

## Case Report - Fine Needle Aspiration Cytology of Ameloblastoma

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**Abstract :** Ameloblastoma is an uncommon borderline, locally aggressive, epithelial odontogenic neoplasm, constituting about 1% of all tumors and cyst of the jaws. It often presents as a slow growing, painless swelling. Fine needle aspiration cytology (FNAC) of jaw lesions is a rapid and non-invasive procedure for the initial evaluation of these lesions. It provides helpful information and avoids a more traumatic and unnecessary surgical biopsy. Here we present a case of ameloblastoma diagnosed by fine needle aspiration cytology.

**Keywords:** Ameloblastoma, FNAC, Odontogenic Tumors.

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### I. Introduction

Many benign lesions of odontogenic or non-odontogenic origin may give rise to swelling in mandibular region. Ameloblastoma is uncommon borderline, locally aggressive, epithelial odontogenic neoplasm, constituting about 1% of all tumors and cyst of the jaws[1] It often presents as a painless, slow growing swelling causing expansion of the cortical bone, perforation of the lingual and/or buccal plates and infiltration of soft tissue. There is often delay in the diagnosis because of its slow growing nature (2). As most cystic lesions are managed surgically based on imaging, FNAC is performed infrequently in such lesions(3). FNAC of jaw lesions is a rapid and non-invasive procedure for the initial evaluation of these lesions. It provides helpful information and avoids more traumatic and unnecessary surgical biopsy (4). A few reports of FNA of ameloblastoma (5) have appeared in the literature. Here, we present a case of ameloblastoma diagnosed by fine needle aspiration cytology.

### II. Case Report

A 38 year old male presented with a slowly growing left sided, painless, lower jaw swelling since 10 months. Dental and medical history was insignificant. There was no associated difficulty in opening mouth, chewing or articulating. On physical examination, it was a 2x1.5cm, hard, non-compressible, non-tender mass, arising from the body of mandible with obliteration of the vestibule. The overlying skin was normal and not adherent to the underlying swelling. The oral mucosa was normal. No lymph nodes were palpable. Systemic examination was normal. X-ray revealed a multilocular radiolucency with floating tooth appearance. Alcohol fixed smears were prepared from the aspirated material and stained with and Papanicolaou (PAP) stain.

#### 2.1 Microscopy

The smears showed basaloid epithelial cells in sheets and clusters with scanty, poorly defined cytoplasm, elongated nuclei, finely distributed chromatin and inconspicuous nucleoli. Fragments depicting nests and cords of cells in a fibroblastic stroma seen. The cell groups showed peripheral palisading and stellate reticulum in the centre. Nuclear atypia or mitotic figures not seen. Diagnosis of ameloblastoma was suggested on FNAC, in correlation with clinic- radiologic findings and cytomorphological features.[Fig. 1,2,3,4] Diagnosis was confirmed on histopathology after excision of tumor.

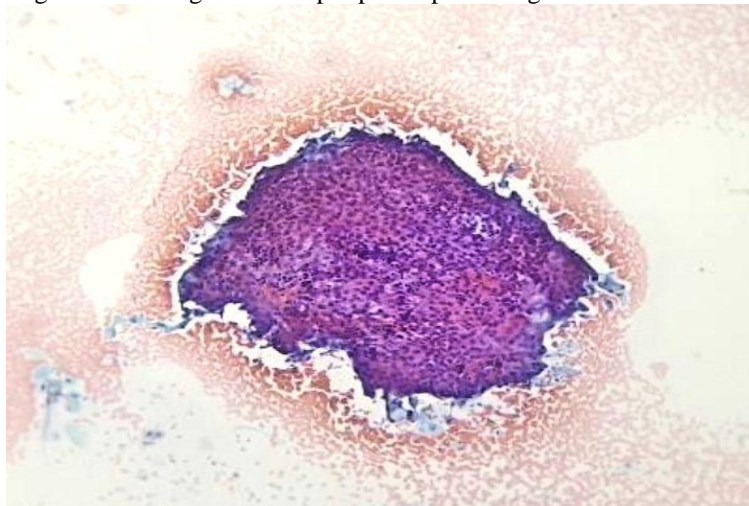
### III. Discussion

Ameloblastoma is an uncommon borderline, locally aggressive, epithelial odontogenic neoplasm. It is commonly seen in the 3rd to 5th decades(1). Mandible is most common site of occurrence. Clinically, it manifests as a painless, slow growing swelling which often leads to delay in diagnosis. Radiologically, ameloblastoma presents as an expansile uni or multiloculated lytic lesion, with thin internal septations giving the classic "soap bubble" appearance. They may be associated with resorption of roots of adjacent teeth. The internal septations represent differential cortical resorption, rather than true compartmentalization of tumor tissue [6]. Incisional biopsy is considered as a prime diagnostic modality for preoperative presumptive diagnosis of these lesions, but as the lesion contain multiple cystic spaces macroscopically; they render some difficulty in obtaining the adequate and representative sample for accurate diagnosis. NAC has an advantage as

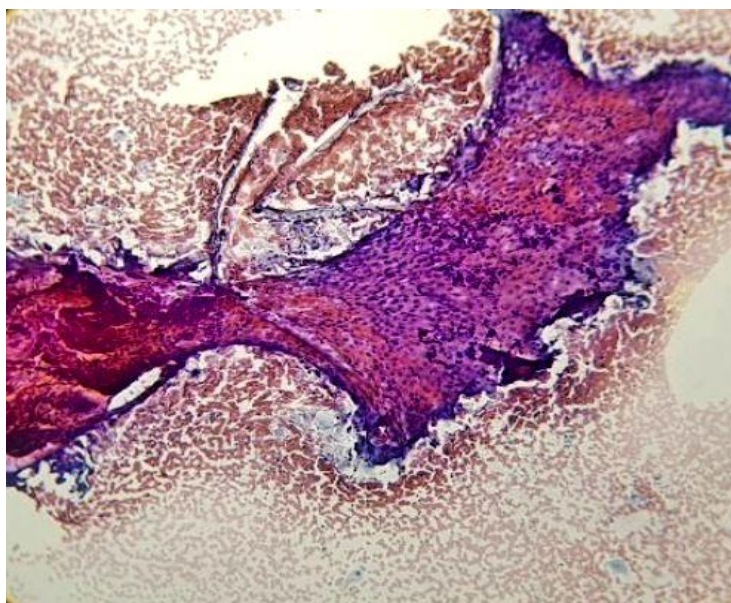
an adjunct diagnostic aid, i.e., sampling can be done at multiple sites and deeper aspect of the tumor can be sampled which can help in arriving at the accurate preoperative diagnosis, especially when an incisional biopsy is superficial and inadequate for interpretation. Ameloblastoma should be distinguished from ameloblastic fibroma, a primary intraosseoustumor. Both tumors show predominance of basaloid cells with peripheral tumor cell palisading. Ameloblastic fibroma, however, has more stromal fragments than ameloblastoma (7). Ameloblastoma also needs to be differentiated from other basaloid cell tumors involving jaw and other odontogenic tumors, which occur in early teenage years as a well circumscribed radiolucency usually associated with malpositioned and unerupted teeth arising mostly in posterior mandible (8).

#### **IV. Figures**

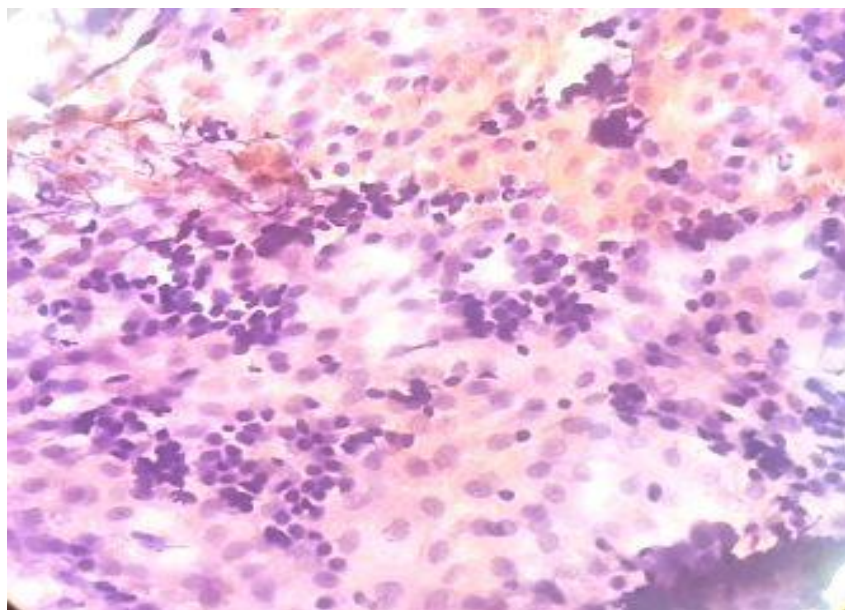
**Figure. 1-** Showing a cellular fragment with peripheral palisading in case of ameloblastoma (Pap10x)



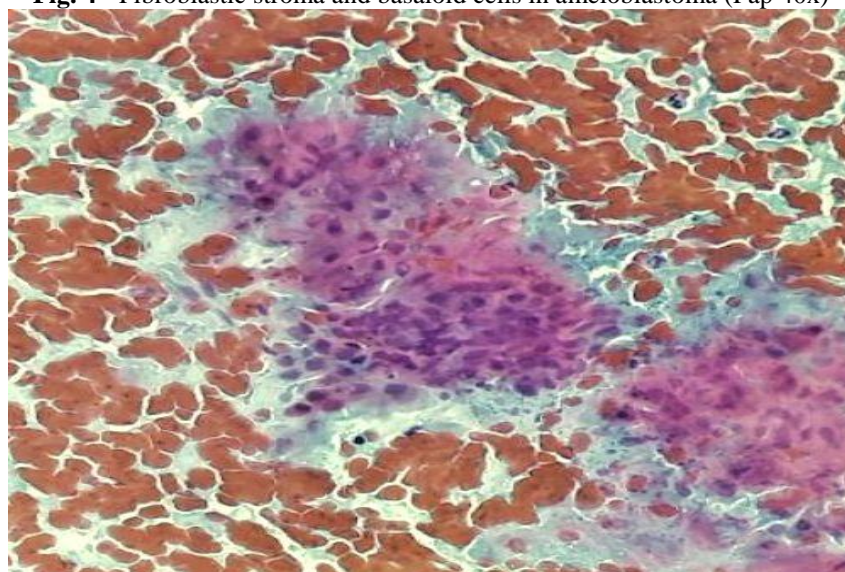
**Figure 2-** FNA smears of ameloblastoma showing cohesive branched epithelial cell clusters [PAP, 10X]



**Figure3.** Showing a cluster of basaloid epithelial cells depicting scanty cytoplasm, fine chromatin and inconspicuous nucleoli in ameloblastoma(PAP, 40x)



**Fig. 4 -** Fibroblastic stroma and basaloid cells in ameloblastoma (Pap 40x)



## V. Conclusion

To conclude, in the presence of appropriate clinico-radiologic findings, FNAC provides a simple, low-cost, rapid and reliable pre-operative diagnosis of ameloblastoma, avoiding unnecessary surgical biopsy and ensuring an adequate surgical excision in a planned manner

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