Original Article

Maxillofacial Surgery

Analysis of Jaw Lesions at Liaquat University Hospital Hyderabad

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ABSTRACT

Objective: To analyze the histological type, gender and site distribution of different jaw lesions at liaquat university hospital Hyderabad.

Study Design: A Retrospective Study

Place and Duration of Study: This study was conducted at the Liaquat University Hospital from January 2011 to January 2013

Materials and Methods: 126 patients having different jaw lesions treated at Liaquat University Hospital was carried out. Data was analyzed by SPSS Version 16.

Results: In this study the most common lesion were odontogenic cysts 67 cases, followed by 20 cases of odontogenic tumors, 14 cases of fibro-osseous lesions, 12 cases of giant cell lesions, 6 infectious lesions and 5 non-odontogenic cysts, 2 cases of non-odontogenic tumor. 83 patients were males and 43 were females. The mandible was involved in 82 cases and the maxilla in 44 cases.

Conclusion: Study shows that odontogenic cysts were found to be the common jaw lesions. Males were predominantly affected and mandible was more commonly involved than maxilla.

Key Words: Jaw lesion, cysts, tumors, fibro-osseous lesions.

INTRODUCTION

Jaws both maxilla and mandible are the most frequent sites for epithelial cysts and tumors to develop due to the close relationship with teeth and odontogenesis[1]. Odontogenic cysts are defined as those cysts that arise from odontogenic epithelium and occur in the tooth-bearing regions of the jaws[2]. It is usually considered that proliferation and/or degeneration of this epithelium leads to odontogenic cyst development[2]. Cystic jaw lesions may be epithelial or non-epithelial, odontogenic or non-odontogenic, developmental, or inflammatory in origin and the most commonly occurring Odontogenic cysts are Radicular, Dentigerous and Odontogenic Keratocysts repectively[2,3,4]. Non-odontogenic cysts are epithelial lined pathological cavities in which the source of epithelium is other than that of the tooth forming organ and usually derived from the remnants of tissues involved in face development[5,6].

Odontogenic tumors are derived from epithelial, ectomesenchymal and/or mesenchymal elements that are or have been a part of the tooth-forming apparatus[7,8]. The majority of these tumors occur intraosseously within the maxillofacial skeleton, while extraosseous odontogenic tumors occur nearly always in the tooth-bearing mucosa[9]. The non odontogenic tumors which comprise of tumors originating from within jaw bones and arise from tissue other than the tooth-forming organ.

Fibro-osseous lesions are a diverse group of processes that are characterized by replacement of normal bone by fibrous tissue containing a newly formed mineralized product. Commonly included among the fibro-osseous lesions of the jaws are fibrous dysplasia, cemento osseous dysplasia, and ossifying fibroma[10,11].

Another category which involve the oral cavity are the giant cell lesions, which are non-neoplastic, painless swellings containing fibrous, vascular and other connective tissue stroma dispersed with multinucleated giant cells. They are of the aggressive and non-aggressive types; with the later being more common, showing few symptoms [4,12].

In last there are certain cases of inflammatory lesions (infections) reported as well. The common inflammatory lesions of the oral mucosa are caused by viruses, bacteria and fungi [5,13].

MATERIALS AND METHODS

The objective of the study was to analyze the histological type, gender and site distribution of different jaw lesions at liaquat university hospital Hyderabad. In this study 126 patients having different jaw lesions were treated at oral and maxillofacial surgery department of liaquat university hospital Hyderabad between Jan 2011- Jan 2013. All the lesions of jaw bone were included in the study like odontogenic cysts, odontogenic tumors, non odontogenic tumors, non odontogenic cysts, fibro-osseous lesions, giant cell lesions and infective lesions. Lesions of musculature and salivary glands were excluded from the study. The cases were retrieved from record files, studied and analyzed as to their

histological type, anatomical site, and gender of the patient and analyzed by using SPSS version 16.

RESULTS

In this study 126 patients were treated with jaw lesions according to their histological type. In this study odontogenic cysts were found to be the most commonest lesions followed by odontogenic tumors, fibro-osseous lesions, giant cell lesions, infective lesions, non odontogenic cysts and non odontogenic tumors. The relative frequency of different jaw lesions according to their histological type is shown in Table 1. Gender distribution is shown in Table 2. Involvement of site is shown in Table 3.

Table No.1: Histologic type of different jaw lesions

Odontogenic cysts (68)	Odontogenic tumors (20)	Fibro-osseous lesions (14)	Giant cell lesions (12)	Non odontogenic cyts (05)	Infective lesions (06)	Non odontogenic tumors (01)
Radicular (39) Dentigerous (19) Keratocyst (10)	Ameloblastoma (15) Ameloblastic fibroma (2) Odontogenic myxoma (2) Odontoma (1)	Ossifying firoma (8) Fibrous dysplasia (5) Cementosseous dysplasia (1)	Central	Nasopalatine cyst(3) Nasolabial cyst (2)	Osteomyelitis (4) Actinomycosis (2)	B cell lymphoma (1)

Table No.2: Gender distribution of different jaw lesions

Histological type	Male	Female
Odontogenic cysts	47	21
Odontogenic tumors	13	07
Fibro-osseous lesions	06	08
Giant cell lesions	06	06
Non odontogenic cysts	04	01
Infective lesions	05	01
Non odontogenic tumors	00	01

Table No.3: Site involvement

Histological type	Maxilla	Mandible
Odontogenic cysts	24	44
Odontogenic tumors	03	17
Fibro-osseous lesions	05	09
Giant cell lesions	06	06
Non odontogenic cysts	05	00
Infective lesions	01	05
Non odontogenic tumors	00	01

DISCUSSION

Cystic lesions of the jaws can be either odontogenic or non-odontogenic, developmental, or inflammatory in origin. In the present study 68 of the cysts were odontogenic origin .follwed by radicular, dentigerious, and kertocyst..[14] .in this study male predominance of cystic lesion. This finding is in similer to other studies Radicular cyst arises from the epithelial residues in the periodontal ligament as a result of inflammation that follows necrosis of the dental pulp. Recently erupted permanent teeth, Clinical presentation of infection at the cyst area is usually associated with acute or chronic inflammation at the cyst wall.[15] In such cases the epithelial lining of the cyst wall may be destroyed, regardless of cyst origin, leaving the cyst wall with granulation tissue. The greater frequency in adult males may be because they are more likely to neglect their teeth or they are more likely to sustain trauma to their teeth, compared to females, all of which may be the etiology for cyst formation [16].

In this study which comprised of odontogenic cysts, among them the most common were radicular cysts followed by dentigerous cyst and keratocyst. These findings are similar to international study by koseoglu BG in 2004[17] which is also supported by another international study Avelar RL et al[18] in 2009.

Out of sixty eight cases of odontogenic cysts in this study 47 were males and 21 were females. This data shows more of a male predominance than females. Similar results are seen in ogunlewe MO et al study in 1996[19].

In our study over all occurrence of the cysts predominates in the mandible (64.7%) which is similar to study of koseoglu BG in 2004.

Present study reported 5 cases of Non-odontogenic cysts, two cases of Nasolabial cyst and three cases of Nasopalatine cyst. Interneational study reveals that Nasopalatine cysts are the most common Nonodontogenic cysts which also supports our study[20].

Our study includes twenty cases of odontogenic tumors, having ameloblastoma as the commonest tumor, followed by ameloblastic fibroma and odontogenic myxoma and odontoma. Which is dissimilar to

international study by santos J in 2006[21]. Fibro-osseous lesions of the jaws show considerable microscopic overlap and include fibrous dysplasia, ossifying fibroma, Periapical cement-osseous dysplasia. Fourteen cases of fibro-osseous lesion were reported in this study. This is similar to Bahl R et al study in Indian Punjab 2012[22].

The predominant giant cell lesions of the oral cavity include peripheral and central giant cell granuloma. Twelve cases of central giant cell lesions were diagnosed of which 6 cases were reported in females and 6 in males, which is dissimilar to study conducted by Mohajerani H et al in 2009 which shows female predominance[23].

Another category of lesions studied were non odontogenic tumors, only one case of B cell lymphoma was reported. Making a conclusion of relative predominance is not possible with such less data.

Last group to be included in the study were the inflammatory lesions. Present study reported 6 cases of infectious lesions affecting the jaw bones. Out of these 4 were cases of chronic osteomyelitis and 2 were of Actinomycosis. Five cases were affecting males and 1 affected female. 5 out of 6 cases were involving mandible as compare to maxilla. The cases of osteomyelitis were sub divided into various classes like 2 were chronic suppurative and 2 were chronic sclerotic osteimyelitis. This is similar to international study carried out by Yeoh SC et al in 2005 that supports our data[24].

CONCLUSION

Lesions of the jaws are very commonly seen by the oral maxillofacial surgeon and yet there are still many aspects which remain obscure or controversial. In this study odontogenic cysts were found to be the most common among the different jaw lesions. Mandible was more commonly involved than maxilla. Jaw lesions were more common among male patients than female patients.

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