

Extracapsular dissection versus superficial parotidectomy intreatment of benign parotid tumours our experience

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Abstract

Background: Pleomorphic adenoma is the most common salivary gland tumour. The most common gland involved is parotid gland. The purpose of this study was to evaluate the surgical outcome in patients with benign parotid gland tumors after extracapsular dissection or superficial parotidectomy in terms of mean operative time, intra operative tumours, post operative complication and recurrence rate.

Objectives: To compare the outcome of extracapsular dissection versus superficial parotidectomy in treatment of benign parotid tumours.

Materials and Methods: This prospective study comprises of 22 cases diagnosed with benign parotid tumours, undergoing either extracapsular dissection or superficial parotidectomy. The surgical outcome was compared with regards to mean operative time, intra operative tumour size , post operative complication , and recurrence rate.

Conclusion: Extracapsular dissection of the parotid gland is an excellent surgical technique which can be applied safely to benign parotid tumours located in the superficial lobe of the parotid.

Introduction

Salivary gland neoplasms present the most complex and diverse group of tumors encountered by head & neck surgeons. Benign parotid tumor is one of the most common neoplasms in head and neck region, approximately account for 3% to 10% of all head and neck neoplasms. The overall incidence of salivary gland neoplasms is 4/100000 per year with the gender ratio being 1:11. About 80% of them originate in the parotid gland, where about most of them are benign (80%). The most common benign tumors of the parotid gland are pleomorphic adenoma and Warthin's tumor. The majority of the lesions affect the superficial lobe of parotid gland. Superficial parotidectomy and Extracapsular dissection are the treatment modalities for management of benign parotid tumors.

Superficial parotidectomy is a technique with the removal of whole superficial lobe, dissection and preservation of branches, and main trunk of facial nerve and also with a total removal of the parotid neoplasm. Extracapsular dissection is a technique that involves a total excision of the benign parotid tumor surrounded by healthy parotid gland tissue. The main difference between ECD and other types of parotidectomy is that it does not expose the facial nerve trunk when removing the benign parotid

tumor. This study aims to compare ECD with SP in the treatment of benign parotid tumors.

Materials and Methods

This prospective study was conducted at SSMC, Tumakuru which include patients treated with benign parotid lesions. A detailed history taking and meticulous clinical examination, routine biochemical and hematological investigation are done to the patients. All patients are subjected to ultrasound scan of head and neck with particular attention to the parotid glands and fine needle aspiration cytology. Additional imaging such as CT scan/ MRI of head and neck are used depending on the need.

This study comprises of 22 cases diagnosed with benign parotid tumours, undergoing either extracapsular dissection or superficial parotidectomy. The surgical outcome was compared with regards to mean operative time, intra operative tumour size, post operative complication, and recurrence rate.

Procedures

All patients underwent either extra capsular dissection or superficial parotidectomy under general anaesthesia. In all Patients standard parotidectomy approach was used.

Observation

After application of inclusion and exclusion criteria, a total of 22 patients who underwent Extracapsular Discussion And Superficial Parotidectomy were included in the study. The data collected from these patients were entered into master chart, which comprised on intra-operative surgical findings and post-operative surgical complication etc. and was further analyzed statistically. In our study the age of patients varied between 18 years and 60 years. They were no patients who were above 61 years. Most of the subjects were between 41-50 years of age (n = 8, 36.36%) with mean age being 48.

Age Distribution		
Age Group	Frequency	Percentage
18 - 30	4	18.18%
31-40	5	22.72%
41-50	8	36.36%
51-60	5	22.72%

Sex distribution

In this study when gender distribution was analyzed, male patients (n = 11) and number of female patients (n = 11) Sex distribution among our out patients is described in the given table.

Gender distribution of study population		
Gender group	frequency	percentage
Males	11	50.00%
Females	11	50.00%

Mean Operative Time Distribution

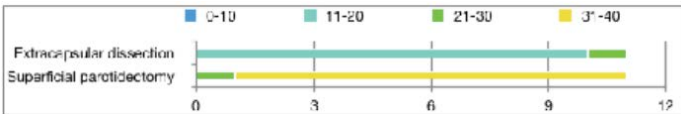
In our study we observed the mean operative time of extracapsular dissection was less when compared to superficial parotidectomy as shown in table. The Average mean operative time for extracapsular dissection was 79.3 mins and Superficial parotidectomy was 140 mins (p<0.0001).

Mean operative time distribution of extracapsular dissection		
Mean operative time	frequency	percentage
0 mins - 60 mins	0	0%
61 mins to 75 mins	0	0%
76 mins to 90 mins	10	90.90%
91 mins to 105 mins	0	0%
106 mins to 120 mins	1	9.09%
above 120 mins	0	9.09%

Mean operative time	frequency	percentage
0 mins - 60 mins	0	0%
61 mins to 75 mins	0	0%
76 mins to 90 mins	0	0%
91 mins to 105 mins	0	0%
106 mins to 120 mins	0	0%
above 120 mins	11	100%

Average Intra - Operative Tumour Size

In our study of 22 cases , 11 underwent superficial parotidectomy and 11 underwent extracapsular dissection of the parotid gland , the average intra-operative tumor size was found to be 19.69 mm for extracapsular dissection and 24.96 for superficial parotidectomy (p<0.0001).



Average intra-op tumour size	frequency	percentage
0-10 mm	0	0%
11-20 mm	10	90.90%
21-30mm	1	9.10%
31-40mm	0	0%

Average intra-op tumour size	frequency	percentage
0-10 mm	0	0%
11-20 mm	0	0%
21-30mm	10	90.90%
31-40mm	1	9.10%

Distribution of Post Operative Complication

In our study post-operative complications such as seroma, bleeding, Frey’s syndrom , facial nerve palsy and salivary fistula was found to be higher in superficial parotidectomy group (n = 10 . 90.90%), than in extracapsular dissection group (n = 5 , 45.45%). Showed in table.

Post operative complication	frequency	percentage
Seroma	3	27.27%
Frey syndrome	1	9.09%
Bleeding	0	0%
Salivary fistula	1	9.09%
Facial palsy	0	0%

Post operative complication	frequency	percentage
Seroma	1	9.09%
Frey syndrome	3	27.27%
Bleeding	3	27.27%
Salivary fistula	1	9.09%
Facial palsy	2	18.18%

Distribution of Post-Operative Recurrence Rate

In our present study, only one patient (9.09%) present with recurrence of the disease in extracapsular dissection group while there was no recurrence of the disease in any patient who underwent superficial parotidectomy. Shown in table.

Post operative recurrence	frequency
Extracapsular dissection	1
Superficial Parotidectomy	0

Summarized data of 22 patients who underwent extracapsular dissection or superficial parotidectomy.

ECPD - Extra capsular dissection of parotid

SP - Superficial parotidectomy.

	ECPD	SP	
Length of surgery, min			
Mean	79.36	134.34	<0.001
SD	9.45	16.64	
SEM	2.85	5.01	
Lower 95% CI of mean	73.01	123.16	
Upper 95% CI of mean	85.71	145.52	
Size, mm			
Mean	19.69	24.92	<0.001
SD	2.37	3.41	
SEM	0.72	1.02	
Lower 95% CI of mean	18.09	22.63	
Upper 95% CI of mean	21.28	27.21	
Complication	5 (45.5)	1 (9.1)	0.032
Recurrence	1 (9.1)	-	0.5
cosmetic deformity	-	2 (18.2)	0.238

Discussion

This is a prospective study of 22 patients with benign parotid tumour in which 11 patients were males and 11 patients were females all between the age group of 18 - 60 years. Patients were included in the study if they had symptoms such as facial swelling, facial asymmetry / weakness, facial pain. Facial swelling (86.36 %) was observed to be the most common symptom among the study group followed by facial asymmetry (9.09 %) and Facial pain (4.54%). 10 (45.45%) patients had swelling on the right side and 12 (54.54%) had on the left side.

All Patients were diagnosed after detailed history & clinical examination, followed by ultrasonography of the neck with special preference for the parotid gland and finally fine needle aspiration cytology done to get per operative tissue diagnosis. All patients who had benign parotid lesion and were willing for undergoing surgery were enrolled to this study after taking consent from the patient and the attenders.

The mean intra operative time for extracapsular dissection was about 79.3 mins and superficial parotidectomy was 140.09 mins. The

mean intra operative tumour size was 19.69 mm for ECD and 24.96 mm for SP. Post-operative complications included seroma, bleeding, facial nerve palsy frey’s syndrome and salivary fistula, which we observed was higher in superficial parotidectomy group.

Patients were followed up for a period of 6 months, recurrence occurred in only one patient who underwent extracapsular dissection after a period of 5 months. The operative success rate compared between the two surgery, patients who underwent extracapsular dissection of the parotid gland showed good results in form of less intra operative and post-operative complication and good cosmetic satisfaction.

Conclusion

The two main aspects of parotid surgery for benign tumours are the removal of the lesion with adequate margins of healthy parotid tissue surrounding it and preservation of the facial nerve. From our study titled “Extracapsular dissection versus superficial parotidectomy in treatment of benign parotid tumours” we have reached the following conclusions.

Most common age group of present with benign parotid tumours is between 41 - 50 years

- Most common side of presentation left side.
- Most common clinical feature during presentation is facial swelling followed by facial asymmetry and facial pain.
- Extracapsular dissection reduces the mean operative time required for removal of tumours from the superficial lobe.
- Extracapsular dissection is safe and reliable procedure compared to superficial parotidectomy with advantage

in the reduced percent of facial nerve injury, Frey's syndrome, seroma and salivary fistula.

The optimal surgical approach for benign tumours of the parotid gland remains a highly controversial issue. The success of the surgical outcome requires proper selection of patients who will benefit from the surgery and careful meticulous resection of the tumour accentuates the success of surgical outcome. In this study we have evaluated the outcomes of patients with benign parotid lesions who underwent extracapsular dissection and superficial parotidectomy and have come to a reasonable conclusion that extracapsular dissection of the parotid gland is an excellent surgical technique which can be applied safely to benign parotid tumours located in the superficial lobe of the parotid. The major limitation of the study was too short follow up period to assess the recurrence rate. Parotid Tumours are well known for recurrence which can be aggressive and difficult to handle. Hence a longer follow up is advised.

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