ORIGINAL ARTICLE

Outcome of Parotid Gland Surgery in Terms of Complications Especially the Facial nerve Palsy at Mayo Hospital, Lahore

Muhammad Shahid Farooq,[1] Rabia Altaf,[2] Ahmed Uzair Qureshi,[3] Fatima Naumeri,[4] Abrar Ashraf Ali[5]

Abstract

Objectives: Parotid gland surgery is the second most frequently performed endocrine surgery at our hospital after thyroid surgery. The objectives of our study was to see the incidence of the complications in patients especially the facial nerve weakness and palsy with respect to gland size.

Methods: This is a descriptive study conducted retrospectively at South Surgical Unit, Mayo Hospital, Lahore. We operated upon 22 patients for parotid gland tumors with varying gland sizes.

Results: Our study shows that 16 out of 22 patients were males and 6 were females. Around 45.5% of the patients had tumor between 3-4 cm and had the most complications and in the second group of patients 27.3% (6 patients) had complications and tumor size was more than 4 cm. The patients who had tumor size less than 3 cm virtually having negligible complications.

Conclusion: The size of the parotid gland is an important predictive factor for the occurrence of complications in the parotid surgery.

Keywords: *parotid gland, complications, size of tumor, weakness.*

Introduction

Salivary glands are second to thyroid gland patients which make major bulk of our endocrine workload here at Mayo Hospital. Among the salivary glands parotid is the commonest cause of hospital visit of our population. Most common cause of swelling in the parotid gland remains the pleomorphic adenoma[(1)] and carcinoma hold the next place. Other diseases of parotid gland like tuber-culosis are also present and we occasionally see a patient with uncommon conditions. The commonest of the benign conditions is stone disease[(2)] and here again the parotid gland follows submandibular salivary glands. Surgery on parotid glands is a demanding task and requires manual dexterity, gentleness and a huge respect to the tissues. All of these factors combine to give a favourable surgical outcome to these patients.

Even in recent times due to technical advancement in the field of surgery and availability of various energy devices and nerve stimulators the incidence of complications associated with parotid surgery remain quite remain high[(3)] . Transient facial nerve weakness is the most frequently encountered complication after parotid surgery whether performed for benign or malignant pathology[(4)]. The other common complications are hematoma, infection, and tinnitus and Frey syndrome.

The objective of this very study was to look for the incidence of complication in our patients espe-

1. Assistant Professor of Surgery, KEMU/ Mayo Hospital, Lahore
2. Demonstrator, Department of Pathology, King Edward Medical University, Lahore
3. Assistant Professor of Surgery, KEMU/ Mayo Hospital, Lahore
4. Assistant Professor of Paeds Surgery, KEMU/ Mayo Hospital, Lahore
5. Professor of Surgery, KEMU/ Mayo Hospital, Lahore

Corresponding Author: Dr. Muhammad Shahid Farooq
Assistant Professor of Surgery, KEMU/ Mayo Hospital, Lahore
E-mail: drmsf@hotmail.com

Received 08-04-2017, Accepted 20-09-2017

cially the facial nerve palsy so that we may modify our surgical technique and improve our selection of patients.

Patients and Methods

This retrospective descriptive study was conducted at South Surgical Unit, Mayo Hospital from April 2014 to October 2016. It involved the analysis of record of the patient who underwent parotid surgery during the said period. It comprised 22 patients who underwent surgery for tumour of the parotid gland. After obtaining the informed consent and explaining about the possible complication, the patients were operated on our elective operative lists by either the faculty members, senior registrars or the senior residents. The size of the gland was measured pre-operatively by measuring tape and later was confirmed on table by the operating surgeons. The data was collected by reviewing their records and entering into a proforma. Statistical analysis of the data was done by using the SPSS version 20.

Table 1: *Type of Procedure*

Procedure	Frequency	Percentage
superficial parotidectomy	20	90.9
total parotidectomy	1	4.5
radical parotidectomy	1	4.5
Total	22	100.0

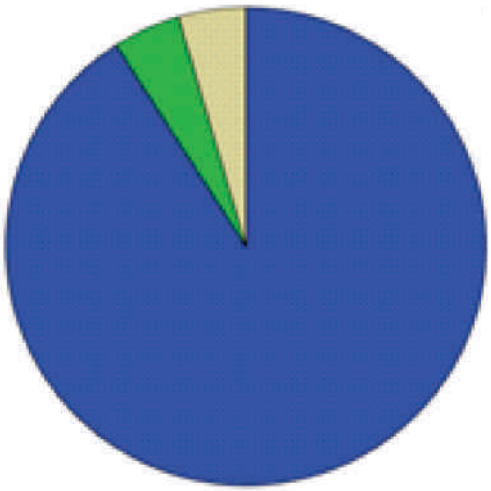

Figure 1: Type of Procedure

Results

22 patients underwent parotid surgery with 20 patients having superficial parotidectomy, 1 had total parotidectomy and 1 patient had radical parotidectomy (Tab.1).

The mean age of our patient population was 41±15.3 years and the range was between 12-80 years. Out of these 16(72.7%) were male patients and 6(27.3%) were female patients (Tab.2).

As far as side of the tumor is concerned here our patients have equal incidence of right or left side. The size of the tumor in most of the cases was between 3-4 cm and it was in 10(45.5%) of the patients. The second larger group were the patients who had tumor size more than 5 cm (Tab.3).

All of these patients had FNAC done before the surgery and the most common pathology was pleomorphic adenoma with benign epithelial and acinar cells second the list. The histopathology reports again confirmed the pleomorphic adenoma being the commonest pathology. When we talk of complications in our patient population, weakness of the ipsilateral facial nerve, tinnitus and hematoma had an equal incidence of 4.5% each. Some times this was associated with the deviation of the angle of mouth and the incidence of more than one complication noteworthy neuroparaxia and deviation of angle of mouth was more prevalent

Table 2: *Sex distribution of patients*

Gender	Frequency	Percent
male	16	72.7
female	6	27.3
Total	22	100.0

Table 3: *Size of the tumor*

Size of the gland	Number	Percent
up to 2.9 cm	5	22.7
3.0-4.9 cm	10	45.5
5.0-6.0 cm	6	27.3
more than 6	1	4.5
Total	22	100.0

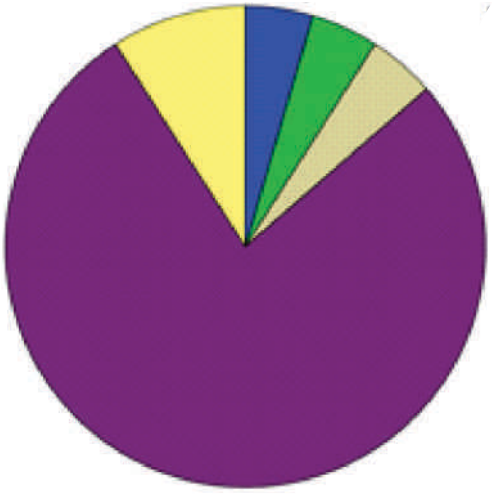

Figure 2: *frequency of complications*

around(9.09%) of the cases. Majority (77.2%) of our patients recovered well without any complications and were discharged home the next day.

Since most of our patients fall in the size range of 3-4cm and we have seen maximum number of complication in the same group around 13.6%.

Discussion

We analysed the record of the patients who underwent parotid surgery for the said duration in our hospital and these were 22 patients in total. Superficial conservative parotid gland removal was done in 20 patients and other two patients had total and radical surgery performed on them. Our objective was to find out the incidence of complications in our group of patients keeping in view the size of tumors. The international literature shows that the occurrence of temporary facial weakness varies between 15% to 66%[3] but here in our cohort only one of our patients had weakness of the facial nerve and it was associated with 3-4 cm size of the tumor whereas in 2 of the patients the facial palsy was associated either with deviation of angle of mouth or tinnitus. Major group of patients (77.2%) who also underwent superficial conservative procedure had no complications[5].

Table 4: *Complications with size of tumor*

Complications	Up-to 2.9 cm	3.0 -4.9 cm	5.0-6.0 cm	Total
Weakness of face	0	1	0	1
Tinnitus	0	1	0	1
Hematoma	0	1	0	1
More than 1 complication	0	0	2	2
Total	0	3	2	5

Since 10 (45.5%) of our patients fall in the size category of 3-4 cm and at the same time we had maximum of complications in this group. The second most common size category was 5-6 cm of tumor and here the incidence of complication was about 9.09%. The incidence of complications especially the facial palsy was less or non-existent in our patient population. If we have a look on the literature that may suggest the relationship of parotid gland diameter with proximity to the facial nerve. Larger the size of tumor greater are the chances of the tumor capsule being in proximity to the facial nerve[6] Furthermore another brazilian study by Bittar suggests a very promising relationship of size of tumor with the incidence of complications secondary to parotid surgery . He says that if the tumor is more than 3 cm in size or more than 2cm in depth the chances of ending up in complications are high and this criteria may be used to plan a surgery in patients with parotid tumors[7]. Keeping in view the evidence available from literature and our own current experience we may say that the size of parotid gland in an important predictors of complications at parotid surgery. This will help us in planning of surgery in our forthcoming patients.

Conclusions

We may conclude that the parotid surgery is a demanding field and the size of gland is an impor-

tant predictor of the outcome of parotid surgery. Based on our findings and review of literature we can say that the surgery of parotid gland can be done safely with careful and gentle dissection keeping in mind the anatomy and size of gland.

References

1. Pinkston JA, Cole P. Incidence rates of salivary gland tumors: results from a population-based study. Otolaryngology--head and neck surgery: official journal of American Academy of Otolaryngology-Head and Neck Surg. 1999; 120(6):834-40.
2. Capaccio P, Torretta S, Ottaviani F, Sambataro G, Pignataro L. Modern management of obstructive salivary diseases. Acta Otorhinolaryngol Ital. 2007; 27(4): 61.
3. Ruohoalho J, Mäkitie AA, Aro K, Atula T, Haapaniemi A, Keski–Säntti H, et al. Complications after surgery for benign parotid gland neoplasms: A prospective cohort study. Head & neck. 2017; 39(1):170-6
4. Nouraei SA, Ismail Y, Ferguson MS, McLean NR, Milner RH, Thomson PJ, et al. Analysis of complications following surgical treatment of benign parotid disease. ANZ J surg. 2008; 78(3):134-8.
5. Chulam TC, Noronha Francisco AL, Goncalves Filho J, Pinto Alves CA, Kowalski LP. Warthin's tumour of the parotid gland: our experience. Acta otorhinolaryngologica Italica: organo ufficiale della Societa italiana di otorinolaringologia e chirurgia cervico-facciale. 2013; 33(6):393-7.
6. Domenick NA, Johnson JT. Parotid tumor size predicts proximity to the facial nerve. The Laryngoscope. 2011; 121(11):2366-70.
7. Bittar RF, Ferraro HP, Ribas MH, Lehn CN. Facial paralysis after superficial parotidectomy: analysis of possible predictors of this complication. Braz J Otorhinolaryngol. 2016;82:447-51

Conflict of Interest : None
Funding Source: None