A RETROSPECTIVE ANALYSIS OF MANDIBULAR AND MAXILLARY AMELOBLASTOMAS: A COMPARATIVE STUDY

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Introduction

Ameloblastoma is a benign odontogenic tumour derived from odontogenic epithelium characterized by locally aggressive behaviour and high rate of recurrence. It accounts for approximately, 1% of all oral tumours (Okada et al., 2007).

Ameloblastoma has a strong predilection to occur in the mandible than maxilla (Reichart et al.,1995). However, studies that focus on the clinico-pathological differences between mandibular and maxillary ameloblastomas are limited due to the low prevalence of maxillary ameloblastomas.

The objective of this retrospective study was to analyze the relative prevalence and the clinico-pathological characteristics of mandibular and maxillary ameloblastomas in Sri Lanka based on 2005 WHO classification and to compare these data with those from other countries (Barnes et al, 2005)

Materials and Methods

A total of 286 ameloblastomas diagnosed at the Department of Oral Pathology at University of Peradeniya, between January 1999 to August 2008 were reviewed. Hematoxylin and eosin stained sections of these ameloblastomas were used to re-confirm the diagnosis based on the 2005 WHO classification of odontogenic tumours (Barnes et al.,2005).

Thereafter, clinico-pathological characteristics of mandibular and maxillary ameloblastomas were evaluated. Clinical information including age, sex, location of the lesion and recurrence data was obtained from the patients' records.

Results

Out of the 286 cases, 87.8% of ameloblastomas occurred in the mandible while 10.8% occurred in the maxilla indicating a ratio of 8:1. In the mandible 54%, 40% and 6% of tumours and in the maxilla 23%, 48% and 29% of tumours were Solid/multicystic ameloblastomas (SMA), Unicystic ameloblastomas (UA) and Desmoplastic ameloblastomas (DA) respectively.

The distribution of histological subtypes of ameloblastoma in mandible and maxilla is presented in **Table 1.** Accordingly, in the maxilla, UA was the commonest sub type followed by DA. However, in the mandible, the commonest sub type was SMA, which was also the least common type in maxilla. No differences between maxillary and mandibular ameloblastomas were

Table 1. Distribution of Subtypes of Ameloblastoma

Type	Maxilla	Mandible
1. Follicular	02	47
2. Plexiform	02	35
3. Acanthomatous	02	25
4. Granular cell	-	08
5. Basal cell	-	02
6. Mixed	01	19
7. Desmoplastic	09	15
8. Unicystic	15	100
• Luminal	09	43
• Intra-luminal	-	05
• Mural	06	52
Total	31	251

(Site not specified- 04)

observed with reference to mitotic activity or overall cellularity of the tumours.

Of the 286 cases, 144 patients were males and 142 were females indicating a male to female ratio of 1:1. With reference to age distribution, most of the ameloblastomas were observed in 2nd to 5th decade of life (mean age 32.3 years). UA occurred in younger age groups with a peak incidence in the 2nd decade. No striking differences were observed in the age distribution when mandibular and maxillary ameloblastomas were considered separately. When considering site distribution of ameloblastomas, SMAs and UAs were commonly found in the posterior region of the jaws. However, DA showed a strong predilection to the anterior region of both jaws.

Data in relation to treatment was available in 161 cases. Seventy percent of the cases were treated by conservative measures (Enucleation, curettage) and 30% of the cases were treated by radical surgery including marginal resection, segmental resection or total resection of the jaw (maxilla/ mandible). Twenty one percent of ameloblastomas presented with recurrences. Of the recurrent cases 65% were SMAs while 30% were UA and only 5% were DA. About 94% of these recurrences were observed in cases treated conservatively.

Discussion

In the present study 286 ameloblastomas were reviewed and the age, sex, site distributions of ameloblastomas were similar to other studies from the literature.

SMAs were more common than UAs and DAs in the mandible while, in the maxilla UAs and DAs were more common compared to SMAs in the present study. Studies by Reichart and colleagues in 1995 reported that there was no difference in the distribution of different histopathological sub types in mandible and maxilla.

With reference to the cellular features, maxillary SMAs are thought to be more cellular and mitotically active than its mandibular counterpart (Reichart et al., 1995). However, similar results were not observed in the present study as only a single case of SMA of the maxilla presented with mitosis and increased cellularity.

Furthermore, most of the SMAs were found in the posterior region of the maxilla and mandible. In addition, UAs were more common in posterior mandible while DAs showed a predilection to anterior region of both jaws in the present study, which can also be confirmed by other studies (Reichart et al., 1995). Majority of SMAs which recurred had been treated conservatively. Therefore, SMA may require radical treatment to prevent recurrences and this finding can be supported by previous studies (Reichart et al., 1995 and Okada et al., 2007).

Conclusion

In conclusion, mandibular ameloblastomas were more prevalent than maxillary ameloblastomas, while no differences were observed in age or sex distribution between the mandibular and maxillary ameloblastomas. However, higher proportion of desmoplastic and unicystic ameloblastomas were observed in the maxilla compared to some of the other studies. Solid/multicystic ameloblastomas should be treated with resection to prevent recurrences.

References

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