Ameloblastoma in Tanzania: a retrospective analysis of histological records

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Summary

World-wide, ameloblastoma have been discussed in relation and modalities of treatment. In Tanzania, cases of ameloblastoma are seen but no data is available to quantify the magnitude of the disease within the community. The present study aims at describing the occurrence, sex, age and regional distribution of ameloblastoma cases seem from June 1989 to June 1997 in Tanzania. The pathology records in the Department of Oral Surgery and Pathology, Faculty of Dentistry, Muhimbili University College of Health Sciences, were examined for all cases of oral and maxillofacial tumours occuring over that period. The ameloblastoma cases were analysed for age, sex, anatomical distribution, clinical features, regional distribution and treatment methods. Only cases confirmed by tissue biopsy were included in the study.

Out of 384 oral and maxillofacial tumours, 18.2% (70) were ameloblastoma. Males (58.6%) were affected more than females (41.4%). Most of the ameloblastomas were found in the mandible (97.1%) in the molar/angle regions (57.1%) and 20% were in the incisors/canine areas and occurred in the third and fourth decades of life. Fourteen regions out of twenty regions in Tanzania recorded some cases of ameloblastoma, but majority of the cases were from Dar es Salaam (29.6%), Mbeya (18.5%), and Kilimanjaro regions (9.3%). Ameloblastoma in this study occurs predominately in the molar/angle and incisors/canine areas of the mandible with men being more affected than women. Radical excision entailing partial/total mandibulectomy or maxillectomy gave better results.

Introduction

Ameloblastoma is a predominantly benign intra-osseous odontogenic tumour. Mucosal involvement is a secondary phenomenon, occuring after long period of intra-osseons growth and bone expansion (1). World-wide ameloblastomas have been discussed regarding clinical presentation, age at presentation, sex distribution and modalities of treatment. In Nigeria, Olaitan, et al reviewed 315 cases of ameloblastoma seen over a 20 years period and Odukoyo analysed 289 cases of ameloblastoma. Both studies found that males were more affected by ameloblastoma as compared to females and the peak presentation of the disease occurred in the third and fourth decades of life (2,3). Other studies done by Reichart, et al and Chidzonga, et al reported different sex distirbution of ameloblastoma but same peak of presentation (4,5,6). A review of 1723 orofacial biopsies done in the same year found that ameloblastoma comprises 79.1% of all odontogenic lesions. In South Africa, Shear, et al (7) observed that the incidence of ameloblastoma is much higher in blacks, particulary men, than among whites.

In Tanzania, cases of ameloblastoma are seen in clinics but no documentation available to quantify the magnitude of the disease within the community eversince 1969 when Slavin, et al (8) studied emeloblastoma cases in Tanzania and Uganda. Therefore, the aim of the study was to describe the occurrence, sex, age at presentation, clinical features, anatomical distribution, regional distribution and treatment methods of ameloblastoma cases seen from June 1989 to June 1997 in Tanzania.

Material and methods

Biopsy records of all histologically diagnosed cases of oral tumours during the period June 1989 to June 1998 were retrieved from the files of the Department of Oral Surgery and Pathology, Faculty of Dentistry, Muhimbili University College of Health Sciences in Dar es Salaam, Tanzanian main teaching and referral hospital. It is also the only hospital where oral and maxillofacial surgery services are available. Of all the 384 cases of oral and maxillofacial tumour cases, 70 (18.2%) were diagnosed ameloblastoma. About 30% of the patients came from Dar es Salaam, and 19% came from Mbeya. The rest came from various regions of Tanzania mainland, with a percentage of between 1.5 to 9 per region. The idenified 70 cases of ameloblastoma were detailed analysed according to frequency of occurrence, age and sex of the patient at presentation, regional distribution, anatomical distribution, clinical features and treatment methods.

Results

Table (1) shows the distribution of histologically diagnosed oral facial tumours in the Department of Oral Surgery and Pathology between the year 1989 – 1997. Squamous cell carcinoma accounted for 22.1% of all diagnosed oral facial tumours. Burkitt's lymphoma accounted for 20.1% while ameloblastoma

was the third most diagnosed tumour and accounted for 18.2% of all oral tumours diagnosed.

Table (2) shows the distribution of patients histologically diagnosed as having ameloblastoma by age and sex. The ages of the patients ranged from 11-70 years. Males were affected in (58.6%) and females in (41.4%). Most of the ameloblastoma were found to occur in the third and fourth decades of life (57.1%) and none was found to occur below the age of eleven.

Table (3) shows the anatomical distribution of ameloblastoma. Out of 70 cases of ameloblastoma (2.9%) were found to occur in maxilla in the premolar/molar area. In the mandible (57.1%) were found in the molar/angle areas, (20%) incisors/canine areas and (7.1%) in the ramus/temporamandibular joint areas. The duration of clinical symptoms had a wide variation ranging from one to five year. The most common symptoms was swelling of the face and jaws leading to disfigurement.

Discussion

World-wide, ameloblastoma has been discussed with regard to clinical presentation, age at presentation, sex distribution and modalities of treatment. Despite socio-economic and geographical differences, this study parallels other investigations published. The findings from this study that most of the ameloblastoma cases were found to occur in the third and fourth decades of life parallels several other studies (2,3,4,5,6). The reasons why most of the ameloblastomas occur in those decades could be that ameloblastoms are predominantly benign, intra-osseous odontogenic tumours and mucosal involvement occurs later after a long period of intra-osseous growth and bone expansion. The absence of the disease in the age below eleven years could be explained by the same reasons but also could be due to misdiagnosis at the other centres because of inadequate experience in reading and interpreting radiographs, hence early diffuse lesions may not be notices.

In this study, males (58.6%) were more affected by the disease compared to women (41.4%). This investigation concurred with other investigations done in Nigeria but contrast those of Zimbabwe and Western countries which have reported men and women being equally affected. No strong reasons can be given to explain the difference especially in medical services accessibility. On the other hand there could be social habits among Tanzanian males that make them more succeptable to ameloblastoma. However this needs to be research upon.

The treatment of ameloblastoma varies from radical to conservative treatment (enucleation and curettage). In our setting the main treatment tends to be radical excision entailing partial/total mandibulectomy and partial maxillectomy. Of those ameloblastoma treated during the study period, only two recurrence were found over a period of six years follow up. The low reccurence supported the method we use in teating ameloblastomas. This method could be used elsewhere since radical excision eliminates the possibility of leaving ameloblastoma cells within the part of the jaw left. On the other hand the low recurrence could be attributed by poor follow up of the operated patients.

It is evident from this investigation that the occurrence of ameloblastoma (18.2%) among patients with oral and maxillofacial tumours in Tanzania is not low. Therefore due to the ailments, deformity and the social stigma posed on the victims, cases of ameloblastoma needs attention in terms of prevention, detection and treatment. While prevention closely relates to the avoidance of known etiology factors, early detection of neoplastic change requires not only an efficient clinical and laboratory medical care system but also one that is easily accessible and affordable to the public. This should be the primary goal among health providers and administrators. Oral health workers should project their efforts in increasing surveillance of the most affected regions so that cases can be detected and treated early enough.

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Table 1: Histological diagnosis of oral-facial tumours

Historical diagnosis	n	%
Squamous cell carcinoma	85	22.1
Burkitt's lymphoma	77	20.1
Ameloblastoma	70	18.2
Pleomorphic adenoma	43	11.2
Haemangioma	42	10.9
Kaposis sarcoma	39	10.2
Ossifying fibroma	16	4.2
Other lymphomas	12	3.1
TOTAL	384	100.0

Table 2: Distribution of patients histologically diagnosed as having ameloblastoma by age and sex

Age group (yrs)	Male	Female	Total	%
11-20	9	2	11	15.7
21-30	13	6	19	21.7
31-40	7	14	21	30.0
41-50	6	6	12	17.7
51-60	4	1	4	7.2
61-70	2	-	2	2.9
TOTAL	41 (58.6%)	29 (41.4%)	70	100

Table 3: Anatomical distribution of ameloblastomas

Site	No of patients	%
Maxilla		
Premolar/molar	2	2.9
Mandilbe		
Incisors/canine	14	20.0
Premolars	9	12.9
Molars/angle	40	57.1
Ramal/TMJ area	5	7.1
TOTAL	70	100