

Superficial Parotidectomy for Parotid Tumor

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Abstract

A 36 year old female patient presented with a painless, solitary, firm, mobile, and slow growing tumor in the left parotid region which was treated with ante grade superficial parotidectomy. Post operative recovery was uneventful with no defect in facial nerve function. The histopathological report was pleomorphic adenoma which is the most common benign parotid tumor.

Keywords: Facial nerve; Parotid tumor; Pleomorphic adenoma; Superficial parotidectomy.

Introduction

Parotid gland tumors account for less than 3% of Head and Neck neoplasms. Pleomorphic adenoma is the most common variant which accounts for 60 to 80% of parotid tumors.[1,2] The treatment of choice for pleomorphic adenoma is superficial parotidectomy. It is essential to preserve the facial nerve by its identification and careful dissection.

The role of superficial parotidectomy by ante grade method i.e. dissecting main trunk of facial nerve first, is a preferred technique than retrograde way and has become widely accepted for parotid tumors with excellent results.

Parotid gland tumor comprises of benign and malignant both variants reflecting heterogeneous cell populations. Good surgical technique and thorough knowledge of facial nerve anatomy is

mandatory while operating on parotid gland tumors to prevent neural damage.

Case Report

A 36 year old female patient was reported with chief complaint of a slow growing painless mass in the left parotid region below ear for one year duration.

Her medical history was noncontributory. Clinically there was two to three cm sized mass in the lower pole of parotid region. It was firm, nontender, mobile and well circumscribed with smooth surface. The skin was not tethered to it. There was no symptom suggestive of facial nerve involvement.

The following tests were performed to assess the tumor

1. Bimanual clinical assessment of parotid tumor
2. Facial nerve function examination
3. Cervical lymph node status-not palpable
4. Fine needle aspiration cytology- showed no malignant cells.[3,4]
5. Ultrasonography- Tumor was arising from lower pole of parotid, 3x2 cm in size, and confined to superficial lobe

Thus tumor was arising from lower pole of parotid, 3x2 cm in size and benign in nature.

The patient was operated by superficial parotidectomy. The tumor was 2x3 cm in size and well encapsulated, grey white in color .On histopathological examination it revealed typical features of pleomorphic adenoma showing islands and strands of epithelium in a myxoid stroma.

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Figure 1: Patient's photograph with Parotid tumor



No complications were observed after one year of follow up.

Superficial Parotidectomy Technique

Pre auricular lazy S incision was taken and the flaps were raised to identify sternocleidomastoid & posterior belly of diagastric and external auditory meatus is palpated.

Posteriorly medial border of sternocleidomastoid dissected to reflect parotid away from it. Pled-lets swabs soaked in adrenaline are helpful in controlling oozing:

Figure 2: H and E stained section showing features of Pleomorphic adenoma with epithelial cells in chondromyxoid stroma

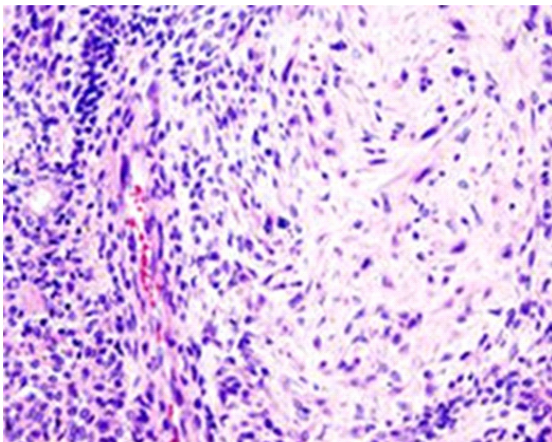


Figure 3: Lazy S Incision



Now just below external auditory canal is temporoparotid fascia which was divided with bipolar cautery and mosquito forceps. Below this fascia lies the trunk of facial nerve. Dissection of Faciovenous Plane of Patey and identification of Facial nerve at tragal cartilage are the main key part of surgery.

Through the trifurcation of Strenocleidomastoid, posterior Belly Of Diagastric muscle and external acoustic meatus the facial nerve emerges out as a single trunk having length of 2 mm and divides into 2 main branches named 1] Zygomaticotemporal and 2] cervicofacial to supply the entire face.[5,6,7] The ophthalmic branches and temporal branches are

Figure 4: Tumor displacing Facial Nerve upwards

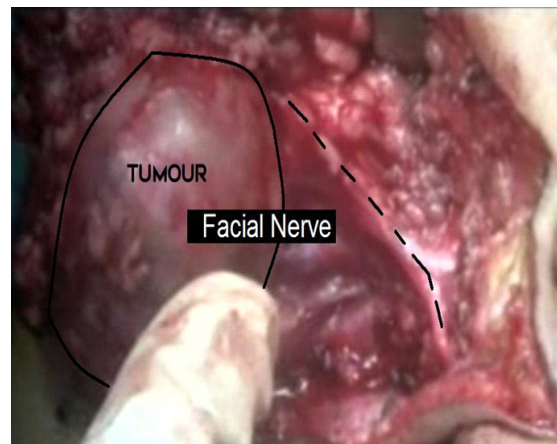


Figure 5: Gross Parotid Tumor

most important to prevent exposure keratitis while Rima Mandibularis to prevent lower lip deformity.[8,9,10,11]

By passing mosquito forceps above facial nerve plane and below the parotid gland, divide parotid tissue with bipolar cautery [Vallylab] so as to expose all terminal branches, and main trunk of facial nerve.[9,10,11]

Usually mixed parotid tumor lies in between this nerve bifurcation but lower pole parotid tumor can displace or stretch the cervicofacial branch upwards.

Thus the entire parotid tumor with cuff of normal parotid gland is removed with intact capsule without damaging facial nerve. No loop, microscope or nerve stimulator was used.

Figure 6: Intact Facial Nerve after removal of tumor

Postoperatively romovac suction drain was removed within 48 hours and stitches after 10th day.

Discussion

Parotid tumors account for 3% of all head and neck neoplasms.[1,2]

Pleomorphic adenoma is the most common benign tumor arising from lower pole of parotid or retro mandibular region usually around 3rd to 4th decade.

It presents as smooth, slow growing, and well circumscribed, mobile tumor without facial nerve palsy.[7,8,9] Rapid growth with facial nerve palsy indicates malignant transformation.

The term pleomorphic indicates wide diversity in histology and has 3 components- 1] epithelial-from duct cells 2] myoepithelial cells 3] stromal-myxoid or chondroid stroma and the tumor has pseudo capsule.

Thus 80%of parotid tumors are benign with most common type being pleomorphic adenoma/mixed parotid tumor which is a wolf in sheep's clothing.[2,20] Because on histopathology, pleomorphic adenomas have focally very thin capsules, 50% may not have true capsule, 80% have pseudopodia like extensions and satellite nodules, 75% have myxoid (stroma rich) subtype.[20]

So there are very high chances of tumor spillage and residual satellite nodules after enucleation or extra capsular dissection leading to recurrence of the tumor up to 20 to 45%.[12, 13,14,19] Recurrence is more malignant than previous variant which is a disaster. Second surgery is more difficult to perform due to fibrosis around facial nerve. So the minimum surgery is superficial parotidectomy.[16,17,18]

In parotid tumors there is no role for incisional or excisional biopsy due to high chances of tumor cells implantation and local recurrence. Frozen section is not acceptable due to unreliability in diagnosis.[13,14,15]

Thus the treatment of pleomorphic adenoma is surgical resection with either superficial or total parotidectomy out of which superficial

parotidectomy is usually safe and adequate.[17, 19,20]

The facial nerve should be preserved, so its identification and careful dissection is of paramount importance.

There are two basic techniques for the identification and dissection of the facial nerve. One is the forward or ante grade dissection, where the approach to the main trunk is taken as an early step, tracing it to the bifurcation and peripheral branches.

The other technique is the retrograde dissection, where the peripheral branches are identified first, like Rima Mandibularis nerve, and traced proximally to the bifurcation or main trunk.

In our study there was no morbidity or major complications. Numbness of ear lobule was due to division of greater auricular nerve and was the most common complication. Other complications like salivary fistula, pain, hemorrhage and transient facial nerve palsy did not occur. There was no permanent facial nerve palsy or local recurrence in follow up.

Conclusion

Pleomorphic adenomas are slow growing tumors confined mainly to superficial lobe without facial nerve palsy. Superficial Parotidectomy by ante grade method can be performed safely and is a minimal required surgery for pleomorphic adenoma.[12,16,17,20]

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