Case Studies

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CYTODIAGNOSIS OF PLEOMORPHIC ADENOMA WITH INTRANUCLEAR INCLUSIONS: A CASE REPORT

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Abstract: Pleomorphic adenomas are among the commonest tumors of salivary glands, but are quite rare in minor salivary glands. Diagnostic difficulty in cytodiagnosis of pleomorphic adenomas may be caused by histological diversity, as FNA demonstrates most of the histological features of pleomorphic adenoma. As FNA is considered a useful tool in initial assessment of the tumor, so the cytopathologists needs to be aware of the cytologic variations. Over the years, very few case reports of the various cytologic variations of pleomorphic adenomas, especially of minor salivary glands have been made. So this case is being reported here for this unusual finding in pleomorphic adenoma of an uncommon site.

Keywords: Pleomorphic adenoma, Salivary glands, Cytodiagnosis

INTRODUCTION

Pleomorphic adenomas are the most common salivary gland tumors; they constitute 60-70% of all parotid tumors[1]. Most of them occur in the superficial lobe of parotid gland. The cytologic features of pleomorphic adenoma are usually quite characteristic and the correct diagnosis can be readily established on an adequate specimen in most cases. However diverse morphological features may cause diagnostic errors in FNAC, particularly various nuclear changes.

Case history

A 45 year female presented with a slowly growing painless swelling in the right cheek of 6 months duration. The lady had a history of injury at the same site 10 years back without any significant consequences. On examination there was a nodular, firm, nontender, mobile mass of 2cm diameter in the right cheek. Inner mucosal surface and outer skin surface appeared normal and intact. FNAC was done from the swelling. Cytosmears were highly cellular and revealed cells arranged in cohesive clusters and scattered singly, admixed with abundant chondromyxoid matrix [Figure 1]. Cells show mild degree of pleomorphism with bland nuclear chromatin and moderate amount of cytoplasm. Plasmacytoid cells were also seen [Figure 2]. Cytoplasmic intranuclear inclusions were seen in many of the cells [Figure 3 & 4].

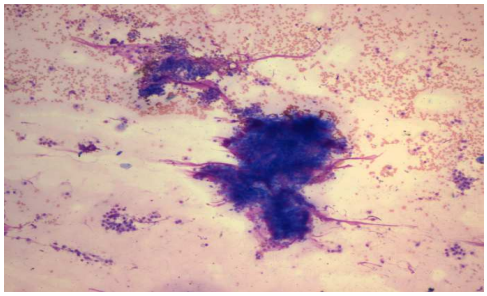

Fig.1: Leishman (100x): Chondromyxoid stroma

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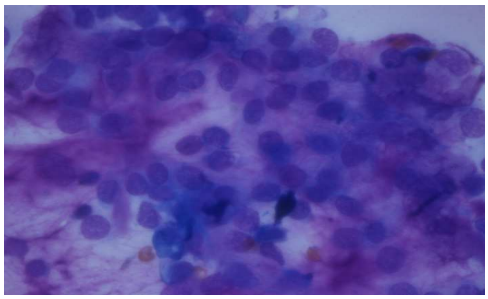

Fig.2: Leishman (400X): Chondromyxoid matrix & plasmacytoid cells

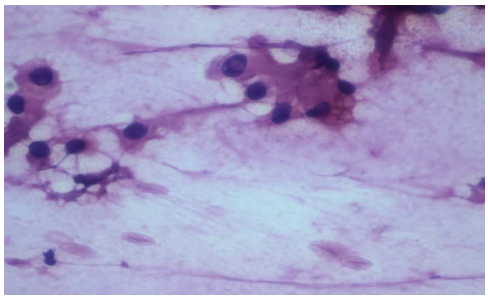

Fig.3: PAP (400X): Intranuclear inclusions

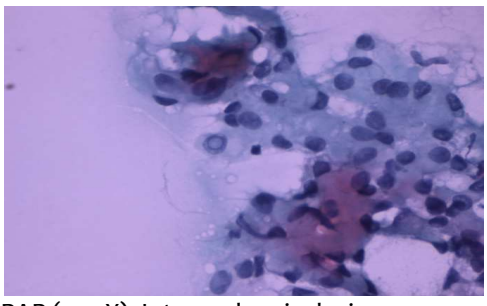

Fig.4: PAP (400X): Intranuclear inclusions

DISCUSSION

Pleomorphic adenomas (benign mixed tumor) typically present as a painless, persistent swelling, occurring most commonly in adults during 3rd to 5th

decade of life. Most of them arise in parotid glands and few also occur in minor salivary glands of palate (60-65%), cheek (15%), tongue and floor of mouth (10%)[1]. It is more frequent in women.

On cytology, the characteristic feature which helps in correct diagnosis in an adequate specimen is presence of plasmacytoid myoepithelial and epithelial cells in clusters embedded in a chondromyxoid matrix[1]. This matrix may stain grey-green in Papanicolaou stain or intensely red or purple with hematoxylin & eosin stains. The epithelial cells usually form loosely cohesive clusters or may be arranged in flat sheets.

On FNAC, pleomorphic adenoma can show unusual and rare morphological features and may cause diagnostic difficulties. Various metaplastic changes, including squamous metaplasia are quite commonly observed and have been reported in literature repeatedly[2]. However, nuclear changes like nuclear inclusions are quite rare and only few cases have been reported in literature. The first such case report was of Murty et al in 1993[3].

Over the years, as more and finer needle cytology aspirations of head and neck regions are being performed, it is becoming clear that intranuclear cytoplasmic inclusions are not synonymous with papillary carcinoma of thyroid. By reviewing extensive literature on intranuclear inclusions, normal tissue aspirates from liver, renal tubule, adrenocortical cells and bronchiolar epithelium, as well as aspirates from certain benign tumors (follicular adenoma of thyroid, nevi, meningioma, carcinoid, granular cell myoblastoma, paraganglioma, mammary adenomyoepithelioma, cardiac myxoma, epithelioid hemangioma) and malignant tumors(papillary, hurtle cell and medullary carcinoma of thyroid, adenocarcinoma of lung & endometrium, carcinoma of the bladder, hepatocellular carcinoma, melanoma, leiomyoblastoma, and extra skeletal myxoid chondrosarcoma) have revealed presence of these inclusions. In salivary gland nuclear inclusions can be found in pleomorphic adenoma and mucoepidermoid carcinoma[4].

Diagnostic problems in pleomorphic adenoma may arise when such unusual and rare features are encountered and may be misinterpreted as carcinomas. In all such cytologically difficult cases, the cytopathologists should rely on characteristic features of pleomorphic adenoma like epithelial cells in chondromyxoid matrix for diagnosis. Suggestive history of long standing, slow growing painless nodule aid in the diagnosis and also helps to differentiate from metastatic carcinomas as they usually present with a rapidly growing mass of short duration.

The treatment of choice is complete surgical excision. The recurrence rates at 5 and 10 years following complete excision are 3.4% and 6.3% respectively[1].

CONCLUSION

FNA cytology demonstrates well most of the histological features of pleomorphic adenoma of salivary gland but the cytopathologists need to be aware of the cytologic variations in pleomorphic adenoma so as to avoid diagnostic errors.

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