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ORIGINAL ARTICLE

Prevalence of Jaw Tumors in Elderly Indian Population: A Retrospective Histopathological Analysis of 29 Cases

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ABSTRACT

Introduction: Central tumors of the jaws can manifest in various ways ranging from benign tumors to life-threatening malignancies. Although jaw tumors have been described in the general population, there is a paucity of information available regarding prevalence, distribution, and biological behavior of central jaw tumors in elderly population.

Aim: To study the prevalence of jaw tumors among elderly Indian population of age 60 and above.

Materials and methods: All consecutive patients (≥60 years) diagnosed histopathologically as having a central jaw tumor from 2011 to 2014 were included in the study. All the cases were reviewed for age, gender, location, histopathological features, treatment, and prognosis. The accumulated data was analyzed and grouped into different categories to chart the tendencies.

Results: A total of 29 patients were included in the study. The mean age was 70.4 years (60–89 years). Male to female ratio was 1.9:1. The ratio between mandible and maxilla was 3.1:1. Histopathologically, there was a predominance of nonodontogenic lesions, and the ratio between nonodontogenic and odontogenic tumors was 2.4:1. There were 16 benign and 13 malignant tumors. Surgical excision was the treatment of choice for most of the benign tumors. Patients with malignant tumors are undergoing chemotherapy.

Conclusion: This is the first Indian study addressing prevalence of the jaw tumors in the elderly age group. It is hoped that this study with respect to the elderly will be helpful to chart the manifestation of jaw tumors in this section of Indian population.

Keywords: Elderly patients, Geriatrics, Indian population, Jaw tumors.

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INTRODUCTION

Tumors of the jaws are broadly classified as odontogenic and nonodontogenic.[1] Jaw tumors occurring in geriatric populations are infrequent and have a relatively poor prognosis.[2] Previous epidemiologic studies have documented very little information about the prevalence of jaw tumors in elderly Indian population, although these tumors represent various entities from benign tumors to life-threatening malignancies.

The elderly people deserve as much care and importance as other sections of society, but unfortunately studies on jaw tumors among the geriatric population in India have not been documented. The paucity of information regarding jaw tumors in this age group prompted us to undertake an institutional study of jaw tumors in elderly patients to give us an understanding of their manifestation and guide us as to their management.[3]

MATERIALS AND METHODS

All patients equal to and above the age of 60 years who were histopathologically diagnosed as having an intraosseous jaw tumor were included. The cases were reviewed for age, gender, site, histological characteristics, biological behavior, and treatment undertaken. The clinical data was retrieved from case notes. Histopathological analysis was done by review of hematoxylin and eosin stained slides of the samples by a second oral pathologist for the confirmation of diagnosis. The accumulated data was analyzed and grouped into different categories to chart the prevalence.

RESULTS

The study sample comprised a total of 29 geriatric jaw tumors reported in our institution between 2011 and 2014. Gender distribution was 19 males and 10 females (Table 1). The mean age of the patient was 70.4 years in the range of 60 to 89 years. The site of occurrence was found to be more common in mandible (Table 2). Histopathological examination revealed 9 odontogenic and 20 nonodontogenic tumors (Table 3). There were altogether 16 benign

Table 1: Gender distribution

Gender	*No. of patients*	*Percentage*
Male	19	65.5
Female	10	34.4
Total	29	

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Table 2: Distribution of odontogenic and nonodontogenic tumors

Odontogenic tumors	*Cases*	*Nonodontogenic tumors*	*Cases*
Ameloblastoma	3	CGCG	4
KCOT	2	Ossifying fibroma	2
PIOC	3	Multiple myeloma	5
Odontogenic myxoma	1	Lymphoma	3
		Chondroma	1
		Osteoma	1
		Osteosarcoma	2
		Osteoblastoma	1

Table 4: Distribution of benign and malignant tumors

Biological behavior	*No. of cases*	*Percentage*
Benign	16	55.1
Malignant	13	44.8
Total	29	

and 13 malignant tumors (Table 4). In malignant tumors multiple myeloma was found to be the most common malignancy (Graph 1). Nine malignant tumors were found in males and four in females (Graph 2).

Histopathological Analysis

Ameloblastomas are benign tumors whose importance lies in their potential to grow into enormous size with resulting bone deformity.[4] Histopathological examination of odontogenic tumors revealed two cases of ameloblastoma which showed acanthomatous subtype, while one case showed granular cell pattern. Keratocystic odontogenic tumor (KCOT) cases showed a typical corrugated parakeratinized epithelium with palisaded basal layer. The cases of primary intraosseous odontogenic carcinoma (PIOC) showed highly dysplastic epithelial cells invading the connective tissue stroma with areas of keratin pearl formation. The nonodontogenic tumors were identified by histopathological examination. There were multiple

Table 3: Distribution of jaws

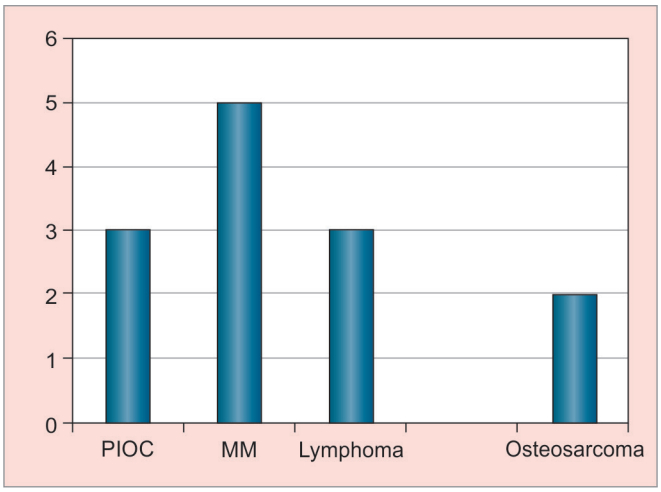
Jaw	*No. of patients*	*Percentage*
Maxilla	7	24.1
Mandible	22	75.8
Total	29	

myelomas with sheets of densely packed cells resembling plasma cells with eccentrically placed nucleus exhibiting chromatin clumping. Central giant cell granulomas (CGCG) showed numerous giant cells in a fibrovascular tissue stroma. Ossifying fibroma showed areas of mature bone in a dense fibrocellular stroma. Chondroma showed a lobulated configuration of hyaline cartilage with chondrocytes within well-formed lacunae covered by periosteum. Primary lymphoma of bone showed sheets of atypical lymphoid cells. Osteoblastoma manifested with areas of bone formation and numerous bizarre osteoclast-like giant cells. The case of osteoma also showed areas of compact bone formation.

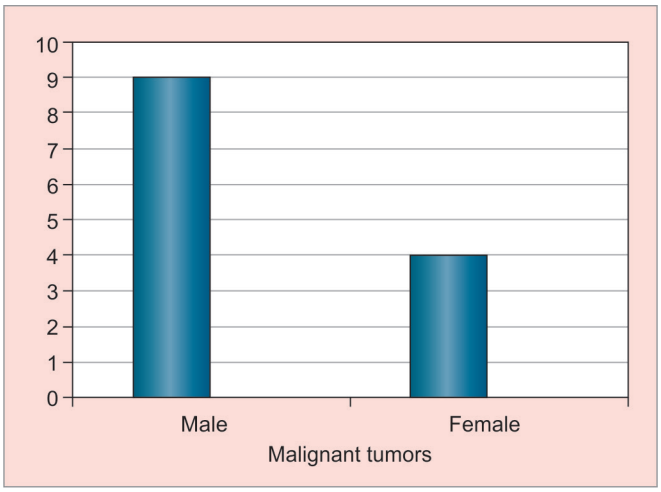
DISCUSSION

A total of 29 patients with different jaw tumors presented in our institute between the years 2011 and 2014. The aim of the present study was to analyze these lesions retrospectively based on the clinical and histopathological features. An exhaustive review of the literature revealed very few studies of jaw tumors in elderly patients. It has been observed that most of studies were done in general population samples. No studies were found to be performed among elderly patients. Hence, this limitation prompted us to undertake this study.

Odontogenic tumors are usually uncommon in the elderly age group.[5] The present study revealed nine cases of odontogenic tumors; PIOC (n = 3) and ameloblastoma (n = 3) were found to be commonest tumor of odontogenic origin, followed by KCOT (n = 2) and odontogenic



Graph 1: Distribution of malignant tumors



Graph 2: Distribution of malignant tumors in genders

myxoma (n = 2). This is contrary to the study of Bassey et al[6] who found no odontogenic tumor in the age group of 61 to 70 years in Nigeria. In nonodontogenic tumors the commonest tumor was found to be multiple myeloma (n = 5) followed by CGCG (n = 4), lymphoma (n = 3), ossifying fibroma (n = 2), osteosarcoma (n = 2), chondroma (n = 1), osteoblastoma (n = 1), and osteoma (n = 1), contrary to the study of Mullapudi et al[7] who found central giant cell lesions with a younger age presentation in India. In the present study two cases of osteosarcoma were observed, one in mandible and one in the maxilla which supports the data published by van den Berg et al[8] that revealed 27 cases of osteosarcomas in an elderly age group (60–99 years) with almost equal frequency in maxilla and mandible in Netherland.

CONCLUSION

The epidemiology of jaw tumors in elderly patients differs from that of jaw tumors of general populations in other countries. This fact is not known with regard to the Indian population as there do not seem to be many studies in this regard. This is the first Indian study addressing prevalence of the jaw tumors in the elderly age group in India. It is hoped that this study with respect to the elderly will be helpful to chart the manifestation of jaw tumors in this population group of this part of the world.

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