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Case Report

A case series of superficial parotidectomy under local anesthesia

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ABSTRACT

Superficial parotidectomy is the biopsy procedure of choice for all parotid neoplasm's as well as therapeutic choice for small low-grade malignancies. The key to successful parotid surgery is identification of the facial nerve. It is usually done under general anesthesia (GA).The main focus in this procedure is to remove entire superficial parotid gland along with a disease and at the same time preventing any iatrogenic injury to facial nerve and its peripheral branches which supplies over the face. We present three cases of superficial parotidectomies done under local anesthesia technique. The objectives of these reports are to discuss the clinical presentation, diagnosis and management of these growths surgically under local as an alternative method or when it is desired under some special circumstances and the merits. This technique may avoid the use of facial nerve monitor.

Keywords: Superficial parotidectomy, Pleomorphic adenoma, Warthin's tumor, Local anesthesia

INTRODUCTION

Primary parotid malignancies occur infrequently. They represent from 1% to 3% of all head and neck malignancies. Because there is a wide variability in the clinical behavior and presentation of these tumors, the surgical management must be individualized and dictated by tumor location, histological grade, extent, and spread. The surgeon's armamentarium includes superficial parotidectomy, total conservative parotidectomy, and radical parotidectomy, palliative biopsy only, and neck dissection.

CASE REPORT

We present three cases of superficial parotidectomy done under LA. All three had a history of hypertension and they were taking antihypertensive drugs. Two cases had unstable high blood pressure on preoperative evaluation in spite of medication thus the decision was taken to perform the surgery under LA. All three cases were females.

First case was a 61 year lady with history of swelling on left post auricular region for last 6 months. Physical examination revealed a 2.5 cm soft globular, cystic, non-fluctuant, mildly tender and mobile swelling. Fine Needle Aspiration Cytology (FNAC) first showed a cysticercosis lesion of the post auricular skin and following this she took three weeks course of albendazole without any relief. The FNAC was repeated and this time it showed adenoma of parotid gland. It corroborated with the findings of USG and CECT findings which showed 2 cm mass occupying in left superficial parotid gland without any neck nodes (Figure 1). HPE of specimen showed inflammatory salivary gland tissue.

Second case was a 44 year old lady complaining of Right sided post auricular mass just below mastoid tip. The swelling was 2 cm oval, firm, non-tender, non-fluctuant, slowly progressive and mobile swelling for last 3 years. The FNAC showed pleomorphic adenoma of parotid gland. CECT findings showed 1.5 cm non enhancing mass in right superficial parotid gland without any neck nodes (Figure 2). HPE showed parotid pleomorphic adenoma.

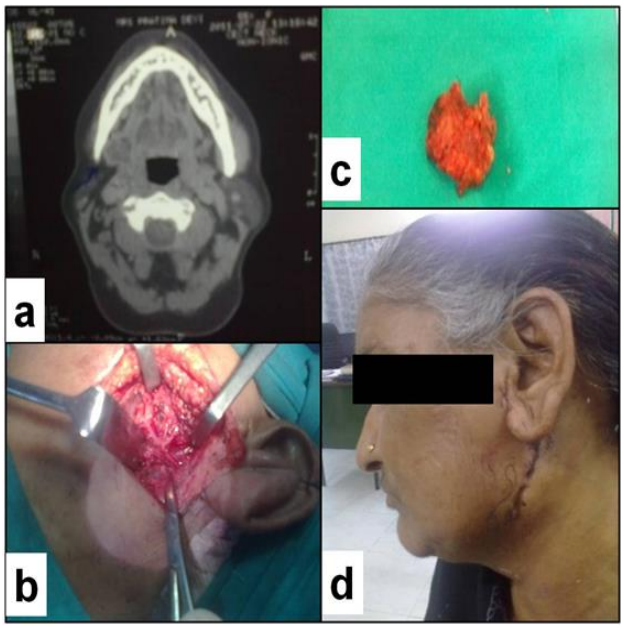

Figure 1: a) CECT showing 2 cm mass occupying in left superficial parotid gland b) Surgical field during fine dissection of facial nerve c) Excised specimen d) Post-operative wound.

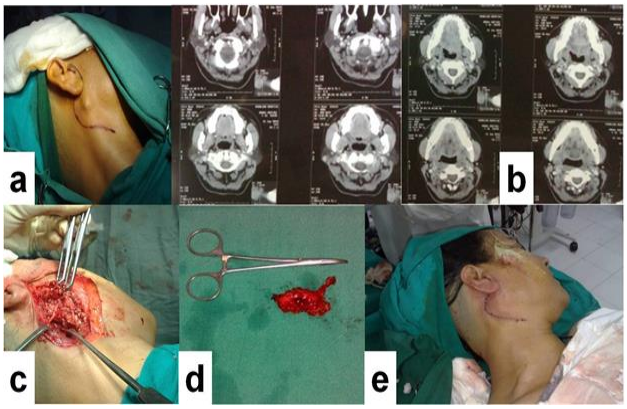

Figure 2: a) Pre-operative photo b) CECT showing 1.5 cm non-enhancing mass in right superficial parotid gland c) Surgical field during fine dissection of facial nerve d) Excised specimen e) Post-operative wound.

Third case was a 43 year old lady complaining of swelling just below angle of mandible left side which was gradually increasing for 3 months, with no relation with meals. The swelling was 3.5 cm oval, firm, non-tender, non-fluctuant, mobile swelling and was not ballottable. Stensen's and Warthin's duct openings were normal. The FNAC showed pleomorphic adenoma of parotid gland. USG and CECT findings showed 3 cm mass in left superficial parotid gland and its tail without any neck nodes. There was incidental nodule present on her left thyroid gland (Figure 3). HPE showed Warthin's tumor.

All three cases underwent superficial transverse Parotidectomy, which was performed under local anesthesia in a classical way with a preauricular incision curving softly below pinna and extending to neck crease. The subcutaneous flaps were raised using monopolar cautery and mastoid tip, tragal pointer, sternomastoid and posterior belly of digastric were identified. The main trunk of facial nerve was identified typically between the angle made by anterosuperior border of sternomastoid and posterior belly of digastric at mastoid tip inferomedially to tragal pointer. All peripheral branches of facial nerve were preserved and mass along with superficial gland taken out. The other important structures like buccal duct, retromandibular vein and external carotid artery were also preserved. After thorough wash the wound was closed subcutaneously and drain was put for one day .The recovery was smooth without any facial paresis or complications.

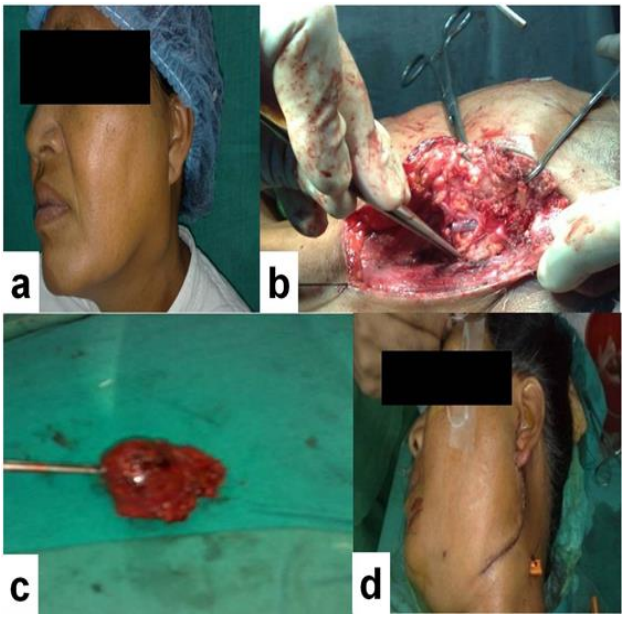

Figure 3: a) Pre-operative photo b) Surgical field during fine dissection of facial nerve c) Excised specimen d) Post-operative wound.

Technique of local anesthesia used

The external bony landmark which is the sigmoid notch of the zygomatic arch was palpated. Under aseptic technique, after local infiltration with lidocaine 1% at the midpoint of the zygomatic arch, a 16-gauge IV cannula was inserted at the midpoint of the lower margin of the zygomatic arch and advanced perpendicularly until it contacted the lateral pterygoid plate. For maxillary nerve block, the cannula was then withdrawn slightly and advanced cephaloanteriorly 1 cm to enter the pterygopalatine fossa pointed toward the apex of the opposite orbit. The stylet was removed and an 18-gauge epidural catheter (Portex) was advanced 0.5 cm past the cannula tip. The cannula was removed, and the catheter was anchored. After negative aspiration, a 2-ml test dose of lidocaine 2% with epinephrine (1 in 200000) was injected. As there was no evidence of intravascular injection, 5 ml of 0.25% bupivacaine was subsequently

administered through the catheter. To provide a mandibular nerve block, a 16-gauge IV cannula was inserted to contact the lateral pterygoid plate. The depth of the pterygoid plate was noted, and the cannula was withdrawn and redirected slightly posteriorly to a position just behind the posterior border of the lateral pterygoid plate. The cannula was advanced by a distance of 5 mm further, the stylet was removed, and an 18-gauge catheter was inserted 1.0 cm past the cannula tip and anchored. Injection of bupivacaine 0.25% 6 ml was given through the catheter after a negative test dose. The surgical field was evaluated for satisfactory anesthesia by pinprick. The patient was sedated with propofol 70 mg IV bolus followed by an infusion at a rate of 50 mg/kg/min. Surgery was allowed to proceed. The patient's vital signs remained normal throughout surgery. The patient was sedated but responding to verbal commands. The propofol infusion was stopped at the end of the surgery, the patient awoke completely pain-free.

DISCUSSION

Parotidectomy is generally indicated for histopathological diagnosis of a parotid mass. Parotid masses are generally benign, the incidence of which is around 2.4 per 100000.[1]

Extent of surgery is largely dictated by tumor size and degree of local extension. Yet, facial nerve and its peripheral branches are at risk during superficial Parotidectomy surgery under GA. Facial nerve injury is one of the most morbid complications of parotid gland surgery. 30-65% patients suffer from transient facial nerve paralysis and 3-6% has permanent dysfunction of the facial nerve following total superficial parotidectomy.[2] Preservation of facial nerve peripheral branches requires high surgical skills and it can be done by using nerve stimulator which is costlier and usually available at tertiary care hospitals.

Local or regional anesthesia is a novice technique which can be used alternatively. Under LA, patient complaints of pain and discomfort if dissection involves facial nerve sheath or its peripheral branches thus helping in its identification and prevention of iatrogenic nerve injury. Local anesthetic agents preferentially block the smaller pain and autonomic fibers. This leaves the larger motor, touch and proprioception fibers reasonably unaffected. This helps in assessment of facial nerve function throughout the surgery.[3]

LA technique can be really helpful if patient is at risk during general anesthesia like in our cases of uncontrolled high BP. It also had an advantage of smooth recovery postoperatively with less usage of narcotics and other drugs with less pain and complications leading to shorter hospital stay with early healing.

There are reports of using a mixture of bupivacaine and lidocaine for local anesthesia.[4] Bupivacaine is four times more potent than lidocaine and has a longer duration of action of 6 hours. However, lidocaine has a faster onset of action within 3-5 minutes. Offering a mixture of both to the patient provides a quick onset with a larger duration of action, adequate for the surgery. Recently parotidectomy under LA has come in vogue.[5-7] A conscious patient allows identification and testing integrity of the facial nerve and its branches without using a nerve stimulator. Also, drug toxicity is negligible because of the small dose of local anesthetic agent required.[8]

CONCLUSION

In a nutshell, parotidectomy under LA is an alternative which can be considered in patients who are at high risk during GA. It gives the advantage as patient is conscious and awake thus maintaining good airway. It may help in preventing damage to vital nerves as patient points out the discomfort if dissection is too near to these nerves. It uses lesser drugs like narcotics and thus preventing drugs related complications. It is less expensive and patient can eat immediately after surgery leading to faster and smooth recovery with less nursing care and early discharge. However, specialized skills and a good team is required for such surgeries. This option should be explored with further study comparing it with surgeries done under general anesthesia.

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