

CASE REPORT

Histopathological Profile of Maxillary Ameloblastoma – A Rare Case Report

Nikhil¹, Subashish Das¹, Kalyani Raju¹, P. N. Sreeramulu²

Abstract

Ameloblastoma (AB) is a benign tumor of odontogenic epithelium that occurs in the jaws. AB occurs usually in mandible (80% of the cases), with only 5% to 20% cases of AB occurs in the maxilla. AB is an indolent tumour with common age of presentation between 30 to 50 years, with no sex predilection. AB is a benign, but locally aggressive tumour and it frequently reappears. Generally, AB lesions are without thick wall and are adjacent to crucial structures with massive blood supply resulting in rapid spread and extension of tumour, consequently causing fatal type of Maxillary AB. Maxillary AB are identified late and requires aggressive treatment. Here, we report a case of Left maxillary AB in a 50-year-old female which presented as a painless swelling. We are presenting this case report due to its rare occurrence globally and to disseminate the knowledge about maxillary AB, which has a gradual onset but manifests aggressively.

Key words: Ameloblastoma, Odontogenic epithelium, histopathology

¹Department of Pathology, ²Department of Surgery, Sri Devaraj URS Medical College, Tamaka, Kolar, Karnataka, India.

Corresponding Author: Dr. Subhashis Das, Professor of Pathology, Department of Pathology, Sri Devaraj URS Medical College, Tamaka, Kolar, Karnataka, India.

E-mail: daspathology@gmail.com

Received: 22nd December 2022

Accepted: 15th March 2023

How to Cite this Article: Nikhil, Das S, Raju K, Sreeramulu PN. Histopathological profile of Maxillary Ameloblastoma – A rare Case Report. J Int Med Sci Acad 2023;36(3):317-319.

Access this article online : www.imsaonline.com



Introduction

AB is a benign neoplasm of odontogenic epithelium and constitute about 9% of all odontogenic tumors [1]. Majority of AB occur in the “molar-ramus” region of the mandible (80% cases), only 5-20% cases occur in maxilla with common age of presentation being third to fifth decade, however, AB can occur in any age group. Even though, AB is benign tumour, it is a locally aggressive tumour and relapses very frequently. Maxillary AB are identified late due to two factors one is that they present as painless, slow-growing swelling and other reason is that radiologically it is difficult to localize and define the lesion in maxilla as maxillary AB are recognized late, so therefore they need aggressive treatment in the form of radical excision when it is diagnosed initially [2].

Case Report

50-year-old lady, presented with a left sided maxillary swelling since five years which was gradually increasing in size. There was no past history suggestive of a similar swelling or any major illness.

On Local Examination

Swelling in the maxilla measuring 2x2 cm, firm in consistency, fixed painless swelling. **General Physical examination** was

unremarkable. **Routine hematological and biochemical tests** were within normal limits.

Radiological Investigations

Magnetic resonance imaging (MRI) revealed an expansile osteolytic lesion involving, body and ramus of the left maxilla leading to cortical thinning. Provisional diagnosis of odontogenic cyst (Ameloblastoma) was suggested on MRI. **FNAC** (Fine Needle Aspiration Cytology) was performed on the maxillary swelling utilizing 25-gauge needles and 10-ml syringes without any radiological guidance. Air-dried and alcohol-fixed smears were prepared from aspirated material and stained with the May Grunwald-Geimsa (MGG) and Papanicolaou (PAP) stains, respectively. **Cytopathology** revealed groups of tightly packed palisaded epithelial cells resembling ameloblasts like cells. Few squamous cells were also seen. No nuclear atypia was seen in the smears studied. Due to these characteristics cytological features, final diagnosis of AB was made on FNAC [Figure 1 A,B,C,D]. Subsequently, the patient underwent left segmental maxillectomy.

Gross Description

Received maxillectomy specimen measuring 3.5 x 2.5 x 1. On the external surface: noted a gray white area measuring 3.5x 2.5 cm. Cut

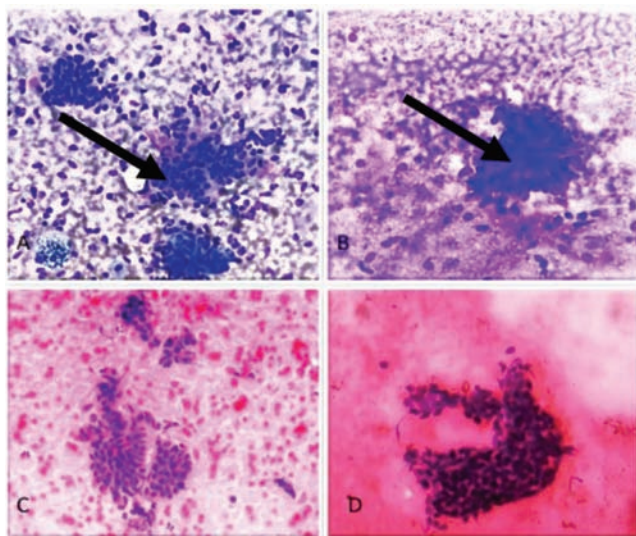


Fig. 1: A-MGG stain x100 demonstrated bassloid type of cells with peripheral palisading having round to spidle shaped bland looking nucleus with scanty cytoplasm, B-MGG stain X 400 showed tall columnar cells with palisading pattern and reverse polarity. C and D H&E stain X 100 & X 400 respectively demonstrated basaloid type of cells

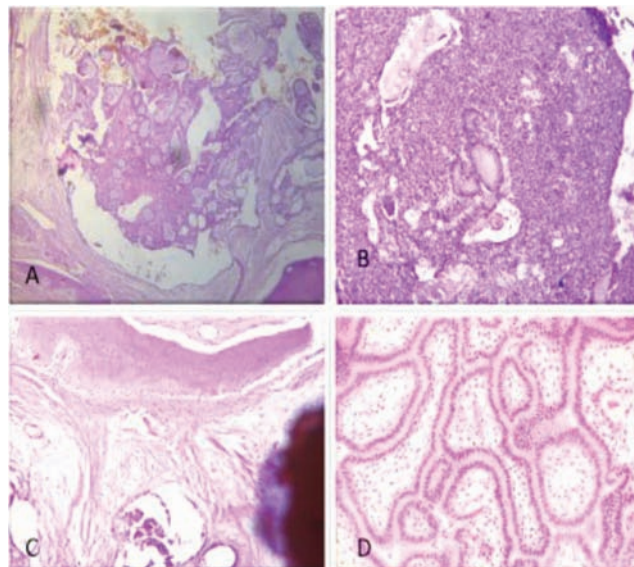


Fig. 3 A,B,C: H&E stained sections shows cystic tumour with squamoid cells arrnged in follicular pattern, lobules and in islands with central loosely arranged stellate cells with focal areas of keratinization. Also noted desmoplastic changes with mild lymphoplasmacytic cell infiltration in the stroma. Fig. 3D H&E Stained section shows peripheral paliisading and reverse polarity of te basaloid type of cells



Fig. 1: A-shows maxillary swelling, B-Gross specimen of maxillectomy, C-Cut surface shows gray-white colours solid-cystic area. Gross none of the tooth were involved.

surface through the growth showed gray white solid cystic areas. All the mucosal margins and bone were grossly unremarkable [Figure 2 A,B,C,D]. The histological examination of the resected specimen confirmed the presence of a follicular variant of AB of the maxilla. **Mircoscopy** showed cystic tumour with squamoid cells arranged in follicular pattern, lobules and in islands with central loosely arranged stellate cells with focal areas of keratinization. Also noted desmoplastic changes with mild lymphoplasmacytic cell infiltration in the stroma. H&E stained section shows peripheral palisading and reverse polarity of the basaloid type of cells [Figure 3 A, B,C, D].

Discussion

AB is a benign tumour arising from odontogenic epithelium mostly inhabitant in the mandible and rarely in maxilla with an approximate incidence of 0.5 per million in the population [3]. There are four chief sub-types of Ameloblastoma’s as follows:

- 1) Solid/multicystic AB,
- 2) Desmoplastic AB,
- 3) Unicystic AB
- 4) Extra-Peripheral AB [4].

Follicular and plexiform types of AB are commonly noted histological patterns in maxillary AB. AB is usually indolent, locally aggressive neoplasm with increased relapse rate. When AB involves mandible the most common site is between angle and ramus of the mandible and when AB involves maxilla, tumour is located mainly in premolar region, it can protract till the maxillary sinus [5]. Maxillary AB clinical can present as facial swelling, nasal obstruction, swelling bulging from the cheek, swelling in the hard palate or swelling in gingiva.[6] [In the current case report patient presented with swelling in gingiva. AB presents as painless swelling, some instances it can present as referred pain but the origin of the

pain is from the tumour itself or it is due to secondary infection is not correctly known [6]. Histomorphologically AB consists of a proliferation of solid strands/islands of odontogenic epithelium with connective tissue stroma. Radiologically AB presents as an unilocular or multilocular corticated radiolucent swelling with adjacent tooth roots resorption can be noted, larger lesion can cause erosion of the cortex [7,8]. The silent behaviour of the lesion makes it difficult to recognize clinically as well as radiographically preventing its earlier detection [9,10]. The treatment of AB is to complete excision with adequate reconstruction. Maxillary AB are even more hard to treat as compared to mandibular AB attributed to complex anatomical relations and distinctive vascular, fragile and cancellous nature of maxillary bones [6]. Close vicinity to crucial structures results in protraction of the tumour, subsequently leading to fatal type of maxillary AB. [9]. Due to late recognition of the tumour, appropriate treatment becomes difficult. Initially complete resection is the preferred mode of treatment, in spite of the histological variant of AB as inadequate surgical treatment initially contributes to increased relapse rate [10]. Radiotherapy has rarely been utilized for AB as it is of the opinion that AB are generally radioresistant. Prognosis of the therapy is dependent on the extension of the lesion along with involvement of nearby structures instead of the origin of lesion alone. Therefore, it is recommended that maxillary AB yearly follow up should be done for minimum 10 years has as they been more threatening clinically and can encroach nearby maxillary sinus and crucial structures [9].

Conclusions

AB generally arise from odontogenic epithelium commonly affecting the mandible. Maxillary AB are rare and not easily identified. So, it is advocated that the patients should undergo radical excision for maxillary AB as it is a more aggressive tumour and can damage the nearby essential structures.

Conflict of Interest:	All authors declare no COI
Ethics:	There is no ethical violation as it is based on voluntary anonymous interviews
Funding:	No external funding
Guarantor:	Dr. Subashish Das, will act as guarantor of this article on behalf of all co-authors.

References

1. Adebisi KE, Ugboke VI, Esan GOO, Ndukwu KC, Oginni FO Clinicopathological analysis of histological variants of ameloblastoma in a suburban Nigerian population. *Head Face Med.* 2006;2:1-8.
2. Nakamura N, Mitsuyasu T, Higuchi Y, Sandra F, Ohishi M Growth characteristics of ameloblastoma involving the inferior alveolar nerve: a clinical and histopathologic study. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2001;91:557-62.
3. Gomes CC, Duarte AP, Diniz MG, Gomez RS Review article: Current concepts of ameloblastoma pathogenesis *J Oral Pathol Med* 2010;39:585-91.
4. Thompson L World Health Organization classification of tumours: Pathology and genetics of head and neck tumours. *Ear Nose Throat J* 2006;85:74.
5. Shaikhi K, Neiders M, Chen F, Aguirre A Morphological variant of ameloblastoma and their mimickers. *NAJ Med Sci* 2012;5:20-8.
6. Dwivedi N, Raj V, Chandra S, Agarwal A Maxillary ameloblastoma extending into the maxillary sinus. *Eur J Gen Dent* 2013;2:182-86.
7. Weissman JL, Cynderman CH, Yousem SA, Curtin HD Ameloblastoma of the maxilla: CT and MR appearance. *AJNR* 1993;14:223-226.
8. Philipsen HP, Reichart PA Unicystic ameloblastoma. A review of 193 cases from the literature. *Oral Oncol* 1998;34:317-25.
9. Hertog D, van der Waal I Ameloblastoma of the jaws: A critical re-appraisal based on a 40-years single institution experience. *Oral Oncol* 2010;46:61-64.
10. Williams TP Management of ameloblastoma: A changing perspective. *J Oral Maxillofac Surg* 1993;51:1064-1070.

