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Case Report

Infarction in a Parotid Pleomorphic Adenoma Following FNA: A Case Report

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Abstract: Fine needle aspiration cytology is used as a first line diagnostic procedure for salivary gland lesions. Eventhough it is a safe method, FNA can induce tissue changes which may cause diagnostic difficulty in histopathology. Such changes in salivary gland include infarction, hemorrhage and metaplastic changes. We report a case of 87 year old female with pleomorphic adenoma showing FNA induced infarction.
Keywords: pleomorphic adenoma, infarction, fine needle aspiration.

INTRODUCTION

FNA is a safe and a well tolerated method for the rapid diagnosis of lesions in various tissues (Umit, C. *et al.*, 2005). It is used as a first line procedure for the diagnosis of salivary gland lesions. There are a few complications induced by FNA in salivary glands (Bayramoğlu, H. *et al.*, 2001; Mukunyadzi, P. *et al.*, 2000). We report a case of pleomorphic adenoma following FNA.

CASE REPORT

An 87 year old female came with history of swelling in left parotid region for 7 years. She had a history of FNA 5 years back and was left untreated. Patient noticed recent increase in size for the past 3 months. Ultrasonogram showed a cystic focus in left parotid gland region with large mural solid component within it measuring 6.5 x 4.8 cm suggesting a neoplastic etiology. FNA was done and a diagnosis of Pleomorphic adenoma was made (Fig 1). Patient was asymptomatic post FNA. CT taken following FNA suggested possibility of Warthins tumour. Following 18 days post FNA, superficial parotidectomy was done.

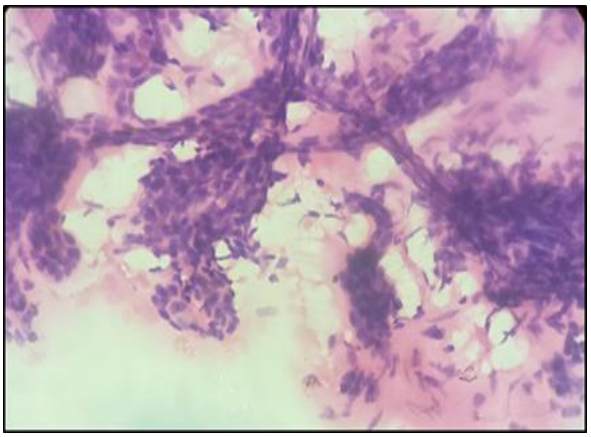

Fig 1: Pap stained smear showing myoepithelial cells in a chondromyxoid matrix.

Specimen received was a cystic mass weighing 150 gm and measuring 9 x 7 x 4 cm. Cut section showed a uniloculated cyst with hemorrhagic fluid and a solid area measuring 6.5 x 6 x 3 cm with yellowish and necrotic areas (Fig 2). Histopathological examination revealed pleomorphic adenoma with extensive areas of necrosis and compressed salivary gland tissue peripherally. Re- examination of the cytology smears showed no evidence of necrosis. This was in favour of the assumption that the infarction was FNA induced.

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Fig 2: Cut section of the specimen showed cystic and solid areas.

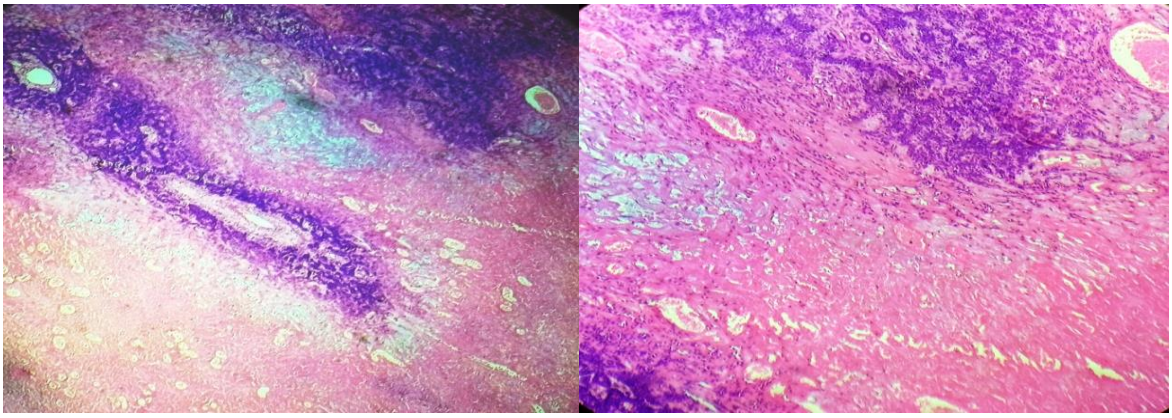

Fig 3: Pleomorphic adenoma with extensive areas of necrosis.

DISCUSSION

FNA is a well-established diagnostic procedure for the rapid diagnosis of salivary gland lesions. Pleomorphic adenoma is the most common neoplasm of the parotid gland which accounts for about 70% of parotid tumours. Most of the pleomorphic adenoma arises in the superficial lobe.[2]

FNA related tissue changes are described in various organs. Such changes in salivary gland include infarction, hemorrhage, vascular proliferation, fibrosis and metaplastic changes (Mukunyadzi, P. *et al.,* 2000). On review of literature, a study conducted by Perkins Mukunyadzi *et al.,* about the tissue effects of salivary gland fine needle aspiration, the post FNA frequency of necrosis in salivary gland tumours was 7%. Infarction is a pathologic change that results from inadequate blood supply. Parotid gland is a vascular organ supplied by the branches of external carotid artery. During FNA, direct injury to the microvascular supply and resulting thrombosis is considered the probable mechanism for inducing infarction (Bayramoğlu, H. *et al.,* 2001; Mukunyadzi, P. *et al.,* 2000). In this case, the lesion was cystic with already compromised blood supply and FNA might have made it more vulnerable to vascular insufficiency. But no thrombus could be identified within the tumour in this case.

Necrosis in pleomorphic adenoma following FNA can cause diagnostic dilemmas by obscuring the microscopic features of the neoplasm. Necrosis in pleomorphic adenoma is also considered as one of the features of malignant transformation (Bayramoğlu, H. *et al.,* 2001). So a false positive diagnosis of malignant neoplasm may be erroneously made in such cases. However, the tissue reactions following FNA can be minimized by the usage of small gauge needle and careful aspiration (Bayramoğlu, H. *et al.,* 2001).

Depending on the presence or absence of the diagnostic features, Batsakis *et al.,* classified the tissue effects associated with FNA into three categories:

- Micronecrosis and hemorrhage with retention of diagnostic features
- Macronecrosis (infarction) with detection of diagnostic features
- Macronecrosis and micronecrosis with reactive proliferation of cells of the lesion and stromal cells (Batsakis, J.G. *et al.,* 1992).

In this case, even with extensive areas of necrosis, diagnosis was possible with the retention of areas of pleomorphic adenoma. So it can be categorized as macronecrosis (infarction) with detection of diagnostic features.

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