

Deep Lobe Parotid Gland Pleomorphic Adenoma Involving The Parapharyngeal Space: A Case Report

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Abstract:

Salivary gland tumors are uncommon, accounting for between 2 to 6.5 percent of all neoplasms of the head and neck. About 70% of all salivary gland tumors arise in the parotid gland and a great number of these are benign tumors, with an average prevalence of 75%-85%. Pleomorphic adenomas are benign salivary gland tumors, which predominantly affect the superficial lobe of the parotid gland. Deep lobe parotid tumors are relatively uncommon. Most of these tumors present as external masses. They can also present in the oral cavity and oropharynx. Magnetic resonance imaging and fine needle aspiration cytology have made it possible to establish a definite diagnosis and identify the exact location of the tumor in almost all cases before surgery. Surgical excision of the tumor mass forms the mainstay of treatment, with utmost care taken to preserve the facial nerve. We report a case of 49 yrs male presenting with swelling of parotid gland involving both superficial and deep lobe. The patient was treated with total conservative parotidectomy by transcervical approach. Histopathological report was came out to be pleomorphic adenoma of parotid gland.

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I Introduction

Salivary gland tumors are uncommon, accounting for between 2 to 6.5 percent of all neoplasms of the head and neck. Pleomorphic adenoma is considered as the most common benign salivary gland neoplasm, comprising about 50%-74% of all parotid tumors [1]. Most tumours originate in the superficial lobe but, more rarely, these tumours may involve the deep lobe of the parotid gland [3], growing medially and occupying the parapharyngeal space [2]. Tumours located in the parapharyngeal space are relatively rare, and experience in diagnosis and treatment is very limited. Management of these tumours is more challenging due to the anatomical location of the parapharyngeal space: this space is situated behind the infra-temporal fossa, laterally to the nasopharynx, and before the cervical column. This space is shaped like an inverted pyramid, the base of which is formed by the base of the cranium (small portion of petrosal bone), and the apex defines the joint between the posterior belly of the digastric muscle and the greater cornu of the hyoid bone. Here, the styloid process and the associated musculature are also found, as well as the internal carotid artery, the sympathetic chain and the IX and XII cranial nerve pairs. Post-styloid masses are usually benign and correspond to neurogenic tumors, paragangliomas, vascular tumors, or aneurysms. Those located in front of the carotid artery are called prestyloid and their origin is much more varied [3]. Ultrasound (US) and computed tomography (CT) are done to determine deep lobe involvement [4]. Surgery can determine with certainty the location of the tumor. Superficial parotidectomy is the most widely accepted surgical treatment for parotid tumors involving the superficial lobe while total conservative parotidectomy is recommended for tumors involving the deep lobe.

II Case Report

A 49yrs male attended our OPD with the complaint of swelling in the right parotid region for last 2 yrs and a swelling in the oral cavity with difficulty in swallowing for last 1 year. It was insidious in onset slowly growing. There was no history of weight loss, fever, bleeding from nose or symptoms like earache.

On physical examination external mass was around 5×5 cm in size, smooth, globular, firm swelling with no tenderness and skin overlying was normal. There was no palpable neck node in the neck. On oral cavity examination smooth mass was seen which pushed the right tonsil and soft palate medially and on bimanual palpation the mass was found to be a single mass. All the cranial nerves were found to be intact. On CT scan of oral cavity and neck there is a large predominantly hypodense mass in the deep lobe of the right parotid gland traversing through the stylo-mandibular tunnel, involving the masticator space, ipsilateral parapharyngeal space. The superficial lobe of right parotid gland is compressed and appears involved. The lesion measures

approximately 10x4 cm in size. Fine needle aspiration cytology was useful in the diagnosis showing pleomorphic adenoma.

Based on CT scan and FNAC findings total conservative parotidectomy by transcervical approach was planned. The patient was put under GA, modified Blairs incision was given, greater auricular nerve was sacrificed. First superficial parotidectomy was done as usual delineating the branches of Facial nerve. Right submandibular gland was excised to get access to the tumor. Then after mobilizing the facial nerve branches tumor was released from the surrounding tissue with finger dissection and tumor was delivered. Pharyngeal wall was intact. Only intra-operative problem was bleeding which was controlled by ligature. Skin sutures were removed on 7th post op day. Histological examination revealed a pleomorphic adenoma of the parotid gland. After a few days, the patient was discharged with a light and temporary deficit of the marginal mandibular nerve.



Fig-Parotid swelling (external part)



Fig-Deep lobe of parotid (intraoral part)

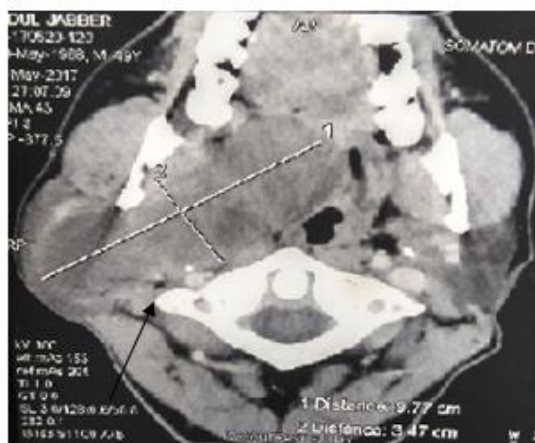


Fig-CT scan(axial cut) showing extension of mass Fig- facial nerve trunk and its branches

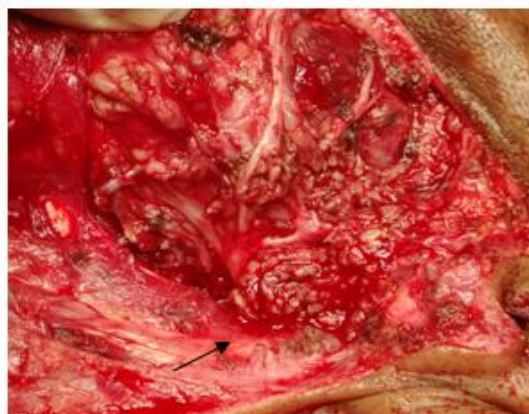




Fig-post of stitched wound

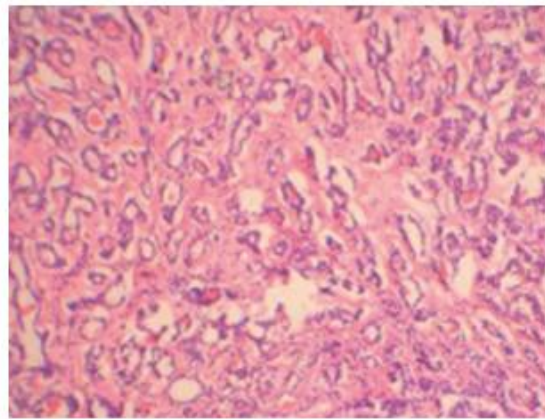


Fig-microscopic picture of pleomorphic adenoma

III Discussion

Pleomorphic adenoma is the most frequent parotid gland tumour, presenting high rate of recurrence even if it resembles a benign neoplasm. Due to the few symptoms complained of by the patient and the possibility of extension into a hidden site, such as the parapharyngeal space, they can grow for a long time before being diagnosed, and the potential risk of malignant transformation increases over the years with an incidence of 1-7% [5]. Detecting whether the tumor is in the superficial or deep lobe is helpful for preoperative planning by allowing the surgeon to determine the optimal surgical approach and to appropriately counsel the patient. This information directly impacts the surgical approach of parotid neoplasms. In addition, patients should be informed of the risk to the facial nerve during surgery, since lesions in the deep or both lobes require more manipulation and possible injury of the facial nerve. Due to the significant morbidity associated with facial nerve damage, it is appropriate to provide patients with the best preoperative information possible. Diagnostic imaging, such as computed tomography (CT) or MRI, are mandatory: MRI is preferred, on account of its better definition of soft tissue, and provides precise information concerning tumour margins as well as the relationship with the surrounding structures. CT assessment of the deep lobe is comparatively easier. Deep lobe is visualised in a CT as part of the parotid located deep to the Retromandibular vein. Study done by Margarida Maria et al reports the sensitivity of CT to be close to 90% in detecting deep lobe involvement Using the Stensen's duct, visualized by CT sialography, is said to be as accurate in differentiating deep lobe from superficial lobe as Retromandibular vein[6,7,8,]. FNAC is a reliable procedure that can guide the surgeon and be useful in choosing the right surgical approach [9,10], even though it would not be the first choice diagnostic tool, but it should be performed following diagnostic imaging in order to exclude a vascular lesion. Depending upon the location of the lesion, it can be performed intra-orally or percutaneously. The elective treatment of parapharyngeal space tumours is surgery. Many different approaches have been described in the literature [11-17]. All Authors agree on the need to perform surgery requiring adequate exposure to identify and protect vital structures and ensure complete removal.

IV Conclusion:

Parotid tumors though rare, require a definite diagnostic plan for its proper management. Playing an important role in the management of parotid tumors, is the assessment of superficial and deep lobe involvement. USG should be considered as the first line imaging modality in detecting parotid tumors. CT neck should be considered as a viable option to rule out deep lobe involvement. Identifying deep lobe involvement plays an important role in the preoperative planning of surgery and can help in reducing perioperative complications.

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