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CLINICAL PATTERN AND MANAGEMENT OF AMELOBLASTOMA AT TERTIARY CARE HOSPITAL OF SINDH

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ABSTRACT

OBJECTIVES: *To determine clinical presentation of ameloblastoma and to plan treatment protocol of ameloblastoma.*
STUDY DESIGN: *Retrospective analytical study.*
PLACE AND DURATION : *Department of Plastic Surgery Liaquat University of Medical & Health Sciences, Jamshoro from January 2000 to December 2005 (6 years).*
DATA COLLECTION PROCEDURE : *Clinical information, radiographs, CT scan and other medical details collected from medical records of Department of Plastic Surgery were evaluated. Total 12 cases of ameloblastoma (diagnosed through biopsy) were treated during this period.*
Data were analysed by using SPSS version 10.0. Study variables were age, sex, type of tumour (unilocular/multilocular) and treatment advised.
RESULTS : *Data records of 12 patients were evaluated. The patients age ranged from 10-years to 60 years with 9 males and 3 females. Ten patients had the lesion in mandible involving the body and extending up to condyle. Two patients had tumour in maxillae. Two patients with recurrent lesions received radiotherapy for tumour size regression. Radical surgery (hemimendibelectomy) was performed in 5 patients. Two patients had with recurrent tumour marsupialisation. Enucleation and curettage done in 5 patients, which included 2 maxillary and 3 unilocular mendibular tumours. Reconstruction with iliac bone graft was performed in one patient and with plating in one patient. All patients were lost for follow up.*
CONCLUSION : *When planning the treatment of ameloblastoma it is important to understand the growth characteristics and removing the full extension of tumour, including the surrounding tissue. Other factor to be considered during operation of ameloblastoma is solid nature of tumour, destruction of the inferior border of mandible, infiltration close to the skull base. Reconstruction procedure is good for functioning and esthetic mandibular problems.*

KEYWORDS: Ameloblastoma, radical resection, enucleation, curettage, radiotherapy.

INTRODUCTION

Ameloblastoma is the most important common tumour affecting mandible and maxilla.[1] It arises from odontogenic epithelium or develops in enamel organ with an unknown aetiology.[2] It is common in African Negro and Asians.[3] It is locally aggressive but histologically benign.[2,4] Usually it occurs in 20 to 40 years of age but no age bar is there.5 It presents usually as slowly growing painless swelling but painful on chewing, often causes malocclusion. It may ulcerate and bleed heavily.[5] It has two types – intraosseus and extraosseus. Intraosseus may be unicystic or multilocular which on radiograph appears as soap bubble, it is more aggressive in nature and has microextension within the bone, hence recurrence rate is high.[6] Ameloblastoma is diagnosed mainly on clinical presentation, radiology and histopathology.

There is controversy in the treatment of ameloblastoma. Conservative surgery has shown good results for unicystic lesion where as radical surgery (hemimandibulectomy) with or without reconstruction is reserved for recurrent lesion and multicystic/solid lesion.7-9 Histological patterns of ameloblastoma according to WHO classification are:

a. Follicualr pattern.
b. Plexiform pattern.

c. Mixed follicular and plexiform pattern.
d. Desomoplastic ameloblastoma.
e. Unicystic.

This retrospective study was conducted to evaluate the treatment options applied at Department of Plastic Surgery Liaquat University of Medical & Health Sciences, Jamshoro.

METHODOLOGY

OBJECTIVES

The objectives of this study were to determine clinical presentation of ameloblastoma and to plan treatment protocol of ameloblastoma.

STUDY DESIGN

A retrospective analysis of ameloblastoma case records was conducted.

PLACE AND DURATION

Department of Plastic Surgery Liaquat University of Medical & Health Sciences, Jamshoro from January 2000 to December 2005 (6 years).

DATA COLLECTION PROCEDURE

Clinical information, radiographs, CT scans, histopathological reports and other medical details collected from medical records of Plastic Surgery Department. Total 12 patients of ameloblastoma (diagnosed by biopsy) were treated during this period.

DATA ANALYSIS

Data were analysed by using SPSS version 10. Variables studied were age, sex, type of tumour (unilocular/multilocular) and treatment advised.

RESULTS

Out of total 12 patients, 9 (75%) males and 3 (25%) females with ameloblastoma were treated. Among those 10 (83.3%) were primary and 2 (16.6%) were recurrent. Maximum number (50%) of patients was in age group 31-40 years (Table 1).

Out of 12 patients 10 (83.3%) had tumour in mandible while 2 (16.6%) patients had tumour in maxillary bone. All patients presented with history of swelling of about 23 months duration, pain on chewing in 2 (16.3%), presentation of ulceration in 1 (8.7%) with bleeding from tumour. On clinical examination swellings were solid.

On radiographic examination 3 (25%) patients found to have unilocular appearance in mandible. Among remaining 9 (75%) multilocular tumours, 7 (58.3%) were in mandible and 2 (16.7%) were in maxillae (Table 2).

Preoperative radiotherapy was performed in 2 (16.7%) patients to reduce the size of tumour, while direct surgery was performed in 10 (83.7%) patients; 2 (16.7%) of them were referred for postoperative radiotherapy.

In 5 (41.7%) patients with primary multilocular tumours in mandible radical surgery (hemimandiblectomy) was performed, 3 unilocular mandibular tumours and 2 multilocular maxillary tumours were treated by enucleation and curettage, while in 2 (16.7%) patients with recurrent tumour marsiapulization was performed.

Out of 5 radical surgeries 2 patients had reconstruction of mandible, (one with metallic plate and other with iliac bone graft fixed with screws between condyles of mandible and symphasis mentil) and only 1 (8.3%) patient had external carotid ligation before hemimandibulectomy to stop massive haemorrhage from ulcerating lesion.

Regarding postoperative complications facial deformity and mastication dysfunction occurred in all patients but more severe in patients having the radical surgery. No any other complication noted. None of the patients had followed after discharge from hospital.

DISCUSSION

Ameloblastoma is a benign disabling but curable disease.[5] This retrospective analysis was carried out to evaluate the existing treatment protocol of ameloblastoma keeping in mind that ameloblastoma is a locally invasive but slow growing and extremely rare metastasizing benign tumour. During this study it was noted that 88% of ameloblastoma occurred in 10-60 years age group with male predominance (M:F = 3:1). These results are comparable to other studies.[5,9-11]

Arotiba observed that most of the tumours (94.9%) occurred in the mandible and all were intraosseous, similar results were noted in this study i.e. 83.3% tumours were in the mandible and all were intraosseous.[12]

All (100%) patients reported swelling, 2 (16.7%) patients had history of pain and 1 (8.3%) patient had ulceration and bleeding.

Radiologically majority (75%) of the tumours was multilocular and only 25% tumours were unilocular. This is again consistent with observations reported in literature (66.21%).[12]

Wide resection of the jaw is usually the recommended treatment of multicystic ameloblastoma. Recent advances in the understanding of biological behaviour of ameloblastoma have revealed that unicystic

RESULTS

TABLE 1. AGE DISTRIBUTION OF AMELOBLASTOMA PATIENTS (N=12)

Age Group	Frequency	Percentage
10-20 years	01	8.3%
21-30 years	04	33.4%
31-40 years	06	50%
>40 years	01	8.3%

Table 2.

RADIOLOGICAL APPEARANCE OF AMELOBLASTOMA

Radiological Appearance	Frequency	Percentage
Unilocular	03	25%
Multilocular	09	75%

Table 3.

SURGICAL TREATMENT OF AMELOBLASTOMA (n=12)

Type of Lesion	Surgical Procedure	Frequency (%)
Primary multilocular in mandible	Radical surgery (hemimandibelectomy)	5 (41.7)
Unilocular in mandibular	Enucleation and curettage	3 (25)
Recurrent multilocular in mandible	Marsuplization	2 (16.6)
Multilocular in maxilla	Enucleation and curettage	2 (16.6)

lesions are well localised by the fibrous capsule of the cyst with few tumours breaching peripheral tissue, whereas multicystic or solid lesions are characterised by an aggressive infiltration to adjacent tissue.[13]

Gardner discussed the treatment of ameloblastoma on the basis of pathologic and anatomic consideration. He stated that the recommended treatment for solid or multicystic ameloblastoma was radical treatment, whereas unicystic ameloblastoma was usually cured by curettage.[14] In present study almost the same guidelines were opted. Radical surgery was done in 5 (41.7%) patients with primary multilocular mandibular tumour. Enucleation with curettage was done in 3 unilocular mandibular and 2 multilocular maxillary ameloblastoma while marsuplization was done in 2 (16.6%) patients with recurrent mandibular tumour. Regarding postoperative complications fascial deformity and masticatory dysfunction occurred in all patients but more severe in patients having radical surgery. These results are again at par with other studies.[15] We could not determine the recurrence rate because of small sample size and due to the reason that none of the patients appeared for follow up after discharge. So the larger studies with follow up are required in our setup. However the international studies reveal that the unicystic type tumours shows lower tendency of recurrence after conservative and radical surgery (15.25%) whereas multicystic type tumours have a high (75.90%) recurrence rate after conservative surgery.[1,16]

CONCLUSION

When planning the treatment of ameloblastoma it is important to understand the growth characteristics and removing the full extension of tumour, including the surrounding tissue. Other factors to be considered during operation of ameloblastoma are solid nature of tumour, destruction of the inferior border of mandible. Reconstruction procedures are good for functioning and esthetic mandibular problems.

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