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Complex Odontoma of Primary Dentition in a 5 Year Old Child, a Rare Case Report with Review of Literature

Dr. Rajat Kapoor[1], Dr. Mudunuri Ravi Teja[2], Dr. Purak Misra[3]

[1]Assistant Professor and Head of Unit, Department of Plastic Surgery, Grant Government Medical College, Mumbai, Maharashtra, India
drrajatkap[at]gmail.com

[2]Senior Resident, Department of Plastic Surgery, Grant Government Medical College, Mumbai, Maharashtra, India
mudunuriraviteja[at]gmail.com

[3]Senior Resident, Department of Plastic Surgery, Grant Government Medical College, Mumbai, Maharashtra, India
purak.surg[at]gmail.com

Corresponding Author Email: *purak.surg[at]gmail.com*

Abstract: ***Odontomas are considered to be hamartomas rather than neoplasms, and are composed of natural teeth tissues: enamel, dentin, and cementum and pulp tissue. They are broadly classified into compound odontoma (small tooth like structures) and complex odontoma (a conglomeration of dentin, enamel and cementum). Generally, odontomas have been associated with trauma during primary dentition as well as with inflammatory and infectious processes, hereditary anomalies (Gardner syndrome, Hermann's syndrome), odontoblastic hyperactivity and alterations in the genetic components responsible for controlling dental development. This study presents a rare case of complex odontoma in primary dentition in the mandible a child of 5 year. Till now only 11 cases of complex odontoma in primary dentition were reported in literature, youngest being 4years old.***

Keywords: Compound odontoma; Complex odontoma; Primary dentition

1. Introduction

Odontomas are considered as hamartomatous odontogenic lesions in which both epithelial and mesenchymal cells exhibit complete differentiation with the result that functional ameloblasts and odontoblasts form enamel and dentin respectively. This enamel and dentin are usually laid down in an abnormal pattern because the organization of the odontogenic cells fails to reach a normal state of morphological differentiation[1]. These tumours are basically formed of enamel and dentin but they can also have variable amounts of cementum and pulp tissue[2], Odontomas are characterised by slow and painless growth and may be associated with retention of primary tooth or delay in the eruption of primary and permanent teeth[3]. It was in 1867 that Paul Broca first used the term "Odontoma."[4]. According to the World Health Organization classification, (WHO, 2005) two distinct types of odontomas are acknowledged: complex and compound odontoma. In complex odontomas, all dental tissues are formed, but arranged in a more or less disorderly pattern; and compound odontomas is a malformation in which all of the dental tissues are represented in a pattern that is more orderly than that of the complex type. In it dental tissues are arranged in numerous tooth-like structures known as denticles[5].

The aetiology of the odontoma is unknown. Generally, odontomas have been associated with trauma during primary dentition as well as with inflammatory and infectious processes, odontoblastic hyperactivity and alterations in the genetic components responsible for controlling dental development[6].Surgical excision is the treatment of choice. Compound and complex odontomas are well encapsulated and easily enucleated from the surrounding bone[7].This case report presents an unusual case of complex odontoma in the anterior mandible of a five-year-old child.

2. Case History

A5 year old male child reported to Department of Plastic surgery with a swelling over the chin for the last 9 months, which was associated with mild fever (on and off).

Child was alright 9 months back, following which the parents of the child noticed a swelling in the chin region, which was insidious in onset and gradually increased to the present size. Swelling was also associated with intermittent pain. No aggravating or relieving factors present. No history of medical condition since birth. No history of surgical intervention or drug allergy.

Clinical examination revealed symmetry of face, lower third of the face was increased in vertical height, solitary swelling present within mandibular anterior region extending from lower lip border till inferior border, laterally restricted to bilateral parasymphysis region. Swelling has diffuse border, skin overlying is taut, no pus or sinus opening present, normal skin colour. On palpation swelling was tender, firm and bony, not fixed to underlying structures. Temperature over the swelling is not raised.

Intraoral examination revealed vestibular obliteration and swelling seen from mandibular right to left canine, swelling extending lingually causing obliteration of lingual vestibule,

firm on palpation, arbitrarily ovoid in shape, no palpation or discoloration seen.

On radiographic examination CBCT showed well defined rounded expansile lytic lesion with organised central calcified centre (2.9x3.5x3.4 cm and peripheral radiolucent rim measuring 3.7x4.3x3.8 cm is noted in the body of mandible probably arising from the root of bilateral central incisors and laterally extending up to the roots of bilateral anterior premolars, causing expansion of the adjacent dental sockets with their mild displacement from sockets; few tooth components are noted within the calcified centre. A provisional diagnosis of odontoma in mandibular anterior region was made and a treatment plan of surgical excision of the lesion was made.

After pre-operative investigations and pre-anaesthetic evaluation general anaesthesia was given and with all aseptic precautions, crestal incision taken from mandibular right second molar to left second molar. Full thickness flap elevated, anterior cortex of mandible opened and lesion exposed. Lesion excised in segments. Smoothening of the rough and irregular cortical bone was done. Tissue was sent for histopathological examination.

Histopathological diagnosis was confirmed as "complex odontoma" comprising of irregularly laid down unorganized dentoid matrix interspersed with fibro cellular stroma consisting of haphazardly arranged loose bundles of collagen fibres with fibroblasts along with numerous small endothelial lined vascular channels.

3. Discussion

In the literature, the incidence of odontomas has been reported to range from 20% to 67% of all odontogenic neoplasm's and thus represent the most common type of odontogenic benign jaws tumors[8]. It has been stated that although odontomas may be diagnosed at any age, it is usually detected before the age of 20 years [8]. They are commonly seen in secondary dentition. Till now only 11 cases of complex odontoma in primary dentition were reported the youngest being 4 years child. Present case reported was also too young and only of 5 years

Studies have shown that compound odontomas are seen more frequently in the anterior maxilla and posterior region of the mandible[9]. In the Present case, odontoma was found in the anterior mandible, which is an uncommon site of occurrence

The diagnosis of compound odontoma can usually be established by conventional radiographic examination. However, this is not usually the case with complex odontomas, because they may be confused with lesions[24], such as cementoid tumours several other bone lesions[6] such as odentofibroma, calcifying odontogenic cyst, calcifying epithelial odontogenic tumour, and possibly adenomatoid odontogenic tumour.

For that reason, CBCT was performed, which also aided surgical planning. The scan was very useful to visualize the precise relationship between the lesion and the third molar[10].

As demonstrated by other studies, early diagnosis of odontomas allows for less complex treatment, guaranteeing a better prognosis[10].

Surgical exposure followed by enucleation of the odontoma is the accepted choice of treatment in order to allow the eruption of the permanent tooth and also to maintain the contour and shape of the lower jaw. Small-sized odontomas do not pose any difficulty while removal; however, the proximity to nearby structures must be kept in mind to prevent unnecessary injury to them. It is further recommended that in the case of an impacted tooth associated with odontoma, it is better to wait for three months for the eruption of the impacted tooth. In case the impacted tooth fails to erupt after three months, it is recommended that the impacted tooth should be surgically exposed with or without orthodontic traction[11].

In the present case, the odontoma was enucleated to allow the eruption of the permanent tooth. Generally, this procedure is done under local anaesthesia, but in the present case, due to apprehensions of the child and his parents, the procedure was done under general anaesthesia. The specimen enucleated was sent for histopathology to rule out ameloblastic fibro odontoma

Odontomas and odontoameloblastomas since these have a great resemblance to common odontomas, especially in the radiographicexamination[12]. A follow-up was recommended to plan for the management of the unerupted tooth.

4. Conclusion

The present case is a rare case report of a complex odontoma which is unusual because of its occurrence in male child of 5 years, and in the anterior mandible along with tenderness intermittent pain. After 6 months of follow up child attained good contour and shape of the mandible. Patient needs to be followed up to see if the permanent dentition is restored, if not dental rehabilitation can be done.

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Figures

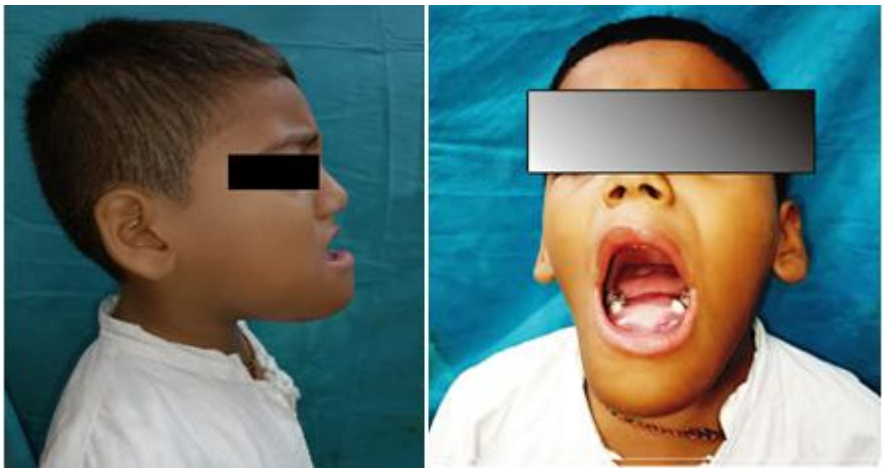

Figure 1: Pre operative clinical images showing swelling, loss of teeth and bulging out of chin

Figure 2: Non contrast CT scan of head and ortho pantomogram showing expansile lytic lesion with organised central calcification and thinned out anterior and posterior cortex of mandible

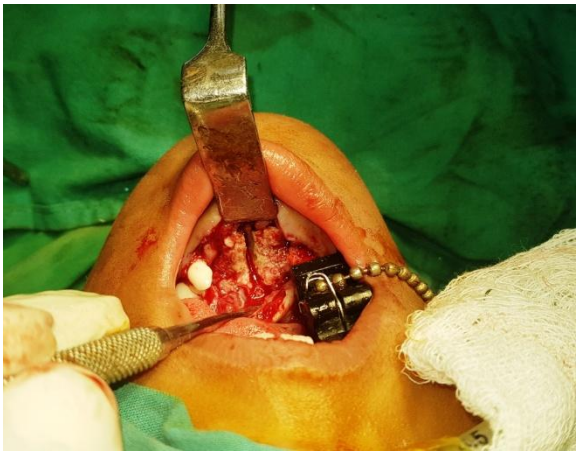

Figure 3: Intra operative images showing enucleated swelling from the mandible

Figure 4: Post operative follow up after 6 months showing good contour of the chin

Figure 5: Post operative ortho pantomogram (OPG)

Author Profile

Dr. Rajat Kapoor, Assistant Professor and Head Of Unit, Department of Plastic Surgery, Grant Government Medical College, Mumbai. Over 15 years of experience in teaching and training Plastic surgeons.

Dr. Mudunuri Ravi Teja, Senior Resident, Department of Plastic Surgery, Grant Government Medical College, Mumbai.

Dr. Purak Misra, Senior Resident, Department of Plastic Surgery, Grant Government Medical College, Mumbai.