dental papilla-like tissue, resembling an ameloblastic fibroma. The ameloblastic fibro-odontome is considered as an immature precursor of odontoma of complex type.

are usually separated by a septum of bone. Because of the very low recurrence, the treatment is surgical removal of the lesion. Removal of calcified tissue is a simple surgical procedure but special care should be taken to remove it completely as it is encapsulated in order to avoid a relapse which is dangerous in immature complex odontomas.

Conclusion:

The present case report describes compound odontoma in anterior mandible, along with a retained primary tooth. The higher chances of a retained deciduous tooth and its unerupted successor associated with odontoma is highlighted. This was diagnosed in children's routine dental visit with caries-free dentition. Adverse effects of odontomas, the author suggests that it should be given on routine dental check-ups for children so that these anomalies can be detected earlier, thereby, minimising the interventions needed after enucleation.

Conflict of interest:

The authors declare that there is no conflict of interests regarding the publication of this paper.

References:

1. Patil S, Rahman F, et al. Odontomas: review of literature and report of a case. *J Oral Maxillofac Pathol* 2012;3:224–227.
2. Ravikiran Ongole and Praveen BN, Ongole textbook of oral medicine, oral diagnosis and oral radiology, 3rd edition.
3. Michael Glick, Burket's textbook of oral medicine twelfth edition
4. Ioannis I, Emmanouil V, Nadia TL, Minas L. A retrospective analysis of the characteristics, treatment and follow-up of 26 odontomas in Greek children. *Journal of Oral Science*. 2010;52(3):439–447.
5. Patil S, Rao RS, Majumdar B. Hamartomas of the oral cavity. *J Int Soc Prevent Communit Dent* 2015;5:347-53.
6. Kannan KS, Prabhakar R, et al. Composite compound odontoma- A case report. *J Clin Diagn Res* 2013 Oct;7(10):2406–2407. DOI: 10.7860/JCDR/2013/7432.3540.
7. Tomizawa M, Otsuka Y, et al. Clinical observations of odontomas in Japanese children: 39 cases including one recurrent case. *Int J Paediatr Dent* 2005;15:37–43. DOI: 10.1111/j.1365-263X.2005.00607.x.
8. Paul M. Speigh, Takashitakata. New tumor entities in the 4th edition of World Health Organization classification of head and neck tumors: odontogenic and maxillofacial bone tumors. *Virchows Arch* (2018) 472:331-339.
9. Morgan P. Odontogenic tumors: A review. *Periodontology* 2011;57:160-76.
10. Salgado H, Mesquita P. Compound odontoma-case report. *Rev Port Estomatol Cir Maxilofac* 2013;54:161-5.
11. Singh S, Singh M, Singh I, Khandelwal D. Compound composite odontome associated with an unerupted deciduous incisor-a rarity. *J Indian Soc Pedod Prev Dent* 2005;23:146-50.
12. Cuesta SA, Albiol JG, Aytés LB, Escoda CG. Revisión de 61 casos de odontoma. Presentación de un odontoma complejo erupcionado. *Med Oral* 2003;8:366-73.
13. Koussoulakou DS, Margaritis LH, Koussoulakos SL. Curriculum vitae of teeth: Evolution, generation, regeneration. *Int J Biol Sci* 2009;5:226-43
14. Crivelini MM, de Araujo VC, de Sousa SO, de Araujo NS. Cytokeratins in epithelia of odontogenic neoplasms. *Oral Dis* 2003;9:1-6.
15. Ronell Bologna-Molina, Sirced Salazar-Rodríguez, Ana María Bedoya-Borella, Ramón Gil Carreón-Burciaga, Gabriel Tapia-Repetto, Nelly Molina-Frecher. A Histopathological and Immunohistochemical Analysis of Ameloblastic Fibrodentinoma. *Case Reports in Pathology* 2013:1-7.
16. Xavier GM, Patist AL, Healy C, Pagrut A, Carreno G, Sharpe PT, et al. Activated WNT signaling in post-natal SOX2-positive dental stem cells can drive odontome formation. *Sci Rep* 2015;5:14479.
17. G. Shafer, M. K. Hine, and B. M. Levy, "Cysts and tumors of the jaws," in *A Textbook of Oral Pathology*, pp. 308–311, WB Saunders, Philadelphia, Pa, USA, 4th edition, 1997
18. S. White and M. Pharoah, *Oral Radiology: Principles and Interpretation*, Mosby, St. Louis, Mo, USA, 9th edition, 2000.
19. Wood NK, Goaz PW. Differential diagnosis of oral lesions. (3rd ed). St Louis: CV Mosby 1985;526-601.
20. L. B. Kaban, *Pediatric Oral and Maxillofacial Surgery*, Saunders, Philadelphia, Pa, USA, 1990.
21. Fadil, Adil Ghalib. "Knowledge And Practice Regarding Infection Control Among Dental Students At Basra University College Of Dentistry, Iraq." *International Journal Of General Medicine And Pharmacy (Ijgmp)* 5.6 (2016): 35-46.
22. Jolden, Tsering, And Tashi Dolkar. "Change In The Authority And Status Of The Aged: Emerging Challenges And Issues." *International Journal Of Humanities And Social Sciences (Ijhss)* 6.1, Dec-Jan 2017; 1 8.

23. Jaiswal, Lawakush, Mohammad Ul Hassan, And Arun Kumar. "Experimentation And Thermal Analysis Of Cylindrical And Conical Shaped Fins." *International Journal Of Mechanical Engineering (Ijme)* 7.4: 1-10.
24. Patil, Vathsala, Et Al. "A Comparative Study On The Effect Of Stress In Dental Implant Structure Using Finite Element Analysis." *Int J Mech Prod Eng Res Dev* 9 (2019): 709-17.
25. More, Shyam, Et Al. "A Study Of Prevalence Of Obesity In Adolescents Of A Select Primary Urban Health Centre Of Navi Mumbai." *International Journal Of Medicine And Pharmaceutical Science (Ijmeps)* 5.6, Dec 2015, 39-42.
26. Suresh, Suja, S. Aruna, And G. Valli. "Prevalence And Health Seeking Behavior Among Specific Women Group On Reproductive Tract Infection In Rural Community Area Of Kancheepuram District, Tamil Nadu: A Cross Sectional Study Report." *International Journal Of Medicine And Pharmaceutical Sciences (Ijmeps)* 7.4 (2017): 1-6.