Ossifying Fibroma of the Maxilla: A Case Series

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ABSTRACT

Objective: Ossifying fibroma is a benign bone neoplasm considered as one of the fibro-osseous lesions of the jaws. It has highly cellular, fibrous tissue that contains varying amounts of calcified tissue, resembling bone, cementum, or both. More common in the second to fourth decades of life. It is believed to arise from the periodontal membrane. It has a predilection towards females. Found more in the mandible than maxilla. Radiographically, the lesions are either completely radiolucent, opaque (and surrounded by a radiolucent rim) or mixed, depending on the amount of calcification. Microscopically, ossifying fibroma presents as trabeculae of woven bone and/or lamellar bone and/or spherules of cementoid in a cellular fibrous connective tissue stroma. Treatment is generally by surgical excision ('shelling out'). The initial asymptomatic nature of the lesion and low socio-economic status are possible reasons for the late presentation of the cases. The objective of this study was to present two cases of ossifying fibroma managed surgically under general anaesthesia in our department.
Methods: Surgical excision under general anesthesia
Findings: Each tumor measured more than 10cm by 10cm involving the right maxilla, hard palate, maxillary antrum, zygoma and floor of orbit. The post operative periods were quite challenging but the patients recovered fully with mild disfigurement. The clinical, radiographical, surgical and histological findings are presented.
Conclusion: Ossifying fibromas are comparatively rare benign tumors of maxillofacial region. They could cause major facial disfigurement if left untreated for a long period. However, its typical encapsulated nature enables its complete removal even when massive. Long term follow up is advocated to detect any recurrence.
Keywords: Ossifying fibroma, Maxilla,

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INTRODUCTION

Ossifying fibroma (OF) is one the fibro-osseous neoplasm found mostly in the jaw bones. It is characterized by substitution of normal bone by fibrous tissues and newly formed calcified products such as bone, cementum or both[1].More common between the second to fourth decades of life and the mandible is more commonly affected than the maxilla. Other reported rare sites include the paranasal sinuses[2], the orbital region[3], temporomandibular joint[4], the skull base[5], and occipital bone[6]. Sometimes it occurs in association with other benign lesions like aneurysmal bone cyst[2]. The presenting symptoms are generally swelling of the affected areas. Other specific symptoms are related to the location and pressure effect on the region affected. Juvenile ossifying fibroma (JOF) is a benign fibro-osseous neoplasm characterized by an unpredictable destructive behavior, elevated morbidity, mutilating treatment and high potential for local recurrences[7].It has potential to be aggressive[8,9]. It is considered as an aggressive counterpart of OF. Their aggressiveness added to their high tendency to recur, can provoke real

diagnostic and therapeutic challenges[9].The radiographic features of OF vary depending on the stage of the lesion. It could be either completely radiolucent or mixed, depending on the amount of calcification, or are completely radiopaque and surrounded by a radiolucent rim[10]. Microscopically, OF could present as trabeculae of woven bone and/or lamellar bone and/or spherules of cementoid in a cellular fibrous connective tissue stroma[11].The stroma component could be highly cellular, moderately cellular, prominently vascular or collagenous[11]. Due to considerable similarity of features, definitive diagnosis of these lesions requires an accurate correlation of the clinical, radiographic and histopathological findings[12]. The management of OF is largely by conservative surgical excision for small lesions while extensive excision should be reserved for large symptomatic cases. Long term follows up should be adopted in view of recurrence. We present two cases of giant swellings in the right maxillary region managed surgically in our department. The first case was a 12-year-old male which was confirmed as juvenile ossifying fibroma while the other was a 39-year-old male with an ossifying fibroma. The patients presented with similar symptoms of facial asymmetry, nasal blockage, nasal discharge, mouth breathing, and weight loss.

CASE PRESENTATION:

Case 1: This young 12-year-old male patient presented to the clinic on account of a swelling on the left maxilla of two years duration. Patient claimed he had trauma to his face. He was said to have been slapped several times on his face at school prior to the swelling. Swelling was slow growing with no associated pain but occasional nasal discharges. The patient was earlier taken to some hospitals but due to low socioeconomic status of the parents, they could not afford the cost of treatment until the lesion became very massive.

Examination showed facial asymmetry in a 12-year-old boy (Figure 1) with left ovoid maxillary mass measuring about 19.5cm by 18.2cm and 37.0cm in circumference. It extended from the left preauricular region to right side of the nose region crossing the midline with deviation of the nose to the right and also from the infra orbital area to the cheek region. Figure 1 is anterior posterior view while Figure 2 is lateral view. Intraorally, the mass occupies the left palate and obliterates the left buccal sulcus and the associated teeth were mobile. Needle aspiration yielded a dry tap. CT scan showed an expansive mass occupying the left maxillary antrum and nasal cavities and part of the floor of left orbit (Figure 3 &4) with a surrounding rim of radiopacity. An impression of juvenile ossifying fibroma was made with differentials of fibrous dysplasia, and ameloblastoma Histological evaluation revealed a benign lesion composed of plump irregular trabeculae of bone together with oval basophilic calcific materials. The surroundings connective tissue stroma is fibrocellular with small blood vessels, and a diagnosis of juvenile ossifying fibroma (Figure 5).

Patient was prepared for surgery and the lesion (Figure 6) was 'shelled out' under general anaesthesia, via a transfacial approach. The patient was discharged home 20 days post surgery. He is for further reconstructive surgery (Figure 7). No recurrence two years post operatively.

Case 1:

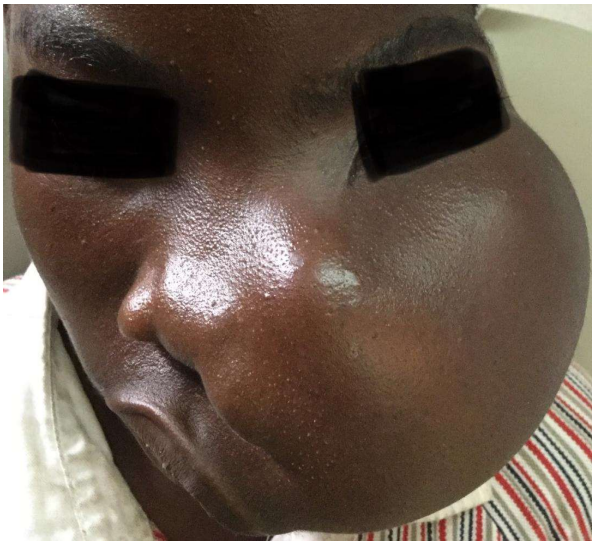
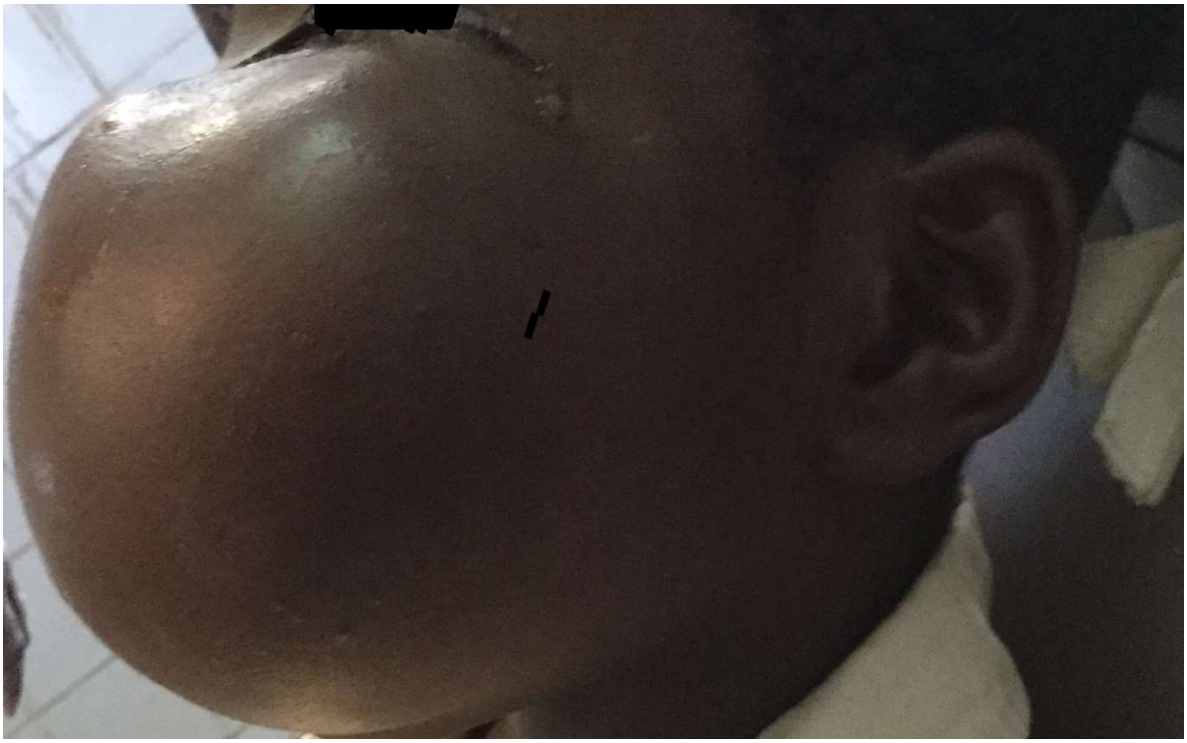


Figure 1



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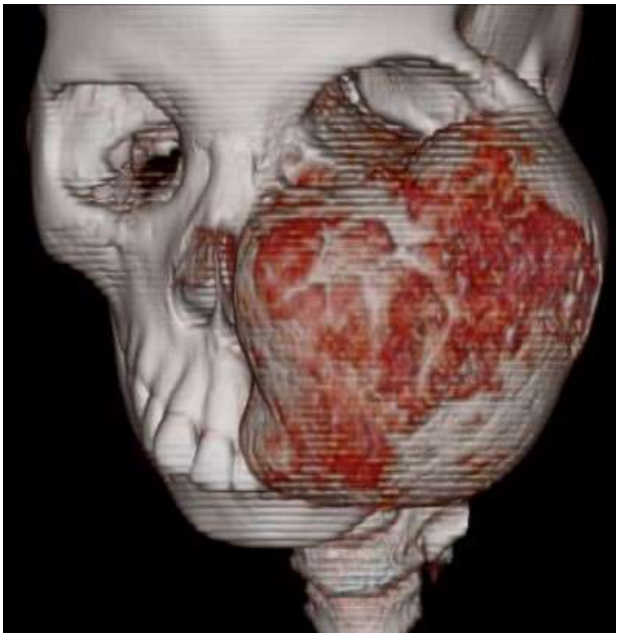

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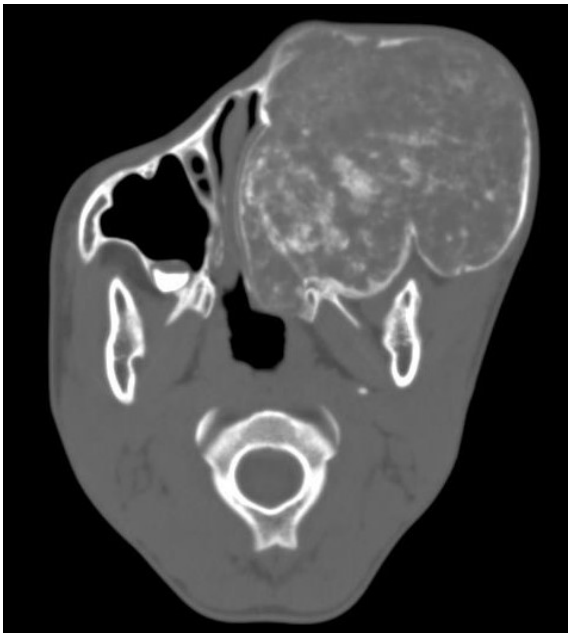

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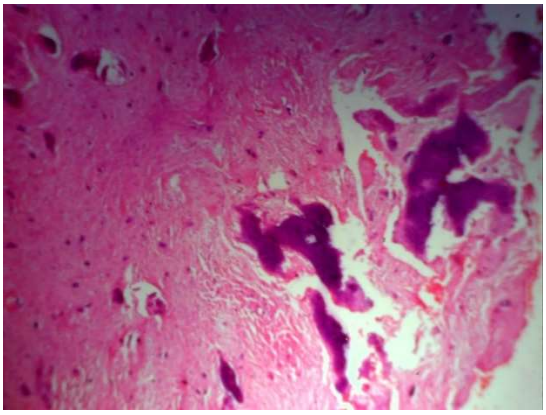

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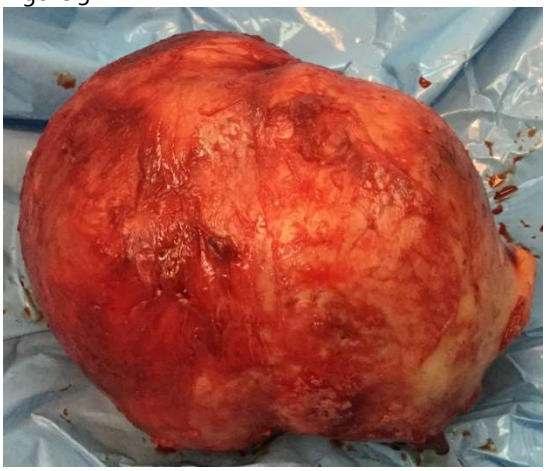

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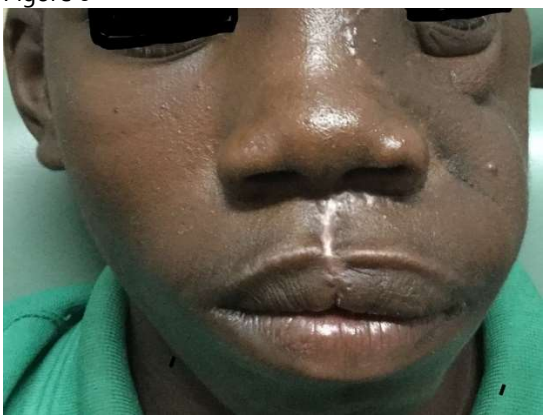


Figure 7

Case 2: This 39-year-old male was referred to our department on account of a swelling on his left maxilla for five years. The swelling started as a very small painless mass adjacent the upper left first premolar. The swelling increased gradually until it became massive with marked facial disfigurement. The swelling was associated with complete blockage of left nostril, partial blockage of right nostril and occasional nasal bleeding. The patient visited various health facilities but could not afford the needed investigations required for management.

On examination, an ill looking man with a marked facial asymmetry from a mass located on the left maxilla was seen (Figure 8). The swelling extended from the infra orbital region to the upper lip area and laterally to the left zygomatic region. It was oval in shape measuring about 10.5cm by 11.0cm. An extension of the mass into the left nostril was visible. The swelling was firm to touch, with some areas of tenderness. The mouth opening was adequate but the oral hygiene was very poor. Full complement of the teeth was present except upper left canine. Associated teeth at the left upper quadrant were displaced. A firm pinkish 6.0cm by 7.0cm mass protruded from the palate downward, occupying about two third of the oral cavity and pressing on the dorsum of the tongue (Figure 9). Radiographic evaluation showed a radiopaque lesion occupying the maxillary sinus and part of the floor of left orbit with medial deviation of the left half of the maxilla. The patient could not afford a CT. An impression of pleomorphic adenoma was made with differentials of ossifying fibroma, fibrous dysplasia and ameloblastoma (Figure 10).

Histological evaluation showed highly cellular, fibrous connective tissue stroma in storiform pattern with a few basophilic calcifications and a diagnosis of ossifying fibroma was made (Figure 11).

Patient was worked up for surgery according to our protocols for maxillofacial patients and the lesion was excised under general anaesthesia. Figure 12 Is the intra operative period and Figure 13 is the excised lesion

The post-operative period was quite challenging but patient recovered and was discharged home after ten days (Figure 14). No recurrence occurred after two years.

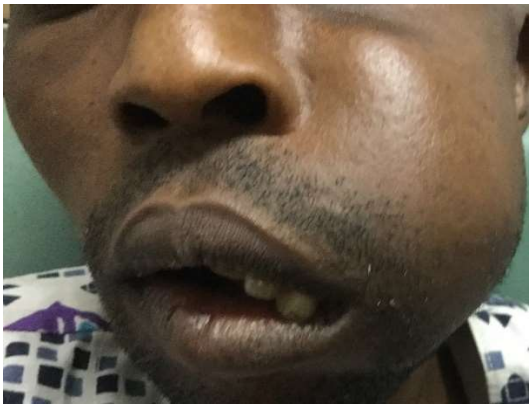


Figure 8

Figure 9

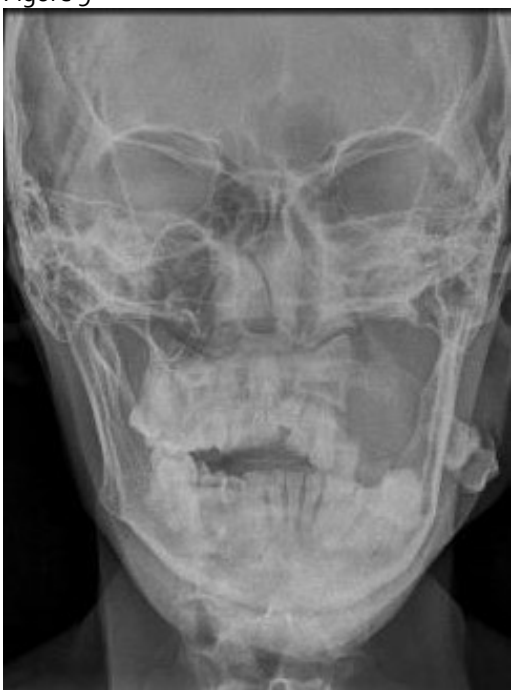
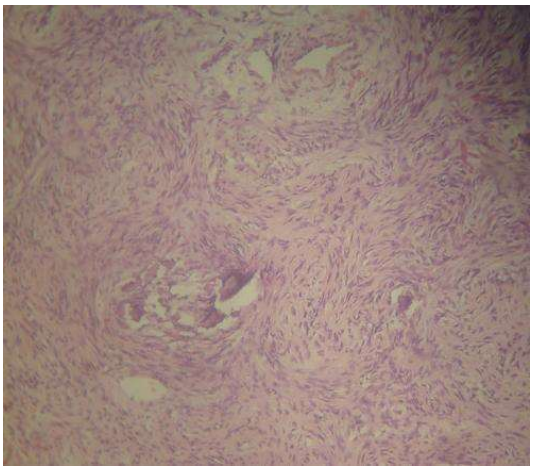


Figure 10



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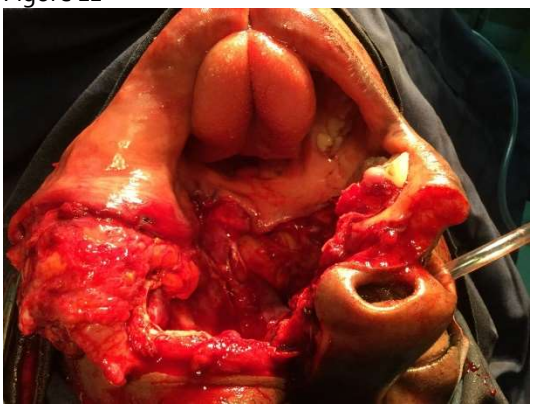

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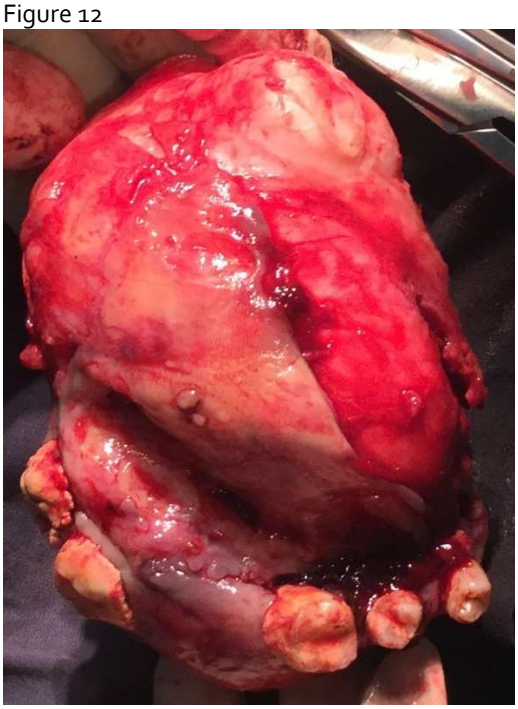

Figure 13

Figure 14

DISCUSSION

The cases presented here showed juvenile ossifying fibroma and an ossifying fibroma

The lesions, though very massive, they shelled out completely from the surrounding tissues during the surgical operation. This is in line with a report which emphasized that ossifying fibroma is a sharply demarcated lesion, the hard tissue of tumor do not fuse with the surrounding bone, except occasionally in limited areas[13] .

The management of ossifying fibroma is essentially surgical excision. In some cases, surgical curretage have been carried out with a low rate of recurrence[14] with the suggestion that resection should be reserved for aggressive and recurrent lesions. Some authors are of the opinion that the management of JOF should be individualized and case specific, depending on the size, location, benign nature and growth behavior of the lesion[15]. In other words, the treatment of JOF must comprise complete surgical resection via an incision determined by local tumor extension[16].Though it is highly recurrent, malignant transformation and metastasis have not been reported[17], which necessitates long term post-operative reviews. In this series, the tumor sizes necessitated an extra oral approach to gain access to the entire extent. An author suggested that the extent of the lesion, relapse status, growth rate, and family choice should guide the surgical plan[18] None of the cases in this series presented for management until the tumors had become very massive. The main reasons included low socioeconomic status of the patient and relations, ignorance of management facilities and quest for nonmedical measures of treatment. In our environment, visiting the hospital is still being regarded as the last option especially among patients with lower level of education. Non medical alternatives are initially consulted before the medical option. Moreover, low financial capacity limit patients' drive to visit the hospital during a health challenge as patients are largely responsible for paying their medical bills. Higher economic empowerment, increase level of education and health enlightenment will all promote early seeking of medical attention during a health challenge.

CONCLUSION

Ossifying fibromas are comparatively rare benign tumors of maxillofacial region. They could cause major facial disfigurement if left untreated for a long period. However, its typical encapsulated nature enables its complete removal even when massive. Long term follow up is advocated in order to detect any recurrence. The need for early presentation for management and economic empowerment is emphasized to avoid the need for extensive surgeries and its attendant complications.

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