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Pleomorphic adenoma of deep lobe of Parotid gland: A rare case

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Abstract

History and Examination: A 30-year lady presented to the General Surgery OPD with complaints of a slow-growing painless swelling in the right parotid region for 1 year. A single, 4×3cm, vertically oval, firm, non-tender, freely mobile swelling was palpated in the right parotid region.

Investigations: Ultrasonogram revealed a well-defined hypoechoic lesion in the superficial lobe of the parotid gland- possible Pleomorphic adenoma. USG guided FNAC from the swelling showed features of Pleomorphic adenoma.

Treatment: Total conservative parotidectomy.

Histopathology: Sections from the superficial lobe showed salivary gland characteristics with few lymphoid follicles. The deep lobe showed histopathological features suggestive of Pleomorphic adenoma.

Conclusion: A diagnosis of pleomorphic adenoma of the superficial lobe of the parotid was made basing on clinical examination & investigations, and was planned for superficial parotidectomy. However to our surprise, apart from the essentially normal superficial lobe of the parotid gland, a tumor in the deep lobe of the parotid gland was found, and hence proceeded with total conservative parotidectomy.

Keywords: Deep lobe parotid tumor, Pleomorphic adenoma, Total conservative parotidectomy

Introduction

Pleomorphic adenoma is the most common salivary gland neoplasm, accounting for 63% of all parotid gland tumors^[1]. Most Pleomorphic adenomas originate in the superficial lobe; rarely these tumors involve both the lobes^[1]. Tumors involving exclusively the deep lobe are very rare^[2]. Ultrasonography is the initial imaging of choice for tumors originating from the major salivary glands^[3]. CT scan and MRI scan are complimentary imaging tools to assess the extent of tumors, lymph nodal involvement, and relationship to the facial nerve, and to differentiate superficial from deep lobe tumors^[4]. FNAC forms the cornerstone for the cytological diagnosis of parotid tumors and has high sensitivity and specificity^[6].

Surgery is the mainstay of treatment for parotid tumors^[7]. Dissection in the proximity of the facial nerve is a major challenge, hence total parotidectomy puts the facial nerve at much greater risk compared to superficial parotidectomy^[9].

Case Report

A 30-year lady presented to our hospital with complaints of a slow-growing swelling in front, below, and behind the right ear lobule for one year. There was no history of trauma, fever, pain, & discharge, and no symptoms suggestive of facial nerve palsy. Physical examination revealed a single 4×3cms, vertically oval, firm, non-tender, freely mobile swelling in the right parotid region. The deep lobe of the parotid gland was not palpable. Ultrasonography revealed well defined hypoechoic lesion in the superficial lobe of the parotid gland, with possible benign etiology- Pleomorphic adenoma. USG guided FNAC from the swelling showed features of Pleomorphic adenoma. In the course of the planned procedure of superficial parotidectomy, the facial nerve trunk was identified and dissected distally to identify its upper & lower divisions and their branches. A formal superficial parotidectomy was done and the specimen was essentially normal. During the course of the dissection of the branches of upper division, a deep lobe tumor of 3×3 cms was identified over which the upper division branches were traversing. The deep lobe of the parotid along with the tumor was excised preserving all the branches of both the divisions of facial nerve, hence completing the procedure of total parotidectomy.

The superficial and deep lobe specimen were sent for examination in separate containers, which confirmed a normal superficial lobe & Pleomorphic adenoma of the deep lobe. Lagophthalmos in the right eye & deviation of angle of mouth to the left side was noted in the immediate postoperative period. A single dose of injectable hydrocortisone 100mg was instituted and was followed up with antibiotic & moistening eye drops, eye taping, physiotherapy, and Tab. Methylcobalamin 500 mcg once a day. A gradual improvement of lagophthalmos & deviation of angle of mouth was noted on follow up and complete recovery was seen after 3 months.

Discussion

The parotid gland is the most common site for salivary tumors. Parotid gland tumors represent approximately 2% of all head and neck tumors and approximately 80% of all salivary gland tumors [1]. 75% of such tumors are benign tumors arising in the superficial lobe of the parotid gland; the most common tumor being Pleomorphic adenoma [1]. Rarely, 10% of tumors may arise from the deep lobe of the parotid gland and present as a parapharyngeal mass [2]. Pleomorphic adenoma is generally discovered during routine physical examination, as an asymptomatic mobile, slowly progressive swelling.

Ultrasound is the initial imaging modality for salivary gland swellings. It helps to differentiate between cystic and solid lesions. Ultrasonography is the method of choice for imaging tumors originating from the superficial lobe of the major salivary glands [3]. The deep lobe of the parotid is difficult to be examined by ultrasound [3]. Imaging modalities like computed tomography (CT) and Magnetic Resonance Imaging (MRI) are essential aids in diagnosis in such cases. CT could be needed in certain cases such as deep parotid gland lesions, sialolithiasis with small stones in the ducts of salivary glands, and suspected malignant salivary gland lesions [4]. Alternatively, MRI has the superior distinction of tumor, fat, and muscle based on different signal intensities. MRI is favored on the basis of better soft tissue delineation, detailed tumor margin description, and the tumor relationship with the surrounding structures [4]. FNAC is done to avoid histological surprises. Ultrasound-guided fine needle aspiration cytology serves as the primary approach to diagnose parotid tumors [5]. The use of FNAB in conjunction with clinical and radiological evaluation may help to reduce false positive and false negative results [5]. Fine needle aspiration biopsy (FNAB) is an important diagnostic tool for evaluating parotid gland tumors [6]. In tumors greater than 2cm and extending to the deep lobe, the sensitivity of FNAB is high [6].

Surgery is the mainstay of treatment for Parotid tumors. The surgical treatment of benign tumors of the parotid gland consists of enucleation, extracapsular dissection, and superficial or total parotidectomy with preservation of the facial nerve [7]. Superficial parotidectomy is the gold standard for benign parotid tumors arising from the superficial lobe, whereas Total conservative parotidectomy is the treatment for the tumors of the deep lobe with or without superficial lobe involvement [8]. Facial nerve paralysis is a daunting potential complication of parotid surgery and is widely reported [9]. Transient paralysis of the facial nerve is seen to vary from 15% to 66% in post-primary parotid surgery, showing a greater rate in total parotidectomy as compared to superficial parotidectomy [10]. Knowledge of the key landmarks of the facial nerve trunk is essential for safe and effective surgical intervention in the region of the parotid gland.

Our case presented with a slowly enlarging swelling in the right parotid region. Clinical evaluation was followed by USG guided FNAC, which revealed a Pleomorphic adenoma of the superficial

lobe of the parotid. During superficial parotidectomy, the on table surprise of isolated involvement of the deep lobe of the parotid lead us to proceed with Total conservative parotidectomy. The patient developed transient facial nerve palsy which recovered completely after 3months with conservative measures.



Fig 1: Pre-operative picture

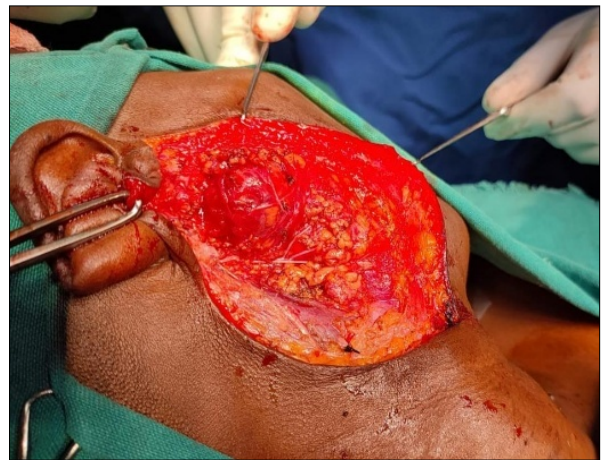


Fig 2: Intraoperative picture after excision of superficial lobe showing upper & lower divisions of the facial nerve; branches of the upper division of facial nerve traversing over the tumor of the deep lobe of the parotid.

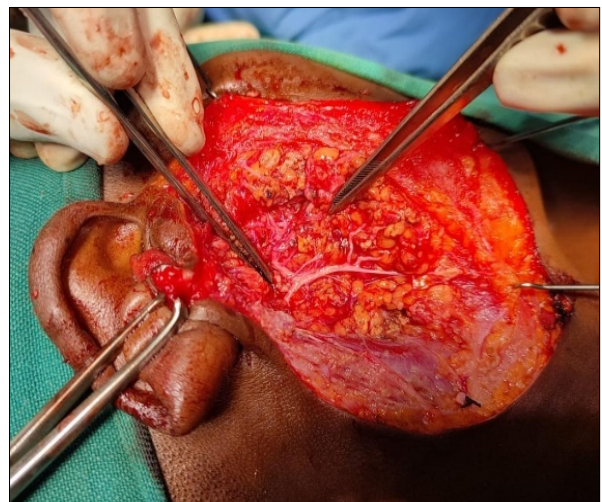


Fig 3: Facial Nerve trunk and branches of upper & lower division following total conservative parotidectomy.

Conclusion

An isolated tumor of the deep lobe of the parotid is a rare entity. A thorough clinical examination of superficial and deep lobe is mandatory in a case of parotid tumor. As the sensitivity of ultrasound in diagnosing deep lobe tumors is significantly less, CT and MRI scans are advised for suspected deep lobe tumors. FNAC is a safe and effective modality in the diagnosis and planning of appropriate surgical procedure in parotid tumors. A clear understanding of the surgical anatomy of the region is of paramount importance for dissection in such situations and meticulous surgical exercise is warranted to minimize the complications arising from the surgery, in view of the neurovascular structures in the vicinity while dealing with a parotid tumor, especially deep lobe tumor. The surgeon should be prepared, and conscious of an on table surprise while operating on a parotid tumor.

Conflict of Interest

None

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