Journal Homepage: -www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI:10.21474/IJAR01/17443
DOI URL: http://dx.doi.org/10.21474/IJAR01/17443
ISSN NO. 2320-5407

RESEARCH ARTICLE

A MULTIPLE TOOTH TALE: UNIQUE REPRESENTATION OF ODONTOME

Shajaratul Yakeen Nabi[1], Nidha Farooq[2], Nazia Lone[3] and Mohsin Sidiq[4]

1. Post Graduate Scholar, Department of Pedodontics and Preventive Dentistry, Government Dental College & Hospital, Srinagar, Kashmir, J&K, India.
2. Post Graduate Scholar, Department of Pedodontics and Preventive Dentistry, Government Dental College & Hospital, Srinagar, Kashmir, J&K, India.
3. Professor & Head, Department of Pedodontics and Preventive Dentistry, Government Dental College & Hospital, Srinagar, Kashmir, J&K, India.
4. Assistant Professor, Department of Pedodontics and Preventive Dentistry, Government Dental College & Hospital, Srinagar, Kashmir, J&K, India.

Manuscript Info

Manuscript History
Received: 20 June 2023
Final Accepted: 24 July 2023
Published: August 2023

Keywords:
Odontoma, Benign Tumor, Odontogenic Tumor, Delayed Eruption.

Abstract

Odontomas are benign asymptomatic lesions associated with delayed eruption or detected accidently on radiographic examination. This is a case report of female patient aged eight years with chief compliant of non-eruption of maxillary central incisor. On radiographic examination, multiple denticles were seen hindering path of eruption of permanent central incisor. The treatment protocol followed was surgical removal of odontoma encouraging eruption. Early recognition allows better prognosis by preventing alterations in surrounding hard and soft tissues.

Introduction: -

Odontomas are described as a benign tumor of odontogenic origin caused by hamartomatous overgrowth of dental epithelial and mesenchymal tissues. The term was first coined by “Broca” and etiological factors attributed to local pressure, infection, remnants of dental lamina, trauma and geneticswere first described by “Kramer”.[1,2]

Odontomas are usually asymptomatic seen associated with impacted or unerupted teeth, retained deciduous teeth, swelling, expansion of bony cortical plates, displacement of teeth, absence of teeth etc.[3]It is mostly small in dimensions with age predilection during second decade of life and common in posterior region of mandible.[4]

It constitutes about 22% of all odontogenic tumors of the jaws and WHO has described two main types i.e. compound and complex odontomas with incidence being 9-37% and 5-30% respectively.[2]The compound one is characterised by tooth like structures arranged in orderly manner whereas the complex one appears as a disorganised dental tissues without any resemblance to tooth.[5]Compound odontomas are seen more commonly than complex ones in ratio of 2:1 with most odontomas in anterior jaw region being of compound variety and that in posterior area are of complex nature.[6]The diagnosis can be made by intraoral periapical radiographs, OPG etc but with the advent of CBCT marked improvement in diagnosis and identification of such lesions was made allowing it to be possible for us to enhance our treatment planning as it gives 3D analysis with better spatial resolution.[4]

In this paper, a case of massive compound odontoma with 33 denticles in an eight-year-old has been described which was diagnosed after compliant of non-eruption of maxillary anterior teeth.

Corresponding Author: - Dr. Shajaratul Yakeen Nabi
Address: - Post Graduate Scholar,Post Graduate Scholar, Department of Pedodontics and Preventive Dentistry, Government Dental College & Hospital, Srinagar, Kashmir, J&K, India, 190010.

Case report

An eight-year-old girl reported to the Department of Pediatric dentistry, Government Dental College Srinagar with the chief compliant of non-eruption of maxillary anterior teeth for one year. Onintraoral examination a small dome shaped swelling was seen approximately 3.5*1.5 cm involving labial vestibule from 51 to 53. It was hard in consistency and slightly tender on palpation with retained 51 with no extraoral findings. No significant family or past medical or dental history was seen to be contributory. On IOPAR examination, multiple radiopaque structures were seen associated in region 51 to 53.

Figure 1: - Pre operative clinical and radiographic picture

In anticipation of surgical excision of the lesion, CBCT was required to be done that showed conglomerated radiopaque mass extending from alveolar crest to basal bone to right nasal floor base with dimensions of lesion being 1.5 cm labiopalatally, 1.2 cm transversely and 2.1 cm superioinferiorly. Hyperdense areas were seen resembling tooth structure. Based on clinical and radiographic findings, the condition was provisionally diagnosed as compound odontoma. The differential diagnosis can be ameloblastic fibro odontoma, fibroma, dentinoma, cementoblastoma etc.

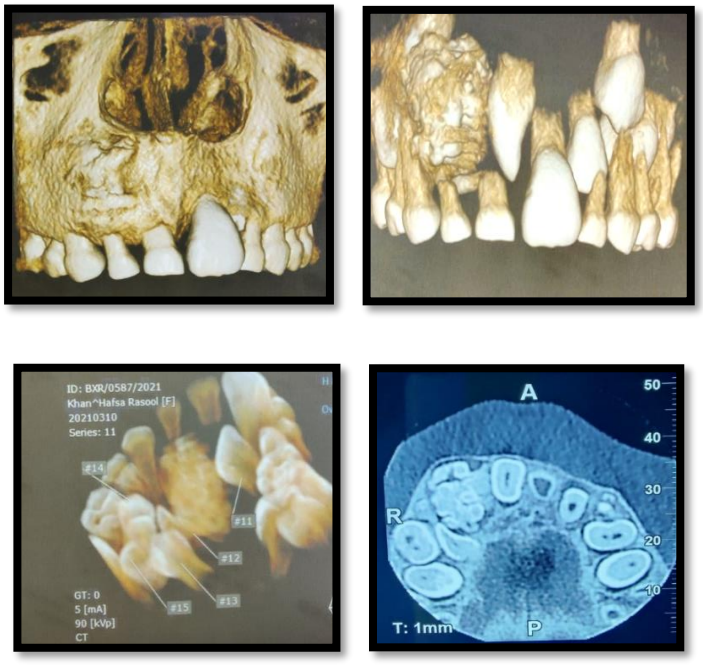

Figure 2: - CBCT Findings showing radio opaque mass in region of 51 to 53

Treatment

Treatment of choice for managing such a case was planned to be complete surgical enucleation of denticles and associated soft tissues along with retained 51.[6]

After all the necessary investigations and setting up of the surgical armamentarium, a surgical excision was planned. Local anaesthesia administration was done via infraorbital and nasopalatine route. A mucoperiosteal flap was raised from 61 to 53 region to visualise the area of interest. Removal of the bony cortical field was also done using surgical bur. About 33 denticles were carefully removed along with retained 51& 52 to facilitate the eruption of 11. The area was debrided with saline and all sharp bony margins were rounded off. The mucoperiosteal flap was sutured back with 3-0 black silk. The patient was prescribed antibiotics and analgesics for 5 days and recalled after one week for suture removal.

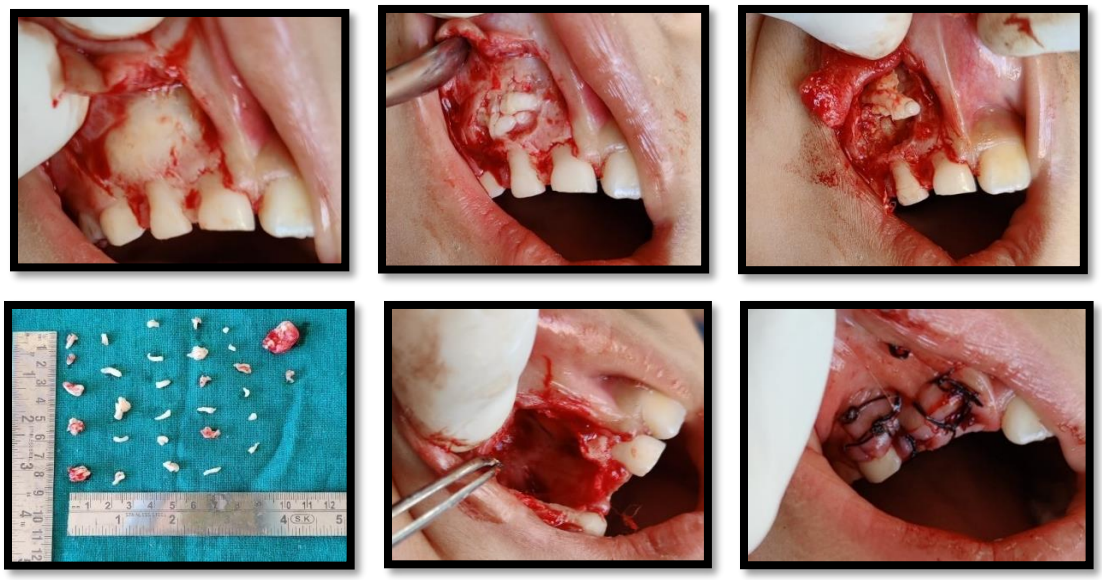

Figure 3: - Stepwise Surgical Excision OfOdontome.

The excised tissue was sent to the Department of Pathology, Government Medical College, Srinagar for histopathological evaluation. Dimensions of the specimen were variable ranging from 2mm x 3mm to 5mm x 7mm. Histopathological investigation revealed central zones of pulp spaces and areas of dental tissues like enamel, dentine, cementum. Ground sections also revealed tissues of odontogenic origin i.e., enamel, dentine, pulp and cementum.[7]

Figure 4: - Post operative radiograph showingcomplete removal of odontome

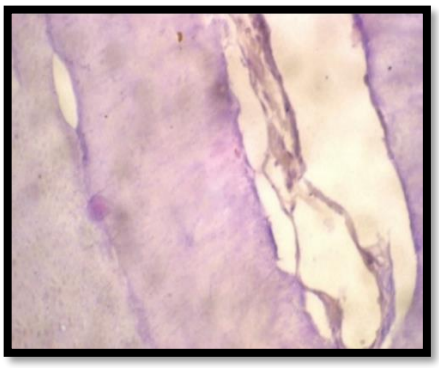

Figure 5: - Histopathological picture confirming presence of compound odontome

The healing of excised wound was uneventful and occurred by means of secondary intention. The patient was kept on regular recall and follow ups for 3, 6 .9, 12 and18 months. The radiographic evaluation was done to check the status of erupting tooth 11 and after12 months 11 erupted in the oral cavity.

Figure 6: Follow up pictures showing eruption of central incisor after removal of odontomic hindrance

Discussion: -

Odontomasare a type of benign odontogenic malformation occurring due to overgrowth of both epithelial as well as mesenchymal components. The overgrowth may be attributed to the possibility of any mutations in the gene controlling tooth differentiation and development. There may be overexpression of tumor specific programs at an appreciable level in such kind of growths.[7,8]

Odontomas are asymptomatic mostly associated with occurrence dur to trauma, infection etc which may stimulate growth potential of the dental tissues. Routinely it can be detected by radiography giving information about minute details of the lesion. The presence of such lesions may influence the adjacent structures and causing pathological alterations like devitalization, impaction, mobility etc.[4,9]

Odontomas are usually small but some can grow more than 8-10 cm leading to extensive expansion of underlying jaw bones and prominent facial asymmetry. The case under discussion revealed conglomerated radiopaque mass involving right of anterior maxilla which were similar to those found by other researchers.

Histopathologically, central zones of pulp spaces and areas of dental tissues like enamel, dentine, cementum were seen which was consistent with other case reports of compound odontomas.

The need for the removal of odontomas is necessitated due to the facts that it contains variety of tooth formulations that predispose an individual to cystic changes, interferences with eruption of teeth, bone destruction etc.[6,10]

The treatment and management of such lesions is surgical enucleation allowing for minimal chances of recurrence with best prognosis.

Conclusion: -

In conclusion it can be inferred that odontomas can be treated efficiently by conservative surgical approach. Diagnosis at an early age and prompt treatment with early surgical excision prevents eruption disturbances. A careful follow up of case along with implementation ofproper preventive and interceptive orthodontics, if necessary, prevents future malocclusion.[11]

References: -

1)Shafer WG, Hine MK, Levy BM. A Text Book of Oral Pathology.Cysts and Tumours of Odontogenic Origin. 4th ed. Philadelphia: W.B. Saunders and Co.; 1993. P. 308-12.
2)Kramer IR. WHO. International Histological Classification ofTumours. Histological Typing of Odontogenic Tumour. 2nd ed. Berlin: Springer; 1992. P. 16-21.
3)S. C. Isler, S. Demircan, M. Soluk, and Z. Cebi, "Radiologic evaluation of an unusually sized complex odontoma involving the maxillary sinus by cone beam computed tomography," Quintessence International, vol. 40, no. 7, pp. 533–535, 2009.
4)T. M. Soluk, S. Pehlivan, V. Olgac, N. Aksakallı, and C. Alatli, "Clinical and histopathological investigation of odontomas: review of the literature and presentation of 160 cases," Journal of Oral and Maxillofacial Surgery, vol. 70, no. 6, pp. 1358–1361, 2012.
5)A. M. D'Cruz, S. Hegde, and U. A. Shetty, "Large complex odontoma: a report of a rare entity," Sultan Qaboos University Medical Journal, vol. 13, no. 2, pp. 342–345, 2013.
6)Singh S. Management of unerupted central incisor due to compound odontoma: A case report. Int J Oral Maxillofac Pathol2012; 3:45-8.
7)Hidalgo-Sanchez O, Leco-Berrocal MI, Martinez-Gonzalez JM. Metaanalysis of the epidemiology and clinical manifestations of odontomas. Med Oral Patol Oral Cir Bucal 2008;13: E730-4
8)Papagerakis P, Peuchmaur M, Hotton D, Ferkdadji L, Delmas P, Sasaki S, et al. Aberrant gene expression in epithelial cells of mixed odontogenic tumors. J Dent Res 1999; 78:20-30.
9)S. Govindrajan, J. Muruganandhan, S. Shamsudeen, N. Kumar, M. Ramasamy, and S. Prasad, "Complex composite odontoma with characteristic histology," Case Reports in Dentistry, vol. 2013, Article ID 157614, 5 pages, 2013.
10)Serra-Serra G, Berini-Aytes L, Gay-Escoda C. Erupted odontomas: A report of three cases and review of the literature. Med Oral Patol Oral Cir Bucal 2009;14: E299-303
11)Kale YJ, Dahake PT, Patil PS, Dadpe MV. Management of a massive compound odontoma in a 9-year child. Contemp Clin Dent 2016; 7:409-12.