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Original Research Article

Study of Facial Nerve Palsy following Superficial Parotidectomy for Pleomorphic Adenoma: 25 Cases

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Abstract: Facial palsy is common complication following superficial parotidectomy for benign parotid tumour. We have observed this complication in series of 25 cases. We found that 12 % patients developed temporary facial weakness which disappeared after one month of treatment. 4% patients developed permanent facial weakness which is little high in comparison to different series compared. This can be avoided by using nerve stimulator while dissecting by inexperienced surgeon.
Keywords: Pleomorphic adenoma, superficial parotidectomy (SP), Facial Nerve.

INTRODUCTION:

Pleomorphic adenomas are the common benign tumors of the salivary gland, comprising 85% of all salivary gland neoplasms and 60% of the benign tumors of the parotid gland [1–3]. The surgical management of a pleomorphic adenoma has been the subject of controversy for many years, mainly because of the risks of facial nerve injury, capsular rupture, and recurrence [4–6]. A superficial parotidectomy (SP) involves the resection of a considerable amount of normal parotid tissue with dissection of the facial nerve, causing facial nerve injury [7]. The purpose of this study is to observe Facial nerve injury in 25 cases of pleomorphic adenoma which underwent superficial parotidectomy.

AIMS AND OBJECTIVES:

To observe incidence of facial nerve injury during superficial parotidectomy in 25 diagnosed cases of pleomorphic adenoma.

MATERIALS & METHODS:

25 diagnosed cases of both sex & above 20yrs of age of pleomorphic adenoma were subjected to superficial parotidectomy after proper investigations and followed post operatively for facial nerve weakness / palsy. All patients were subjected to USG of parotid swelling revealed typically hypo echoic lesion of size 2.5 cm to 4 cm. USG guided FNAC has been done and diagnosis of pleomorphic adenoma is confirmed. After all basic investigations, pre-anesthetic fitness and consent; patient were underwent superficial parotidectomy.

Surgical steps followed:

Radon's incision, superficial cervicofacial flaps raised by monitoring the face for 7 muscle contraction to avoid facial nerve injury. Traction suture in the subcutaneous tissue of the ear lobule as well as securing the anterior based skin flap to the drapes applied. The anterior border of sternocleidomastoid muscle skeletonised the external jugular vein divided. Greater auricular nerve divided as it crosses sternocleidomastoid muscle posterior belly of the digastric muscle identified and skeletonised. Cartilage of the external auditory canal dissected up to the conley's pointer. Facial nerve identified by: conley's pointer (nerve 1 cm deep and inferior). (Figure1).

The facial nerve trunk located by blunt dissection with a fine haemostat. Dissection done directly on the nerve & its branches by Tunneling and spreading the overlying parotid tissue, and the parotid tissue overlying the nerve divided. Dissection proceeded along the trunk to the pes anserinus early branching from the trunk excluded by dissecting back towards the stylomastoid foramen. Parotid fascia divided superiorly and inferiorly to release the parotid posteriorly and to permit anterior mobilisation of the gland/tumour.

Dissection done anterior to the branches of facial nerve (Figure2). Superficial parotidectomy

completed. A no 10 suction drain kept in subfascial plane. Postoperative period patient were observed for facial weakness.

Fig- 1:

Fig-2:

RESULTS

In our study 25 patients were studied, out of them 10 were males & 15 were females (Table 1) .

Table 1: Sex Distribution

Sex	No	Percentage
Male	10	40%
Female	15	60%

Mean age was 43.76years, majority of patients were between 31-40 years of age group(Table 2) .

Table 2: Age Distribution

Age Distribution	Male	Female
21-30 Years	0	3
31-40 Years	6	2
41-50 Years	1	5
51-60 Years	2	4
61-70 Years	1	1

Table 3: Cases Distribution With Respect To facial Nerve Status

Facial weakness status	No	Percentage
Without Facial Weakness	21	84%
Temporary Facial Weakness	3	12%
Permnant Facial Weakness	1	4%

Average time of superficial paotidectomy was 102.6 minutes. Out of 25 cases, 21 cases (84%) have not developed facial nerve weakness, 3 cases (12%) developed temporary facial wekness which was treated by physiotherapy and patient recovered within a month. 1 case (4%) developed permanent facial weakness. The main injuries occurred in the mandibular branch. In all patients, the postoperative course was normal without locoregional complications (edema and/or surgical site bleeding) or systemic complications (fever, etc.), and all the patients were discharged after an average of five days from surgery. Histological examination of the surgical specimen agreed with the FNAC in all patients, confirming the diagnosis of pleomorphic adenoma. The patients were followed once a month for three consecutive months in postoperative period.

DISCUSSION

In the study done by Papadogeorgakis N [1]56 patients were studied out of which 101 patients were operated by superficial parotidectomy and 55 patients were undergone enucleation of adenoma while in our study all patients were operated by superficial parotidectomy.

In the study done by Wit R L, Rejto [8] of 924 patients found that temporary facial weakness was present in 17.9% patients and permanent facial weakness was present in 0.2%; it was a retrospective

study in which all surgeries were done by experienced surgeons while our study was prospective and all surgeries were done by inexperienced surgeon under expert guidance because of which percentage of permanent facial weakness was more.

In the study done by Maahs GS *et al.;* [9] percentage of temporary facial weakness was 26% while in our study its 12%. This difference is because Maahs GS *et al.;* included benign as well as malignant tumours of parotid in their study while in present study we have only studied diagnosed cases of pleomorphic adenoma.

Maria Giulia Cristofaro *et al.;* [10] treated 45 patients by superficial paroditectomy. In their study the common trunk of the facial nerve was identified, isolated, and controlled by continuous facial nerve monitoring with a neurostimulator (800 Neurosign nerve monitor equipment). While in our study no equipment was used for facial nerve monitoring which was responsible for high percentage of permanent facial weakness (4%) as compared to Maria Giulia Cristofaro *et al.;* [10] study (2.2%)

Average % of temporary facial weakness among above studies was 22.63% while in our study its 12%. Average % of permanent facial weakness among above studies was 1.18% while in our study its 4%.

Facial weakness status	Papadogeorgak N[1].	With R L, Rejto[8]	Maahs GS et al.[9]	Maria Giulia Cristofaro et al[10]	Ou XR ,Su HB[11]	Francisco J. García-Purriños[12]	Our study
No of patients	156	924	154	45	99	57	25
Without Facial Weakness	85%	81%	74%	71.8%	60.6%	73.8%	84%
Temporary Facial Weakness	15%	17.9%	26%	26%	36.4%	24.5%	12%
Permanat Facial Weakness	0%	0.2%	0%	2.2%	3%	1.7%	4%

CONCLUSION

The incidence of facial nerve injury by superfial parotidectomy in our series is quite high in comparison to compared series. This can be avoided by using neurostimulator for facial nerve monitoring during surgery by inexperienced surgeon.

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