

AMELOBLASTOMA: A STILL CONTROVERSIAL TUMOUR

ROSNAH BTE ZAIN
N. JANAKARAJAH

SUMMARY

This is a review of 20 cases of ameloblastomas diagnosed and treated at the Dental Faculty, University of Malaya, Kuala Lumpur. The clinical features, histological features and treatment methods are presented. Two basic clinical types namely the conventional (solid/multicystic) and unicystic ameloblastomas showed different recurrence rates. Discrepancies between the recurrent rates in this study for conventional ameloblastoma and for unicystic ameloblastoma and those of other reports are discussed. A brief discussion on the treatment modalities used is also presented.

INTRODUCTION

The term 'adamantinoma' was introduced by Malassez in 1885, but Ivy and Churchill¹ in 1930 changed the name to ameloblastoma since the former term implies the formation of hard tissue,

which is not evident in this lesion. Ameloblastoma has an invasive property and a malignant potential. The latter property is still debatable and as pointed out by Carr and Halperin² in their review of malignant ameloblastoma, only five were proven malignant. Although histologically similar in many aspects, pituitary ameloblastoma and adamantinoma of long bones have been regarded by many authorities to be entities unrelated to ameloblastoma of the jaws.³

Despite the increasing number of studies that have been carried out to-date, this tumour still has many controversial issues such as its aetiology, clinical behaviour and treatment modality. It is thus the aim of this paper to present the experiences in treating 20 cases of ameloblastoma of the jaw.

MATERIALS AND METHOD

Clinical Materials

20 patients with complete clinical and histopathological records were studied. These patients were seen, diagnosed, treated and reviewed at the Dental Faculty, University of Malaya. Information on the clinical and radiological findings were obtained.

Treatment modalities

The following methods of treatment were used in these patients:

Rosnah Bte Zain, BDS (Qld.), MS (Mich.)
Department of Oral Pathology and Oral Medicine

N. Janakarajah, BDS (Ceylon), MDS (Sing.),
FDSRCS (Edin.)
Department of Oral Surgery
Dental Faculty
University of Malaya
51900 Kuala Lumpur, Malaysia

Curettage – surgical scraping of the wall of a cavity within soft tissue or bone for removal of its contents⁴ (three cases).

Enucleation – removal of a lesion by shelling it out intact (five cases).

Marginal resection (Block resection) – surgical removal of a tumour intact with a rim of uninvolved bone.⁵ This procedure implies the maintenance of inferior or posterior borders of the mandible (two cases).

Segmental resection – surgical removal of a segment of the mandible or maxilla without maintaining the continuity of bone (two cases).

Subtotal mandibulectomy – removal of mandible leaving both condyles intact (one case).

Hemisection – removal of half of the mandible or the maxilla (seven cases).

Histopathological material

Available biopsy materials were examined and various patterns were noted.

RESULTS

Most of the lesions gave a long history of six months to nine years except for two cases which were only of one to a few months' duration. All the lesions were located within the mandible mainly the body and ascending ramus with the exception of two cases. The lesion occurred within the maxilla (Fig. 1) in one case while in the other, the lesion extended from the left subcondyle to the right subcondylar region. In most cases the lesions were advanced and patients presented with facial asymmetry (Fig. 2).

Radiographically, the lesions present as either a unilocular radiolucency or a multilocular radiolucency (Fig. 1). Bucco-lingual expansions of the mandible were evident in many cases. Root resorptions of adjacent teeth were also common features.



Fig. 1 Radiograph showing a multilocular radiolucency in the right anterior maxilla.

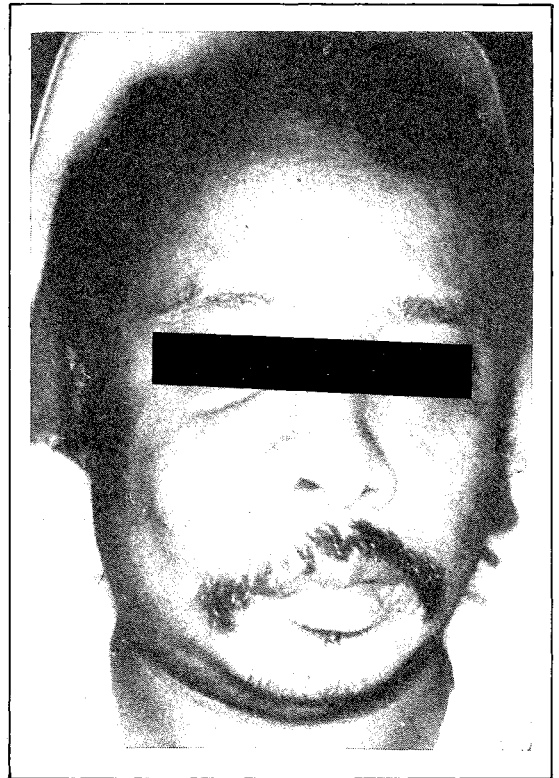


Fig. 2 An enlargement of the right cheek is evident in this patient with a lesion in the maxilla.

Histologically, conventional (solid/multicystic) ameloblastoma consist of a mixed pattern with a common predominance of the follicular (Fig. 3) and plexiform pattern in most cases. Cystic

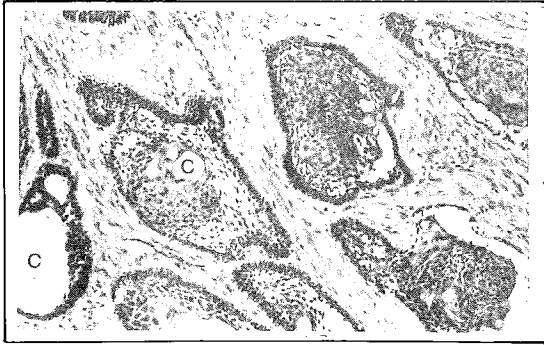


Fig. 3 Follicular pattern of ameloblastoma with cystic degenerations (c). (Original magnification –66X).

degenerations were also common. Six cases of interest were those which may be mistaken for any of the odontogenic cysts. These were the recently recognized entity 'unicystic ameloblastoma'.⁶ This type of ameloblastoma consists of a cyst lining which may or may not exhibit ameloblastoma features with such features occurring either in the cyst wall or proliferating intraluminally from the cyst lining.

Lesions treated by enucleation, hemisection, segmental resection and mandibulectomy did not show any recurrences after a follow-up period of six months to four-and-a-half years. One case had recurred four-and-a-half years after curettage while another case had recurred three months after marginal resection. Table I shows the

number of recurrences observed after the initial treatment at the Dental Faculty and the follow-up treatments. Most of the cases seen had been treated elsewhere. These were not considered as the baseline for our study. The initial treatment was taken to be the first treatment done at the Dental Faculty.

DISCUSSION

The mean age of the patients in this study were not significantly different from those generally accepted as typical of ameloblastoma^{3,6-9} (Table II). The mean ages for conventional and unicystic ameloblastoma being 32 years and 25.5 years respectively. However, other reports^{6,9} had shown that those unicystic ameloblastomas that mimic dentigerous cysts occurred at a much younger age group than those mimicking other odontogenic cysts. Similarly, the number of male to female ratio in our series (1.2:1) is within the same range as that of Small and Waldron's⁸ (1.1:1) and Ramanathan *et al.*, (1.2:1).¹⁰

The radiographic presentations as multilocular and unilocular lesions have been well recognized.³ In our study, resorption of roots of adjacent teeth appears to be a common feature. Other signs and symptoms include bucco-lingual expansion, pain, swelling and paraesthesia which also had been noted in other studies.^{3,10}

TABLE I
RECURRENCES AFTER INITIAL TREATMENT

Type of treatment (Initial treatment)	No. of cases at initial treatment	Second treatment (after recurrence)	No. of cases that had recurred	Follow-up after second treatment
Curettage	3	Marginal resection	1	No recurrence after 6 months
Enucleation	6	—	0*	—
Hemisection	7	—	0	—
Marginal resection	2	Segmental resection	1	No follow-up
Segmental resection	2	—	0	—
Mandibulectomy	1	—	0	—
Total	20		2**	

* All are unicystic ameloblastoma — percentage recurrence = 0%.

** Percentage recurrence of conventional ameloblastoma = 14.3%.

TABLE II
AVERAGE AGE OF OCCURRENCE OF
AMELOBLASTOMA

Authors	Conventional Ameloblastoma	Unicystic Ameloblastoma
Robinson ⁷	30.1 years	
Small and Waldron ⁸	32.7 years	
Shteyer <i>et al.</i> , ⁹		21.8 years
Robinson and Martinez ⁶		19.0 years* 47.0 years**
Dental Faculty University of Malaya	32.0 years	25.5 years

* Mimics dentigerous cyst.

** Mimics other odontogenic cyst.

The histological analysis of the conventional (solid/multicystic) ameloblastoma showed no correlation between patterns and clinical behaviour. This had been shown by Regezi *et al.*,¹¹ in their report of 706 cases odontogenic of tumours. However, the unicystic variety of ameloblastoma did not show an aggressive behaviour six – 18 months after surgery. The fact that unicystic ameloblastoma is a prognostically better tumour than the conventional has been stressed by many workers.^{6,9}

In this series, the percentage of recurrence for conventional ameloblastoma is approximately 14.3% which is extremely low as compared with other studies which ranges from 55–90%.⁴ Such major discrepancies may be due to: mainly radical surgeries were done (10 cases out of a total of 14 conventional ameloblastoma); short follow-up or lost to follow-up.

The latter is an important factor since recurrence has been reported to appear five to ten years after surgery.¹² The two recurrences that were observed, occurred after curettage and marginal resection. The latter recurrence may be due to inadequate removal since the tumour recurred only three months after the initial surgery. Furthermore, the advanced stage of all the cases prior to treatment may account for the failures of curettage and marginal resection.

Enucleation appears to be the most successful treatment in our study. However, the review period is only six to 18 months, thus the results should be viewed cautiously. Another factor that ought to be considered is the fact that all the lesions that were enucleated are unicystic ameloblastomas which had been reported to have a much better prognosis than that of conventional ameloblastoma.⁶ The observed recurrence rate for unicystic ameloblastoma is 0% (Table I) in this study while the reported recurrence rate is less than 10%. The short follow-up of these cases may account for the 0% recurrence rate.

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