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A Clinico-Pathological Study and Management of Parotid Tumours

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Abstract **Original Research Article**

Aim: The aim of the study is to know the incidence of parotid gland tumours with respect to age and sex, to study the various modes of clinical presentation of parotid tumours and to evaluate the various modes of surgery and outcome of surgical management of parotid gland tumours (both benign and malignant) at MRIMS, Hyderabad. ***Materials and methods***: This study was conducted from July 2019 to July 2021 over a period of 2 years. 30 patients admitted in MRIMS with parotid gland neoplasm were included in this study. ***Inclusion criteria***: All patients with parotid swelling due to parotid neoplasm were included. ***Exclusion criteria***: All paediatric patients, patients with tumour like conditions and infectious causes of parotid gland were excluded. ***Results:*** The incidence of parotid tumours was highest in 3rd to 5th decade. Males were more affected than females. Majority of the tumours were benign in nature. All patients presented with swelling in parotid region (100%). Pain is always on account of malignant tumour. Pleomorphic adenoma was the commonest benign tumour. The treatment of choice of all benign tumours is superficial parotidectomy. All malignant tumours were subjected to post- operative radiotherapy. Commonest post-operative complication was facial nerve weakness.

Keywords: 1) pleomorphic adenoma 2) facial nerve injury 3) parotidectomy.

INTRODUCTION

Parotid gland is the most common site of salivary gland tumours. 70%-80% of salivary gland tumours occur in the parotid gland. Among the parotid gland tumours majority are benign (80%). Pleomorphic adenoma is the commonest benign tumours (70% of all tumours that occur in parotid gland). Parotid tumours are generally slow growing and present for several years before they seek medical advice. Swelling is the most common symptom. Most of the malignant tumours present with pain and they show a rapid growth pattern.

FNAC is a good tool in diagnosing parotid gland tumours. Karolinske: popularized the use of FNAC in parotid tumours. Patey [1]. Recognized that frequent recurrence after enucleation was due to capsular defect. Patey [2] has defined and described conservative parotidectomy. Deans GT [3]. Reported that superficial parotidectomy for the tumours confined to the superficial lobe of the parotid and he considered enucleation for small mobile lesions. Califano J *et al*. [4] reported that approximately 80% salivary gland tumours are found in the parotid gland, 10%-15% in submandibular salivary gland and 5%-10% in sublingual gland. Approximately 85% of parotid neoplasms are benign and majority of minor sublingual and minor salivary glands are malignant.

Malignant tumours tend to occur in older age group in comparison with benign tumours. The commonest site of parotid tumour is superficial lobe. The complications that can arise after parotid surgery are immediate post-operative facial nerve weakness, permanent facial nerve weakness, parotid fistula, wound infection, Frey's syndrome, seroma, bleeding/hematoma and hypoesthesia of cheek/ear lobule. Permanent facial nerve weakness is seen in 2-10% and temporary facial nerve weakness is commonest complication (20-30%). Parotid fistula is a very rare complication.

MATERIALS AND METHODS

The study was conducted from July 2019 to July 2021 over a period of 2 years. 30 patients admitted at MRIMS, Hyderabad with parotid gland neoplasm were included in this study.

INCLUSION CRITERIA

All patients with parotid swelling due to parotid tumours, from 13 years age onwards were included.

EXCLUSION CRITERIA

Paediatric patients below the age of 13 years, tumour like conditions and infectious causes of parotid swellings were excluded.

All patients admitted were evaluated by documenting history, clinical examination and routine laboratory investigations and specific investigations like FNAC and USG.

Sialography was not done for the reason that it may cause inflammation and/or infection. After evaluation of the tumour by clinical examination and specific investigations a surgical plan was formulated. The final decision was taken preoperatively for the type of surgery to be done by the surgeon. The specimen was sent for histopathological examination for final diagnosis after surgery.

The cases proved to be malignant were subjected to adjuvant treatment. Different modalities of treatment adopted in this study are.

1. Surgery alone
2. Surgery with post-operative radiotherapy

Different surgical procedures adopted are

1. Superficial parotidectomy
2. Total conservative parotidectomy
3. Radical parotidectomy.

OBSERVATION AND RESULTS

Age incidence of parotid tumours

Age Group	Total No of cases	%	Pleomorphic Adenoma	Warthins Tumour	Basal cell Adenoma	Oncocytoma	Malignant mixed tumour	Acinic cell carcinoma
13-20	2	6.67	2		1			
21-30	8	26.67	5	1				
31-40	7	23.33	7				1	
41-50	9	30.0	6	1			2	1
51-60	2	6.67	1					
61-70	1	3.33				1		
71-80	1	3.33					1	
Total	30	100	21	2	1	1	4	1

The age incidence of the patients in this study group ranged from 13 – 72 years Malignant tumours occurred between the ages 36 – 72 years. Most patients in this series were in the 4th decade of life. The mean age was 37.6years for benign tumours and 50.7years for malignant tumours.

Sex distribution

Sex	No. of cases	%	Pleomorphic Adenoma	Warthin's tumour	Basal cell Adenoma	Oncocytoma	Malignant mixed tumour	Acinic cell carcinoma
Male	18	60	11	2	1	1	2	1
Female	12	40	10				2	
Total	30	100	21	2	1	1	4	1

In this series 18 patients (60%) were male and 12 patients (40%) were female. Benign tumours are more common in males. There was no sex differentiation in malignant tumours. Clinical presentation of parotid tumours.

Signs and symptoms	No. of cases	Overall%
Swelling	30	100
Pain	5	16.67
Fungating mass	0	0
Cervical lymphadenopathy	-	-
Deep lobe involvement	2	6.66
Fixity to masseter/mandible	-	-
Facial nerve palsy	1	3.33

All patients presented with swelling in the parotid region. Pain and rapidity of growth were present in malignant tumours Pain occurred in 100% patients with malignant tumours (5 cases). One patient had facial nerve palsy which later was proved to be malignant.

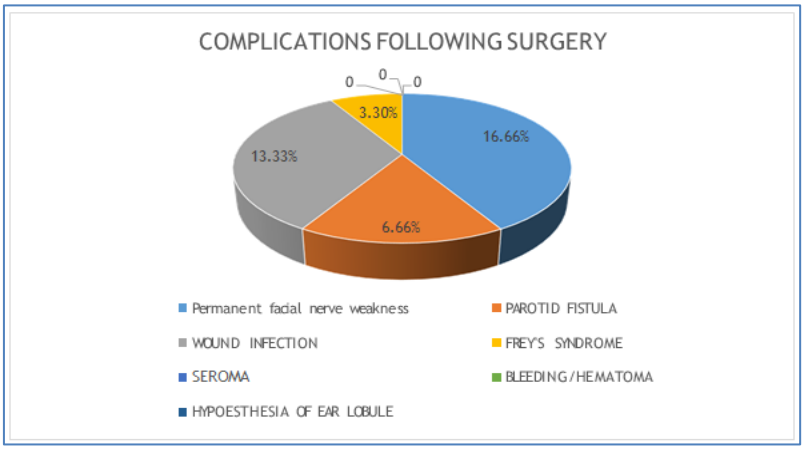
Distribution of FNAC diagnosis of tumours

DIAGNOSIS	NO OF PATIENTS	%
Pleomorphic adenoma	26	86.7
Warthin's tumour	1	3.33
Acinic cell carcinoma	1	3.33
Malignant mixed tumour	2	6.7

In this study the number of cases of pleomorphic adenoma diagnosed by FNAC was 26. All 30 patients were subjected to surgery. Superficial parotidectomy was performed in 25 patients (83.3%) total conservative parotidectomy was performed in 4 patients and radical parotidectomy was performed in one case. Adjuvant radiotherapy was given in all 5 patients proven to be malignant. Out of 5 patients 4 patients had malignant mixed tumour and one patient had acinic cell tumour.

COMPLICATIONS

Complications	Pleomorphic adenoma	Warthins tumour	Basal cell adenoma	Oncocytoma	Malignant mixed tumour	Acinic cell carcinoma	total
Immediate post op facial nerve weakness	4	1	0	1	1		7(28.33)
Permanent facial nerve weakness	3		0	1	1		5(16.66)
Parotid fistula	2	0					2(6.66)
Wound infection	2					2	4(13.33)
Frey's syndrome	1						1(3.3)
Seroma	-	-	-	-	-	-	0
Bleeding/hematoma	-	-	-	-	-	-	0
Hypaesthesia of cheek/ ear lobule	-	-	-	-	-	-	0



Post operatively 7 patients developed facial nerve weakness, out of which 4 patients had pleomorphic adenoma. 1 patient had malignant mixed tumour, 1 patient had Warthin's & 1 case of oncocytoma. Permanent facial nerve weakness was noted in 5 patients. 2 patients underwent lateral tarsorraphy to prevent eye complications. 4 patients had wound infections. One case of Frey's syndrome was noted and treated conservatively.

In this study after subjecting the tumour tissue for histopathological examination 23 patients had pleomorphic adenoma 2 patients had Warthin's tumour. Malignant mixed tumour was noted in 4 cases and acinic cell carcinoma was noted in one case.

In this study follow up was done ranging from 3months to 3 years. Follow up was done to know the recurrence of the tumour. In this series none of them came back with recurrence.

DISCUSSION

In this study most patients were in the age group of 3rd to 5th decade of life. Malignant tumours were encountered more in older age group 4th-5th decade.

Mean age group was 37.6years in benign tumours and 50.7years for malignant tumours. Lim LH *et al*. [5] reported a mean age for benign tumours to be 51years and 40 years for malignant tumours. Males were affected more than females in both benign and malignant tumours in these study males: females 3:2. It is a near equal distribution with other studies. A general male preponderance was noted in a study by Suwala. P *et al*. [6] And Kawata. R *et al*. [7]

DISCUSSION ON SEX INCIDENCE IN PAROTID TUMOURS

AUTHOR	MALES: FEMALE RATIO
Suwała . P *et al*.,	1.01:1
Pietniczka-Załeska. M *et al*.,	0.7:1
Kawata. R	1.06:1
Present study	3:2

Clinical features

History of swelling is the commonest feature. 16.67% of the patients had pain associated with the swelling all these patients were proved to have malignant tumours. One patient had facial nerve palsy which proved to be malignant tumour. The presence of facial nerve palsy, skin infiltration and metastatic nodes were always associated with malignant tumours. History of pain in the parotid gland tumours should alert us to think in terms of malignancy. Lam KH *et al*. [8]. Suggested that pain, hardness and fixity to be the features of malignancy.

In this study FNAC correctly diagnosed benign from malignant tumours in 93.3% cases. Superficial parotidectomy was performed in 25 patients, conservative total parotidectomy was done in 4 patients, and radical parotidectomy was done in 1 patient. Radiotherapy was given in 5 patients with malignant tumours. Permanent facial weakness was noted in 4 cases (16.6%).

One patient had parotid fistula which healed spontaneously in 3 months. Klintworth N *et al*. [9] Reported a similar incidence. In our study 4 patients (13.3%) had wound infection probably due to low socioeconomic status. Bova R[10]. Reported 2.3% of wound infection. Only one case of Frey's syndrome was reported.

CONCLUSION

The incidence of parotid tumours was highest in 3rd-5th decade Males predominate over females in the incidence of parotid tumours Benign tumours constitute the majority of parotid neoplasms. If associated with pain malignancy is to be suspected. The commonest benign tumour is pleomorphic adenoma and the commonest malignant tumour is mixed malignant tumour. FNAC is the diagnostic investigation of choice for parotid tumours.

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