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Original Article

Complications of Parotid Surgery – A Study of 30 Cases

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Abstract

Objectives: *To find out the complication of parotid surgery and association of nerve injury with the type of disease pathology and type of parotid surgery.*

Methods: *This cross-sectional study on 30 cases was carried out in the Department of Otolaryngology-Head & Neck Surgery, Bangabandhu Sheikh Mujib Medical University & Dhaka Medical College Hospital, Dhaka from September 2011 to September 2012. After taking history, clinical examination and investigation (FNAC, CT-scan) diagnosis was confirmed by histopathological examination.*

Results: *In this study, lowest age was 14 years and highest age 65 years, male to female ration was 1.1:1. 83.33% cases were benign and 16.67% cases were malignant. Most of benign tumors was pleomorphic adenoma (80%). 88% cases involved in superficial lobe. Temporary facial nerve paresis was the most common postoperative complication (29.97%); 6.6% cases developed permanent facial palsy and hypoesthesia of ear was 26.04%. Most patient regained normal facial nerve function within 6 months from the onset.*

Conclusion: *Marginal mandibular nerve is the most common branch of facial nerve injury.*

Key words: *Complication, Parotid surgery.*

Introduction

Salivary gland tumors are relatively uncommon, accounting for only 3% of all head & neck tumors. Parotid gland is the commonest site of neoplasm (about 75%) among the salivary glands. Of these almost 80% are benign and 80% of benign tumors are pleomorphic ademonas & 80% arise from the superficial lobe of the parotid.[1]

The treatment protocol was superficial parotidectomy for benign lesion of the superficial lobe and and total conservative parotidectomy was done in case of benign lesion of deep lobe and malignant lesion of either lobe without facial nerve involvement.[1]

The incidence of facial nerve paralysis is higher with total than superficial parotidectomy. Most at risk for injury during parotidectomy is marginal mandibular nerve. Transient facial nerve paresis generally resolved within 6 months.[2,3] Other post-operative complication

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include wound infection. Salivary gland fistula, Frey's syndrom, heamorrhage, haematoma, cosmetic deformity, numbness around the ear.

The use of modified Blair incision, preserving the great auricular nerve & normal parotid parenchyma all improved cosmetic, functional & quality of life outcomes and to prevent post-operative Frey's syndrome.[4,6]

Hypoesthesia of the great auricular nerve is a frequent consequence of parotidectomy. Ear sensation return more rapidly and more completely patients whom the posterior – branch of the great auricular nerve was preserved.[5]

Temporary facial nerve paresis, involving all or just one or two branches of the facial nerve and permanent facial paralysis have occurred respectively in 9.3-64.6% and in 0-8%.[3,7]

To reduce the post-operative complication uses harmonic scalpel, nerve monitor, microscope or loops. This operation always done by an experience surgeon and those are interest to this operation.

Methods

This cross-sectional study on 30 cases was carried out in the Department of Otolaryngology-Head & Neck Surgery, Bangabandhu Sheikh Mujib Medical University & Dhaka Medical College Hospital, Dhaka from September 2011 to September 2012. Total 30 patients randomly selected and convenient, purposive type of sampling technique was followed in this study. FNAC proved benign and malignant disease involving parotid gland all age and both sex are included in this study. Parotid swelling with facial nerve palsy excluded from this study. Data were collected by using a pre-designed data collection sheet and analysis by using standard statistical method.

Results

Table – I

Incidence of benign and malignant neoplasm among the parotid gland (n= 30)

Pattern of disease	No. of Patients	Percentage (%)
Benign	25	83.33
Malignant	05	16.67

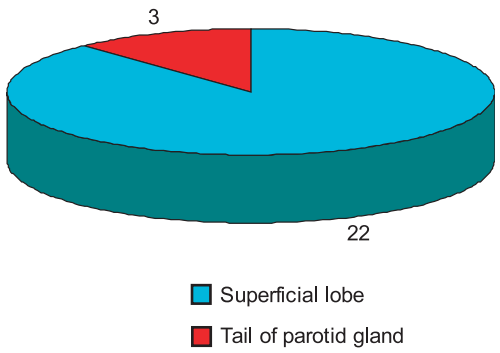

Fig.-1: *Location of benign parotid disease among the study population (n= 25)*

Table – II

Distribution of complications following surgery (n= 30)

Nature of complication	No. of Patients	Percentage (%)
Haemorrhage/ haematoma	00	00
Facial palsy	11	36.63
Temporary	9	29.97
Permanent	2	6.66
Infection	00	00
Parotid fistula	00	00
Frey's syndrome	06	20
Hypoesthesia of ear lobule	8	26.64

Table – III

Study of nerve injury after superficial parotidectomy (n= 25)

Nerve injury	No. of Patients	Percentage (%)
Facial nerve injury		
Temporary	7	28
Permanent	1	4
Hypoesthesia of GAN		
Temporary	5	20
Permanent	0	0

Table – IV

Study of nerve injury after total conservative parotidectomy (n= 5)

Nerve injury	No. of Patients	Percentage (%)
Facial nerve palsy		
Temporary	2	40
Permanent	1	20
Hypoesthesia of GAN		
Temporary	2	40
Permanent	1	20

Table – V

Different branches of facial nerve injury following surgery (n= 30)

Site	Branches	No. of patients	Percentage (%)
Single	Temporal	00	00
	Zygomatic	01	33.33
	Buccal	00	00
	Marginal mandibular	6	20
	cervical	0	0
Multiple	Marginal mandibular and zygomatic	02	6.67
All	All	2	6.67

Table – VI

Comparison of facial nerve injury between superficial parotidectomy and total conservative parotidectomy (n= 30)

Facial nerve injury	Superficial parotidectomy (n=25)	Total conservative parotidectomy (n=5)	Total
Temporary	7 (28)	2 (40)	9 (30%)
Permanent	1 (4)	1 (20)	2 (6.66%)
Total	8 (32)	3 (60)	11 (36.66%)

Discussion

Thirty (30) cases of parotid were studied with particular reference to find out the complication of parotid surgery. The age of the study subject range from 14 to 65 years, mean age was 44.1. This is consistent with the Tsai et al. 2008.[8] Male to female ration was 1.1:1. This is supported by author[8].

In cases of parotid tumors, 80-85% had benign tumor and 12% had malignant tumor.[8,11,12] In our study, 83.33% cases were benign & 16.67% cases were malignant. This result were corresponds with previous studies. In our study, 88% cases were involved the superficial lobe and 12% cases were deep lobe tumor which corresponding with other study.[11,12]

Most common benign tumor was pleomorphic adenoma 80% and 16.67% cases were malignant (mucoepidermoid carcinoma). This study was consistent with another study[1].

In our series, superficial parotidectomy was performed in 25 cases. Among this facial nerve injury was noted in 8 cases and hypoesthesia of great auricula nerve was 5 cases. Out of 8 cases, 7 (28%) cases were temporary and 1 (4%) cases was permanent in nature. On the other hand, hypoesthesia of great auricular nerve all were temporary in nature.

Total conservative parotidectomy was performed in 5 cases. Among these facial nerve injury was noted in 3 cases, 2 (40%) cases were temporary and 1 (20%) case was permanent. On the other hand, 3 cases of hypoesthesia of great auricular nerve, 2 cases were temporary and 1case was permanent in nature.

So, in this study shows that, facial nerve injury is more common in total conservative parotidectomy (60%) then superficial parotidectomy 32%. Temporary facial nerve palsy occurred in 30% cases and permanent facial palsy occurred in 6.66% cases. This result is similar to a published work.[3]

Facial nerve palsy occurred 80% cases in mucoepidermoid carcinoma and 25% cases occurred in pleomorphic adenoma. So our study shows that facial nerve injury higher in malignant cases than benign parotid disease.

The clinical incidence of Frey's syndrome after parotidectomy has been reported as high as 50%.[3,10] In this study 20% cases presented as Frey's syndrome. So the result of this series correlate with published work.

The branch of the facial nerve most at risk for injury during parotidectomy is marginal mandibular nerve.[10] In this series 20% cases have found in marginal mandibular nerve. Full recovery of facial nerve function occurred between 1 – 6 month after operation.[4] In this study majority of the patients showed significant functional recovery within 3 months and full recovery occur within 6 months of operation. This result is correlated with above study.

Conclusion

Benign and malignant parotid tumors can be diagnosed by their clinical presentation supplemented by FNAC. Surgeon has to pay attention to minimize the risk of complications during parotidectomy. The goals of rational and risk of operation such as general complication associated with the surgical procedure must be clearly explained. The patient has to be informed about the cosmetic sequalae of the incision and all patients have to be told that facial nerve paralysis or paresis is possible and can be temporary or permanent.

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