



## JUVENILE AGGRESSIVE CEMENTO-OSSIFYING FIBROMA OF MANDIBLE: A RARE CASE REPORT

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<b>Article Info</b> <i>Received 15/06/2015</i> <i>Revised 07/07/2015</i> <i>Accepted 10/07/2015</i> <b>Key words:</b> Osteogenic neoplasm, Cemento- ossifying fibroma, odontogenic.	<b>ABSTRACT</b> Cemento-ossifying fibroma is a rare benign neoplasm of the jaw bone. Although it is more common in adults, presentation in pediatric age group is more aggressive. It commonly presents as a solid mass arising from the mandible and displacing the teeth. Diagnosis is made radiologically and confirmed on histopathology. We describe a case of juvenile aggressive cement-ossifying fibroma with the intention to reflect the importance of this rare disease in the differential diagnosis of jaw tumors in children.
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### INTRODUCTION

Cemento-ossifying fibroma is a rare benign osteogenic neoplasm of the mandible and maxilla. It is rare in pediatric age group, where it appears to be more aggressive. The most common site of occurrence is the tooth bearing areas of jaw bones. Its origin is unclear, however odontogenic or non-odontogenic osseous is considered as tissue of origin. It contains predominantly bone-like and cementum-like material in variable amount [1]. The most common presentation is a solid mass arising from the mandible and displacing the teeth. On CT scan they appear as expansile lesions with soft tissue enhancement. Complete surgical excision is the treatment of choice followed by reconstruction. Recurrence is uncommon in these cases. We present our experience in a case of juvenile aggressive cemento-ossifying fibroma of mandible with complete cure by surgical management and no recurrence.

### Case Report

A 12-year-old boy presented in the department of

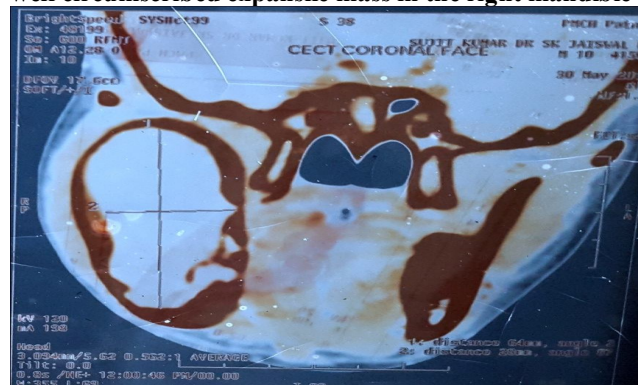
otorhinolaryngology of Indira Gandhi Institute of Medical Sciences, Patna with a gradually progressive swelling of the left cheek since 1 year. The patient had no history of trauma, fever, trismus or any signs of inflammation. On clinical examination there was a non-tender hard mass of about 4x3x2cm in size, which was immobile in the right mandibular region involving body and ramus. CT scan of mandible was advised which showed a large expansile unilocular lesion. (Fig1). The medical history of this patient was insignificant and blood investigations were within normal limit. We planned complete surgical excision of the mass under general anaesthesia through external approach. A mucoperiosteal flap was raised and osteotomy was done. The mass was excised in toto from ipsilateral canine tooth region up to ramus of mandible. The resulting cavity was packed with ribbon gauze soaked in betadine solution for 48 hours, after which the pack was removed. The post-operative period was uneventful. Stitches were removed on 8<sup>th</sup> post-operative day.



Histopathological examination of the tissue was consistent with the diagnosis of cement-ossifying fibroma with no evidence of malignancy (Fig2). On follow-up CT scan was

performed after couple of months that revealed no evidence of residual disease or recurrence (Fig 3).

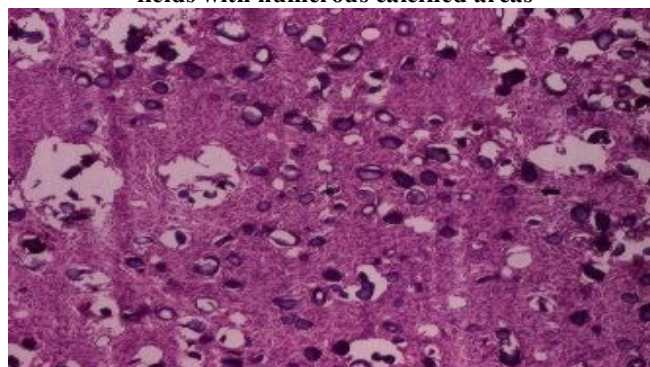
**Fig 1. Contrast enhanced CT scan of mandible showing well circumscribed expansile mass in the right mandible**



**Fig 2. Post operative CT scan showing air filled cavity in the ramus of mandible with good bony remodeling**



**Fig 3. Histopathological photograph (H & E staining) of the lesion under high power (40x) showing highly cellular fields with numerous calcified areas**



## DISCUSSION

Ossifying fibromas are ‘fibro-osseous lesions’ of maxillofacial region. The other major entity in this group is fibrous dysplasia [2]. In these conditions bone is replaced by connective tissue containing variable amounts of calcified similar to bone, cementum or both. In 1971, World Health Organization classification cementum-containing lesions into four types: fibrous dysplasia, ossifying fibroma, cementifying fibroma and cemento-ossifying fibroma [3]. The two common conditions amongst these are very similar except for the abundance of osteocalcin on immunohistochemistry in fibrous dysplasia than ossifying fibroma making the former more similar to normal bones [4]. Cemento-ossifying fibromas are relatively rare variety, most frequently seen in adulthood during the third and fourth decades with predominance amongst females and are very rare in juvenile age group [3]. Seldom, they may be diagnosed in children, where they are more aggressive in nature, hence termed ‘juvenile aggressive cemento-ossifying fibromas’. We diagnosed a 12 year old boy with this disease.

Clinically this condition presents with a hard immobile mass, arising usually from the mandible and less

frequently from the maxilla. The premolar region of the mandible is commonly involved. The condition is slow growing and painless detected incidentally on x-ray of faciomaxillary region. Cosmetic deformity is a common reason to seek clinical help. Histopathologically, these tumours comprises of hypercellular fibrous tissue with the occasional presence of islands of tissue resembling bone and/or cementum distributed throughout and accompanied by dystrophic calcifications with basophilic staining characteristics [5]. This entity has been divided into cementifying fibroma and ossifying fibroma corresponding to osteoid material or cement. However, in cases, where both are present it is termed cemento-ossifying fibroma. They are believed to originate from the periodontal ligament, accounting for the usual vicinity to teeth.

They have variable radiological appearance based on the degree of calcification. They appear as lucent shadow on x-ray. CT scan shows well circumscribed expansile mass with soft tissue attenuation initially but as they mature, they gradually increase in amounts of calcification/ossification. The expansion is usually without cortical breach. Surgical excision is the treatment of choice, which often requires bone grafting or



reconstructive surgery. Being a well defined tumor, surgical removal and curettage is also an effective treatment option [5].

#### CONCLUSION

Although rare and benign, juvenile aggressive

cemento-ossifying fibroma is a diagnosis to be borne in mind while dealing with jaw tumors in pediatric age group. Due to the tendency for recurrence and malignant transformation, they need to be properly investigated and adequately treated surgically.

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