Original research article

BONY TUMOURS OF MAXILLOFACIAL REGION : RETROSPECTIVE STUDY OF CLINICO-PATHOLOGICAL PROFILE AND THEIR MANAGEMENT

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Abstract

Introduction: Maxillo-facial tumours are a group of heterogenous diseases that ranges from hamartomas or non-neoplastic tissue proliferations to benign neoplastic to malignant tumors with metastatic potentials. The aim of the present study is to evaluate the clinico-pathological profile and management of primary lesions of facio-maxillary region.

Material and Methods: Retrospective data of bony tumors of maxilla-facial region was retrieved for 2 years from March 2015 to April 2017. The data included the gender, age, diagnosis based on radiology, histopathology and the site of origin.

Results: A total of 18 patients were diagnosed as a bony tumour of maxillofacial region and treated surgically. Fibrous dysplasia, Odontogenic cyst and Ameloblastoma were the most common lesions.

Conclusion: Bony tumours of Maxillofacical region though uncommon and mostly benign, pose a great challenge to preserve the functions and cosmesis.

Keywords: Bony tumors, Maxilla, Mandible

INTRODUCTION

Maxillofacial tumors are a group of heterogeneous diseases that range from hamartomas or non-neoplastic tissue proliferations to benign neoplastic to malignant tumors with metastatic potentials. They may derive from epithelial, ectomesenchymal and/or mesenchymal elements of tooth-forming apparatus. Odontogenic tumors are rare, comprising of 2-3 % of all oral and maxillofacial biopsies sent to pathology department. A variety of lesions involve both maxilla and mandible.[1-3]

The presenting features, symptomatology and advanced imaging techniques help to reach a presumptive diagnosis but histopathological examination remains the mainstay of definitive diagnosis. Careful histological workup is essential for a correct diagnosis and timely intervention of many of these lesions. The aim of the present study is to review the clinico-pathological profile of primary lesions of maxillofacial region.

MATERIALS AND METHODS

The study was conducted in Department of ENT & Head and Neck Surgery at Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly. Retrospective data of bony tumors of maxilla-facial region was retrieved for 2 years from March 2015 to April 2017. Patients with incomplete medical records, multifocal involvement, and history of previous surgery or radiotherapy in Head & Neck region were excluded from the study. The data included the gender, age, diagnosis based on radiology, histopathology and the site of origin.

RESULTS

A total of 18 patients of facio-maxillary lesions were diagnosed and treated during the 2 year period from March 2015 to April 2017 in the department of ENT, Head and Neck Surgery.

The male: female ratio was 2.6:1 (13 males, 5 females). Mean age was 25.05 years (Range: 12 to 67 years) with highest incidence in 2nd decade of life.

Maxilla was more common site of origin than mandible (61% vs 39%) (Table-1).

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Table-1: Site wise distribution of maxilla-facial tumors

Type of Lesion	Right	Left	Total
Mandible	3 (16.6%)	4 (22.2%)	**7 (39%)**
Maxilla	5 (27.7%)	6 (33.3%)	**11 (61%)**
Total	**8 (44.4%)**	**10 (55.5%)**	**18**

The cohort of patients had various diagnosis among which fibro-dysplasia, Odontogenic Cyst, Ameloblastoma were common (Table-2).

Table-2: Bony lesions of maxilla-facial region

Diagnosis	No. of Cases
Fibrous Dysplasia	4 (22.2%)
Odontogenic cyst	4 (22.2%)
Ameloblastoma	4 (22.2%)
Oseteochondroblastoma Mandible	1 (5.5%)
Chondrosarcoma Mandible	1 (5.5%)
Ossifying Fibroma	1 (5.5%)
Epulis	1 (5.5%)
Aneurysmal Bone Cyst	1 (5.5%)
Myxoma	1 (5.5%)
Total	**18**

CT scan is the investigation of choice for study of lesion, analysis of its extension and surgical planning. All patients underwent tailor made surgical approach in view of aggressiveness of the lesion, age of the patient and nature of the surrounding functional structures. Final diagnosis was made by histo pathological examination.

DISCUSSION

Fibrous dysplasia was first described by Von Recklinghausen in 1891 in a patient with skeletal deformities and coined the term "osteitis fibrosa generalisata". It was renamed "fibrous dysplasia" in 1938 by Lichtenstein. Perhaps the most accurate term to describe fibrous dysplasia is "fibro-osseous dysplasia" or "fibrous osteodysplasia".[4] Reed had defined the condition as an "arrest of bone maturation in woven bone with ossification resulting from metaplasia of a nonspecific fibro-osseous type".[5] Schlumberger, first reported single bone involvement by the disease process and described it as "monostotic fibrous dysplasia".[6] In studies by Keskin and Tabrizi, 70-80% patients were seen in second and third decade of life.[7,8] All four patients in the present study were monostotic type with mean age of 21.2 years. Surgery remains the mainstay therapy for this disease and was directed at correcting or preventing functional deficits and achieving normal facial aesthetics.[9] In the present study the 4 patients of fibrous dysplasia underwent remodeling of the bone. None of them has reported recurrence of swelling in a median follow-up period of one year.

Cystic lesions of the jaws can either be Odentogenic or non-Odentogenic, developmental or inflammatory in origin. Forty four percent of the cysts were developmental and 48% were inflammatory in origin.[10] Surgery is commonly recommended for dentigerous cysts because they often block eruption of teeth, become large, displace teeth, destroy bone, encroach on vital structures and occasionally even lead to pathologic fracture. This treatment has however, classically consisted of cyst enucleation and extraction of the tooth or teeth embedded in it, or impacted by it.[11] in present study four patients of Odentogenic cysts (Figure-1), who were treated with surgical enucleation along with extraction of involved tooth.

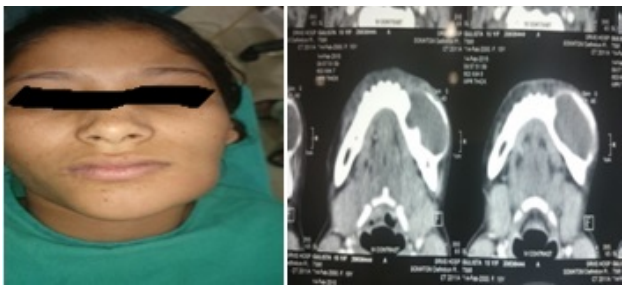

Fig.-1: Odontogenic Cyst

Ameloblastoma is a benign Odentogenic tumor believed to originate from sources that include residual epithelium from tooth germ; epithelium of Odentogenic cysts; stratified squamous epithelium; and epithelium of the enamel organ.[12] As stated by Robinson, Ameloblastoma is usually unicentric, nonfunctional, intermittent in growth, anatomically benign and clinically persistent.[13] According to Pindborg, it is a true neoplasm of enamel organ type of tissue which does not undergo differentiation to the point of enamel formation.[14] Four cases of Ameloblastoma were diagnosed, all arising from mandible (Figure-2) and were treated surgically.

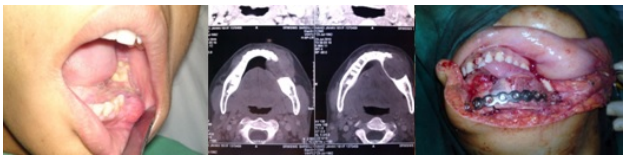

Fig.-2: Ameloblastoma

Conventional radiographic techniques do not allow diagnosis and differentiation between benign fibro-osseous, inflammatory and malignant tumors. Chondrosarcoma of the mandible mostly present as a painless swelling or may appear as mass of long duration with pain, paresthesia, trismus, and loosening of the teeth, which points toward the progression of the disease. The prognosis of chondrosarcomas depends on the size, location, grade, and surgical resectability of the tumors as chondrosarcomas show a wide variation in time of

recurrence and metastasis.[2] The 5-year survival rate for chondrosarcomas of the jaws and facial bones has been reported to be 67.6%.[1] In the present study, a patient presented with a history of right mandibular swelling (Figure-3) from 1 year and underwent right segmental mandibulectomy with reconstruction followed by radiotherapy.

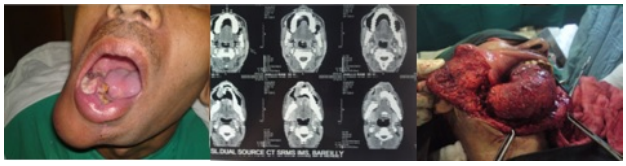

Fig.-3: Chondrosarcoma Mandible

Chondroblastoma arising in craniofacial bones is rare and it accounts for 6.4% all Chondroblastoma. Approximately 60% of all Chondroblastoma occur in long bones mostly in the distal epiphysis of the femur.[15] Majority of craniofacial Chondroblastoma involve the temporal bone. The next common site is mandibular condyle. A few isolated cases have been reported in other bones of the skull.[16] The patient presented with painless, progressive left mandibular swelling for 3 year and underwent left segmental mandibulectomy (Figure-4) with reconstruction using micro vascular free fibular graft.

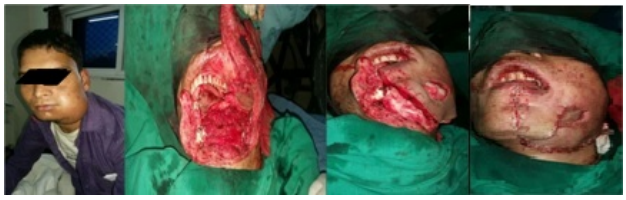

Fig.-4: Oseteochondroblastoma Mandible

CONCLUSION

CT scan is the investigation of choice for study of lesion, analysis of its extension and surgical planning. There are cosmetic and functional implications in treatment planning of facio-maxillary lesions. The challenge to proper management lies in balancing between conservative and radical approach to reduce morbidity and recurrence. A tailored approach should be undertaken in view of aggressiveness of the lesion, age of the patient and nature of involvement of surrounding functional structures.

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