



## The importance of excisional biopsy in histopathological diagnosis

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### ARTICLE HISTORY

Received: 02.08.2012

Accepted: 08.08.2012

Available online: 10.11.2012

### Keywords:

Excised specimen, Incisional biopsy, Ameloblastoma, Diagnosis.

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### ABSTRACT

Histological diagnosis made on the basis of incisional biopsy can have pitfalls if the biopsy is not taken from the representative site, therefore, thorough examination of the excised specimen is essential for the confirmation of the diagnosis. Here we describe a case that on incisional biopsy was thought to be an invasive salivary gland tumor but the excised specimen revealed ameloblastoma, thus showing the importance of excised specimen in reaching conclusive diagnosis.

### INTRODUCTION

There is no doubt that the preoperative histological confirmation of the clinical diagnosis is advantageous. Knowledge of tumor tissue type is essential for appropriate treatment planning. However, the histological report largely depends upon the technique and site from where biopsy is taken. Therefore, an incisional biopsy can be misleading if not taken from the representative site.

Tamy BHB, Klaus FH, Michael DI [1] stated that deeper sections can provide diagnostic information in 37.3% of the cases. The difficulty in making a definitive diagnosis on the initial biopsy may be due to small size or superficial nature of the specimen.

We present a case which initially showed the features of salivary gland tumor and was advised to be resected due to its invasive pattern. However, excised specimen showed the features of ameloblastoma. Through this article we emphasize the importance of examining the entire pathology before giving confirmatory diagnosis.

### CASE REPORT

A 30 years old male patient reported to the Oral and Maxillofacial Surgery Department, Subharati Dental College, with a chief complaint of swelling on the left side of lower jaw and supraeruption of left mandibular teeth since 6-8 months. The extraoral swelling was firm to hard on palpation. (Figure 1) Radiograph showed a multilocular radiolucent lesion in left side

of body and ramus region of the mandible. (Figure 2)

Incisional biopsy was sent to the Department of Oral Pathology for histological examination. The tissue was processed, paraffin wax blocks were made and sections were taken of the tissue. Microscopically, the section showed a connective tissue stroma with diffuse infiltration by small uniform appearing cells. The cells showed dysplastic features and a diffuse pattern of invasion. Some clear cells were also seen. Areas of hemorrhage were evident. (Figure 3 a,b)

The features were suggestive of a highly cellular tumor with monotonous appearing cells possibly a salivary gland neoplasm. The diffuse cellular invasion created suspicion towards the aggressiveness of the lesion and resection of the pathology was advised.

The patient was operated upon under General Anesthesia and the tumor mass was resected completely along with the embedded teeth and submandibular salivary gland. Extension of resected specimen was from left central incisor to retromolar region. Whole specimen was sent for histopathological examination. (Figure 4)

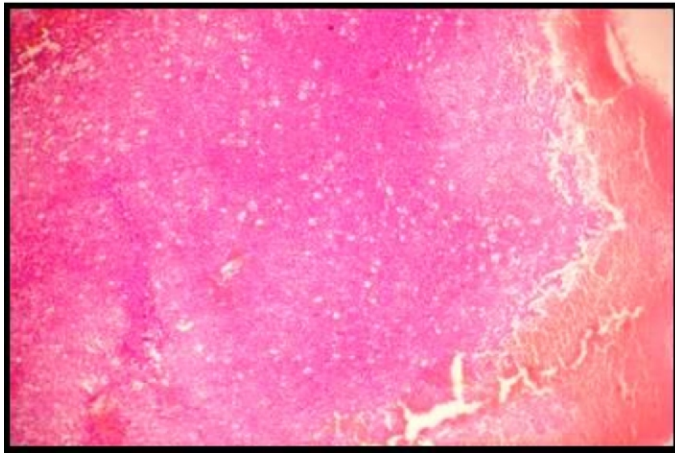
Tissues were taken for examination from anterior and posterior extensions, superior (buccal) and inferior (lingual) aspects and submandibular salivary glands. Tissues were processed, paraffin blocks were made and sections were stained with H&E stain. On histopathological examination anterior and posterior extensions showed no evidence of tumor. Presence of



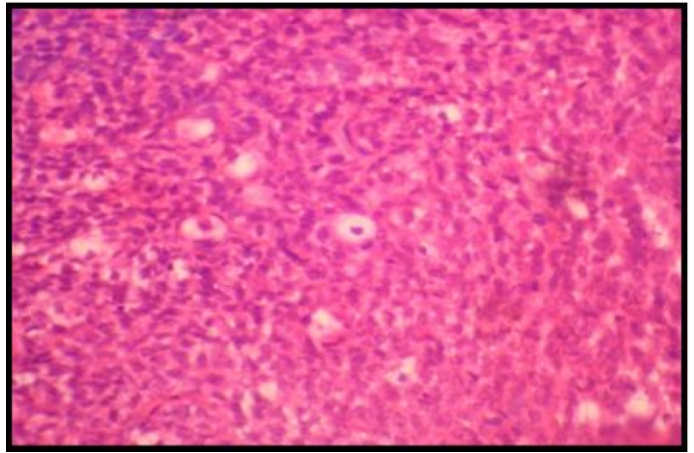
**Fig. 1:** Extraoral swelling on left side of lower jaw.



**Fig. 2:** Multilocular radiolucency on left side of lower jaw.



**Fig. 3 a:** Connective tissue stroma with diffuse pattern of cellular proliferation. (H&E 10×10x)



**Fig. 3 b:** Connective tissue stroma with diffuse pattern of cellular proliferation. (H&E 10×40x).

ameloblastic follicles with squamous metaplasia were present in superior aspect (Fig.5a,b). Inferior aspect showed proliferating odontogenic epithelial cells without follicle formation, resembling basal cells. Submandibular salivary gland was found free of tumor invasion.

The features led to the diagnosis of ameloblastoma (showing high cellularity with few areas of squamous metaplasia).

## DISCUSSION

A pathologist is endowed with the responsibility of diagnosing the lesion based on which treatment plan is made. However, in case of incisional biopsy he has to rely on the tissue sent. Excisional biopsy has an additional advantage over incisional biopsy by opening the choice for pathologist to select the appropriate site for microscopic examination.

In the present case, on incisional biopsy, the lesion showed high cellularity, diffuse invasive pattern of proliferation and dysplastic features. Based on the above features the diagnosis was given of a salivary gland tumor with a possibility of malignant transformation. Due to the invasive nature of the lesion complete excision was recommended.

When the excised specimen was sent for histopathological examination, tissues were taken from anterior, posterior, superior, inferior aspects as well as submandibular salivary gland to rule out complete clearance of the margins as well as to confirm the

diagnosis. Tissues from anterior and posterior extensions showed no tumor invasion. But superior extension showed the presence of ameloblastic follicles with squamous metaplasia. Salivary gland was found to be free of tumor invasion.

The results were in contrary to those obtained on incisional biopsy. Based on the above results, the diagnosis was confirmed as ameloblastoma.

According to Giuliano A, Juan CV, Luis GC, Primitivo R [2] ameloblastoma is a benign but locally invasive pleomorphic neoplasm consisting of a proliferating odontogenic epithelium located in a fibrous stroma. Harry HM, Perry MG [3] stated that several histomorphologic subclasses have been proposed. Among these are follicular, plexiform, acanthomatous, desmoplastic, basal cell and granular cell types.

On comparing the features obtained from the examination of excised specimen with those of ameloblastoma variants, the diagnosis was confirmed as a ameloblastoma (highly cellular with few areas of squamous metaplasia).

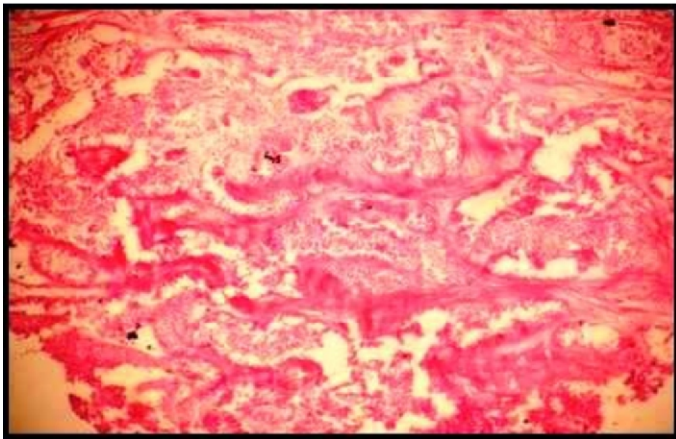
According to Bryne M, Koppang HS [4] non representativity of the biopsy is of clinical importance because the treatment may partly be based on grading of biopsy specimen.

Because ameloblastomas are most often composed of heterogeneous cell population, small biopsy may not include metastatic phenotype within a tumor. Therefore, examination of

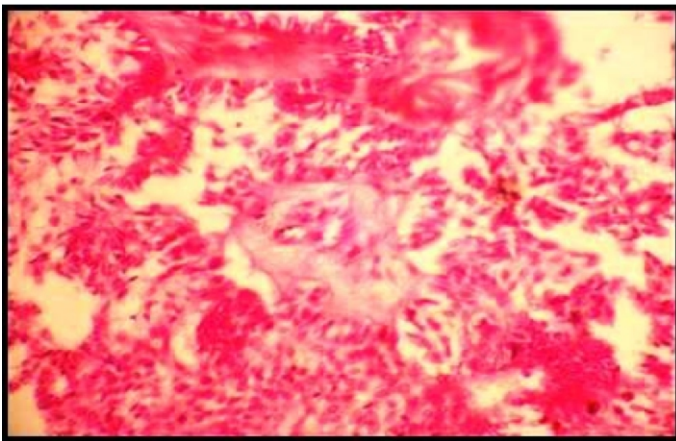




**Fig. 4:** Resected specimen



**Fig. 5 a:** Follicles with squamous metaplasia (H&E 10×10x).



**Fig. 5 b:** Follicles with squamous metaplasia (H&E 10×40x).

entire neoplasm before giving confirmed diagnosis is important as the superficial biopsy may not be reliable and cause a pitfall in the diagnosis.

Bang G, Dabelsteen E [5] stated that assessment of margins of the excised specimen is an important part of the pathological examination for ruling out the marginal clearance. Lees VC, Brigg JC [6] suggested that all suspicious lesions should be submitted to excisional rather than incisional biopsy to avoid compromising the histological assessment. Excised specimen is also useful for tumor grading. The present case has proved that

excised specimen is also valuable for giving the confirmed diagnosis of the tumor and therefore should be examined thoroughly.

## CONCLUSION

A histopathological report is important for the confirmation of clinical diagnosis and for planning of the treatment modality. A benign lesion can be treated conservatively, but an invasive lesion may require more extensive treatment.

An incisional biopsy, if not taken from representative site or taken too superficially, may misguide in establishing the diagnosis and here lies the importance of examining the excised specimen for an accurate histopathology diagnosis.

## REFERENCES

1. Tamy BHB, Klaus FH, Michael DI: Cystic basal cell carcinoma or Hidrocytoma? The use of an excisional biopsy in a histopathologically challenging case. *Am J Dermatopathol.* 2004; 26 (1): 67-69.
2. Giuliano A, Juan CV, Luis GC, Primitivo R: Ameloblastoma Revisited. *Ann Otol Rhinol Laryngol.* 2003; 112: 1034-39.
3. Harry HM, Perry MG: Ultrastructure of three histologic variants of the ameloblastoma. *Cancer.* 1972; 30(4): 1036-45.
4. Bryne M, Koppang HS: New malignancy grading is a better prognostic indicator than Broder's grading in oral squamous cell carcinoma. *J Oral Pathol Med.* 1989; 18: 432-37.
5. Bang G, Dabelsteen E: A histopathological appraisal of surgical margins in oral and oropharyngeal cancer resection specimens. *Oral Oncol.* 2005; 41(10): 1034-43.
6. Lees VC, Brigg JC: Effect of initial biopsy procedure on prognosis in stage I invasive cutaneous malignant melanoma; a review of 1086 patients. *Br J Surg.* 1991; 78(9): 1108-10.