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CLINICAL REVIEW OF PLEOMORPHIC ADENOMA OF THE SUBMANDIBULAR SALIVARY GLAND

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ABSTRACT

Pleomorphic adenoma (PA) is the most common tumor of the benign salivary gland neoplasms, and the most common gland to be involved is the parotid gland. Its occurrence in the submandibular or the sublingual gland is uncommon. We reviewed patients with submandibular gland pleomorphic adenoma treated at our institution, Gannavaram, Andhra pradesh in last 6 years. Eight patients were identified. 5 newly diagnosed cases and 3 cases of recurrent disease previously treated elsewhere. All cases were surgically excised with extra capsular gland excision . In patients with recurrent disease, complete microscopic tumor clearance was achieved in three of the eight cases, however all remain clinically tumor free. Pleomorphic adenomas of the submandibular gland are uncommon, with good prognosis following complete tumor excision. Recurrent tumors, however are frequently multi-focal and difficult to excise completely. The adequacy of primary surgery is crucial and supports an approach for a more radical excision ensuring complete disease clearance for pleomorphic adenoma ,avoiding the risks of tumor spillage associated with a limited excision and tumour handling.

KEYWORDS

Pleomorphic adenoma, Submandibular gland, extra capsular gland excision

INTRODUCTION

Salivary gland tumors are rare comprising only 3% of head and neck tumors.(1,3) Approximately 90% of the benign neoplasm of the major salivary gland is associated with the parotid gland. Pleomorphic adenoma (PA) constitute 80–90% of these benign parotid neoplasms. PA of the submandibular and sublingual gland is quite uncommon and comprises rest (8–10%) of the group(2,3) .Surgery with safety margins is the therapy of choice.(4) Local recurrence after surgery has been attributed to different factors: the type of surgery, lesions of the pseudocapsule due to intraoperative maneuvers, and insufficient preoperative diagnostics leading to an underestimation of tumor extension, in particular in cases with multifocal origin of the tumor.(4)

Pleomorphic adenoma is characterized by great histological diversity, and myoepithelial cells are considered responsible for the production of the extracellular matrix.(5). The mixed aspect of PA is constituted by by two tissue specific findings , subdifferentiation of epithelia and modified epithelia and the amount and the constitution of the stroma.(4)

Many studies have been conducted on the PAs of the parotid and minor salivary glands, but few on the PAs of the submandibular gland. The objective of this study was to describe the clinical outcome of patients with PA from submandibular salivary gland in order to evaluate the surgical strategy of a single institution.

MATERIALS AND METHODS

This study comprises data from 8 patients with pleomorphic adenoma of submandibular salivary gland who were surgically treated between 2008 and 2013 at our institution. Among them, 5 patients had initial presentation and 3 were reported as recurrent. Age, gender and treatment pattern were also noted.

RESULTS

The age group of patients varied from 35 t0 65 years, with a mean age group 50 years, and female preponderance was noted (figure 1, 2) .The main symptom was swelling in the submandibular region, and the duration of symptoms before treatment was from 6 months to 2 years and 2 years to 4 years in recurrent cases. Laterality of tumor growth was conspicuous for submandibular gland tumors, the left side being affected in 5 individuals and 3 patients found with right sided PA

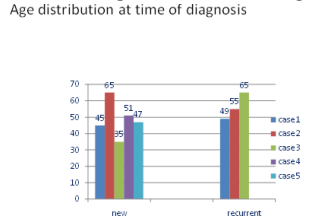

Figure 1

- Female preponderance was noted with 62.5% to the males 37.5%

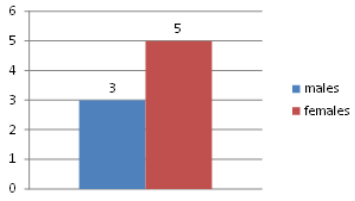

Figure 2

All 8 patients were subjected to Fine needle aspiration cytology as per investigation protocol and were diagnosed as Pleomorphic adenoma. FNAC revealed cellular smears composed of a mixture of epithelial and stromal components. (figure 3) Coronal and axial CT scan was done in 3 individuals to confirm the extent of lesion. All patients underwent surgical excison. In 5 of them, PAs were primary tumors; however, PAs had recurred locally in the other 3 patients who had been initially treated in another hospital. The treatment of the 5 patients having a primary tumor consisted in the transcervical resection of both the tumor and the submandibular gland.(figure 4, 5) Three of the 8 patients having a recurrent PA were also treated by excision of the submandibular gland and the tumor. No recurrence was reported in the patients after surgical treatment. The surgical specimen was subjected to histo pathological examination. The paraffin-embedded specimens were stained with hematoxylin-eosin and it showed well circumscribed encapsulated mass composed of an admixture of ductal epithelial, myoepithelial and stromal components.Features of malignant transformation such as necrosis, nuclear atypia, hyalinization, invasion of adjacent tissue, and increased abnormal mitotic activity were not observed. The prognosis was good in all cases.

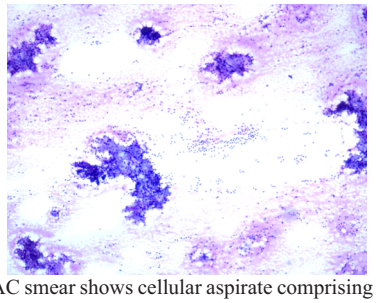

Figure 3 FNAC smear shows cellular aspirate comprising of clusters

of ductal epithelial cells, myoepithelial cells in chondromyxoid stroma.

Figure 4 transcervical excision of the tumour and submandibular gland

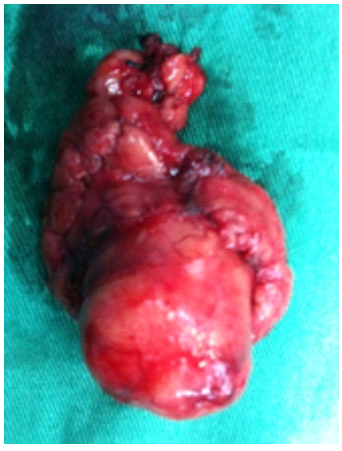

Figure 5 surgical specimen after excision

DISCUSSION

Our study included data from 8 patients with pleomorphic adenoma of sub mandibular salivary gland who were surgically treated by surgical excision of tumor and the gland . There were no recurrence rates reported in the 5 cases. Complete excision of the sub mandibular salivary gland offers cure unlike the partial parotidectomy performed for the pleomorphic adenoma of the parotid gland where recurrence rates of 1.6 – 25% over 12.9 years are documented. (6,7)

All our cases were diagnosed as Pleomorphic adenoma with FNAC . FNAC is very accurate in diagnosis of pleomorphic adenoma with sensitivity. specificity, and accuracy of 92%, 100%, 98% respectively on Hand E and Papanicoleau staining.(6) CT scan or Magnetic Resonance Imaging (MRI) are the gold standard radiological tools for lesion arising from the major or minor salivary glands. An incisional biopsy can be taken initially if the lesion is of large size. The recommended surgical approach is with a direct submandibular incision which provides an easy access.(3)

PA is a benign epithelial tumor of complex morphology, possessing epithelial and myoepithelial elements intermingled with mucoid, myxoid, or chondroid tissue arranged in a variety of patterns and embedded in a mucopolysaccharide stroma. It is the commonest benign tumor of salivary glands and accounts for 90% of all salivary gland tumors. The submandibular gland is the second most common site of PA after the parotid gland.It is also the most frequent benign tumor arising in submandibular gland.The differential diagnosis should include basal cell adenoma, adenocarcinoma, mucoepidermoid carcinoma and lymphoma.(3)

CONCLUSION

A high index of suspicion is required for non- inflammatory lesions in the sub mandibular region to avoid undue delay in definitive treatment. The excision of the tumor should also be accompanied by the removal of the submandibular gland in toto. Incomplete removal of the glandular tissue paves the way for a definitive recurrence. PAs are benign tumors with a well-documented transformation to malignancy (carcinoma ex pleomorphic adenoma). It is estimated that up to 25% of untreated PAs undergo malignant transformation.(3,8) Therefore, early definitive treatment is strongly recommended.

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