ORIGINAL ARTICLE

Clinical manifestations, treatment outcome and post-operative complications of parotid gland tumours — an experience of 20 cases

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Abstract

Objective: To find out clinical manifestations, treatment outcomes and post-operative complications of parotid gland tumours.

Methods: The prospective quasi-experimental multi-centric study was conducted at three hospitals of Karachi - National Medical Centre, South City Hospital and Liaquat National Hospital, from July 2007 to July 2011, and comprised 20 patients who underwent surgery for tumour of the parotid gland. According to history, clinical examination and fine needle aspiration cytology findings, all cases appeared to be benign, so superficial parotidectomy was done in all the cases.

Results: There were 11 (55%) male and 9 (45%) female patients with a mean age of 53.2±2.8 years. All patients presented with progressively increasing lump in the parotid region with mean time duration of 2.2±2.8 years. Post-operative histopathological findings showed presence of pleomorphic adenoma in 18 (90%) cases and Warthin's tumour in 2 (10%). Post-operative complications included sensory deficit in 4 (20%) cases, temporary facial nerve paresis in 3 (15%), sialocoele in 2 (10%), post-operative bleeding and wound infection in 1 (5%) case each. No recurrence was noticed during follow-up which ranged between 6 months and 4 years.

Conclusion: Surgery of the superficial parotid gland if performed carefully causes minimal complications.

Keywords: Pleomorphic adenoma, Major salivary gland, Painless swelling. (JPMA 63: 1472; 2013)

Introduction

The incidence of salivary gland tumours is less than 3% of all neoplasia of the head and neck region[1] and approximately 80% among these are located in the parotid gland. A lump in the parotid region often presents as a diagnostic challenge with regards to its site of origin and its nature whether benign or malignant. Physical examination of the lump is the first and most important tool as it guides the clinician in the right direction. There is no consistent correlation between the rate of tumour growth and whether it is benign or malignant. Among all the tumours in the parotid gland, 75% to 80% are benign.[2] Most benign tumours present as slow-growing painless mass, often in the tail of parotid gland.

The majority of benign tumours of the parotid gland are of epithelial origin and pleomorphic adenoma is the commonest tumour. It is an epithelial origin tumour and is associated with some chromosomal abnormalities involving aberrations of 8q12 and 12q15.[3] Histologically, epithelial cells are arranged in cord-like pattern, along with myoepithelial cells and extracellular matrix with chondriod, collagenous, mucoid or osseous stroma.[4]

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This study was conducted to find out clinical manifestations, treatment outcome and complications after surgery in cases of parotid tumour in three different hospitals of Karachi, Pakistan.

Patients and Methods

The prospective, quasi-experimental, multi-centre study was conducted at National Medical Centre, South City Hospital and Liaquat National Hospital in Karachi from July 2007 to July 2011. Inclusion criterion was all cases of parotid gland tumours that were seen by the authors at the three hospitals during the study period. Cases that were not operated upon by the authors, cases where final histopathological report after surgery was not available, and cases lost to follow-up were excluded. The final sample size was 20.

Detailed history was taken, including particular habits like smoking or alcohol consumption, family history with regard to salivary or other tumours, and clinical presentation of the tumour. Thorough clinical examination was done in all the cases, including clinical assessment whether tumour appeared benign or malignant like facial nerve involvement, fixity of the tumour, skin involvement, lymph node enlargement etc. Fine needle aspiration cytology (FNAC) was done in all the cases along with other routine pre-operative investigations. Computed tomography (CT) scan or

Magnetic resonance imaging (MRI) was not done in any case as all cases appeared to be benign clinically.

As clinically and with FNAC findings, all cases appeared to be benign, so superficial parotidectomy was done in all the cases. Specimen of the gland was sent for histopathology and final histopathological report was collected in all the cases. Patients were followed up at regular intervals with minimum follow-up period of six months and maximum of 4 years.

Results

Of the 25 patients initially enrolled, 2 (8%) did not turn up for surgery, and 3 (12%) were lost to follow-up. The final sample size, as such, was 20 (80%). Among them 11 (55%) patients were males and 9 (45%) were females, with male-to-female ratio being 1.2:1. Overall, age ranged from 36 to 63 years, with a mean of 53.2±2.8 years. Majority of the patients (n=9; 45%) were between 51 to 55 years of age. All the patients presented with a visible lump in the parotid region. Localised discomfort was present in 5 (25%) cases and mild to moderate pain in 2 (10%). Time duration when patient first noticed the swelling till its surgery ranged between 1 and 4 years with a mean of 2.2±2.8 years (Figure-1). There was history of smoking in 8 (40%) patients and alcohol consumption in 1 (5%) case. There was history of salivary tumour in the family member (father) in 1 (5%) case. Clinically, all cases appeared to be a benign tumour involving the superficial lobe of the parotid gland. Right parotid gland was involved in 12 (60%) cases while the left gland was involved in 8 (40%) cases. FNAC findings showed no malignant cells in any case (Table).

Superficial parotidectomy was done in all the cases and specimen was sent for histopathology. Final histopathological report confirmed the diagnosis of pleomorphic adenoma in 18 (90%) cases and Warthin's tumour in 2 (10%). In terms of post-operative complications, sensory deficit in pre-auricular region and part of pinna was complained by 4 (20%) patients, while temporary facial nerve paresis was noted in 3 (15%) which recovered completely in few weeks (Figure-2). Permanent facial nerve paralysis or paresis was not noticed in any case. In 2 (10%) cases sialocoele or collection of salivary secretions in sub-cutaneous tissues was present which required repeated aspiration and pressure bandage. Both cases recovered completely in three weeks. In 1 (5%) case post-operative bleeding occurred in the recovery room which required re-exploration and ligation of the bleeders. In 1 (5%) case, post-operative wound infection occurred with some pus collection and required aspiration of pus with appropriate antibiotic. Frey's syndrome or gustatory sweating was not observed in any

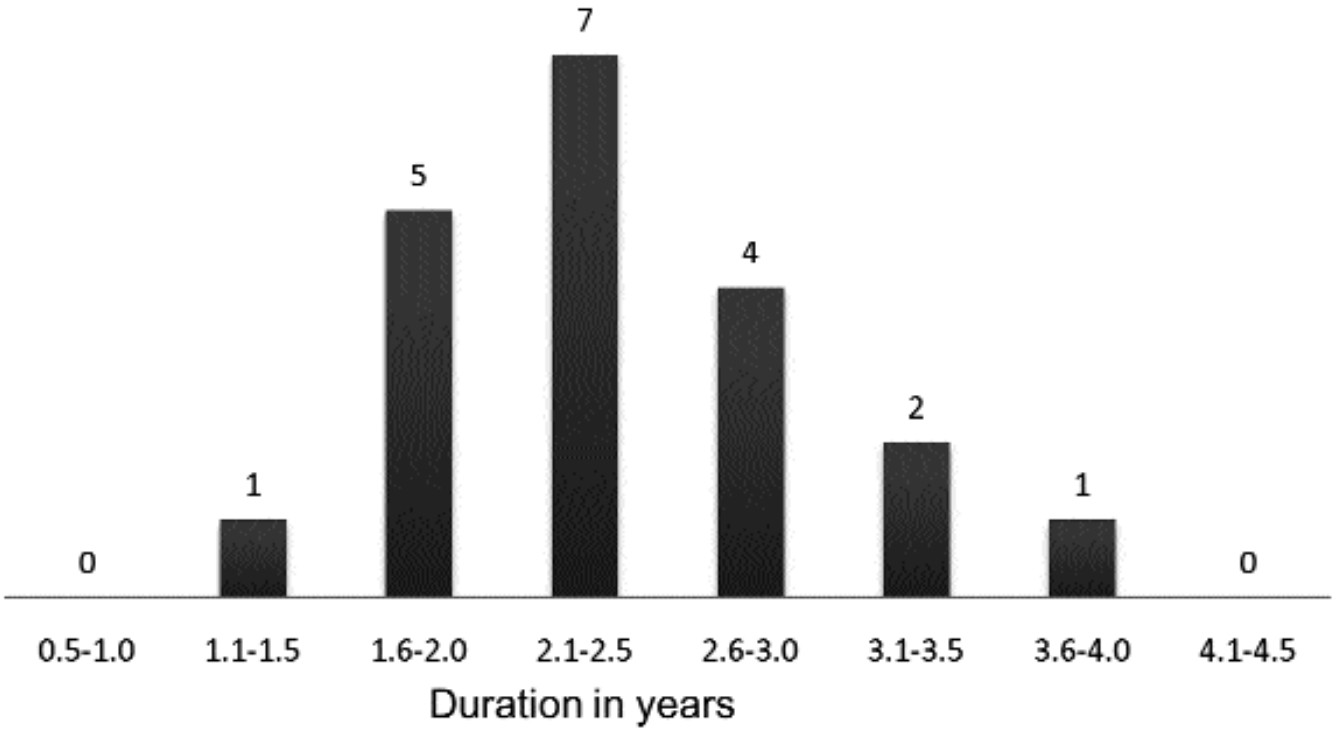

Figure-1: Time duration from notice of swelling to surgery.

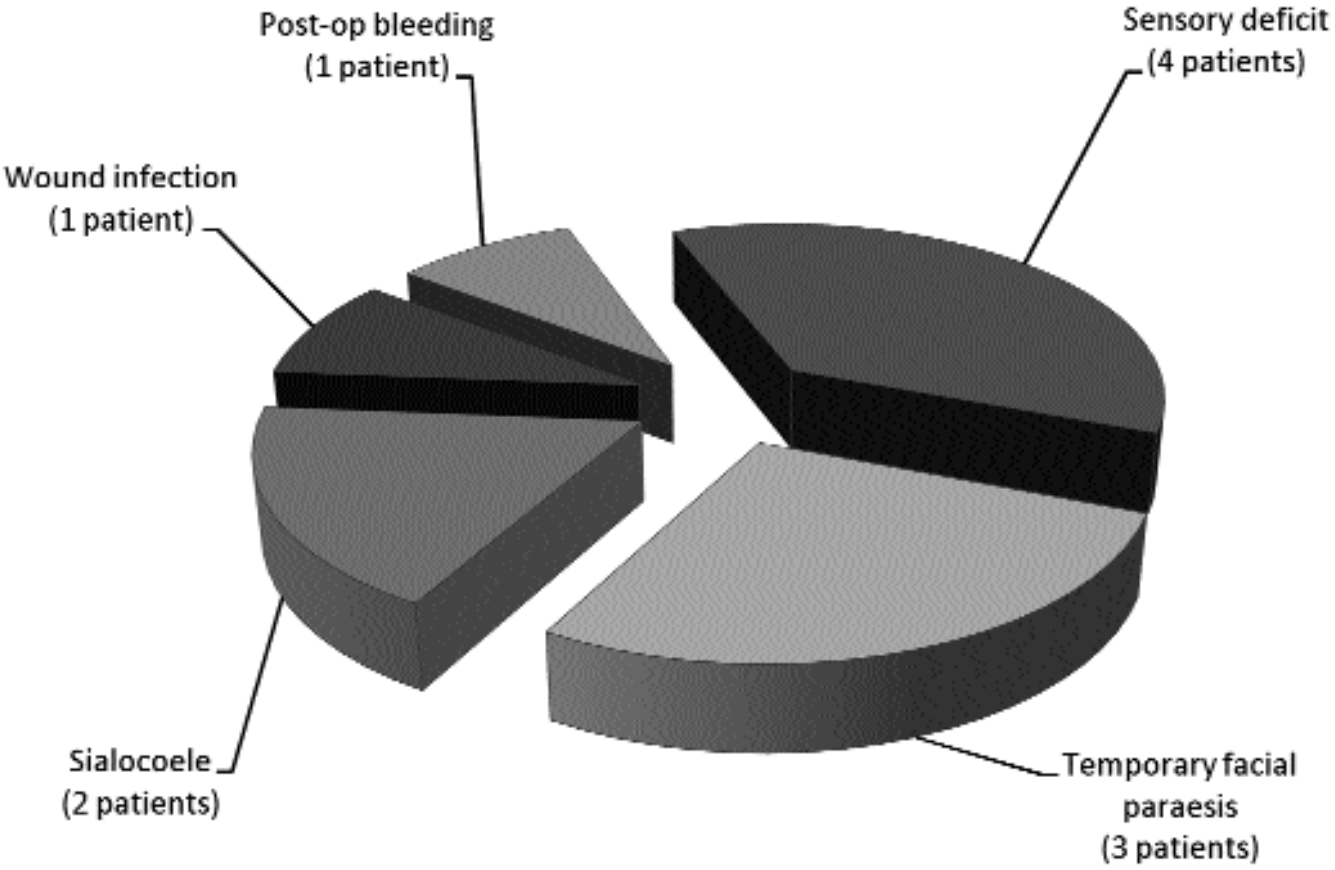

Figure-2: Complications after surgery.

Table: Findings on Fine needle aspiration cytology.

Findings on FNAC	No. of patients	Percentage
Pleomorphic adenoma	8	40%
Possibility of pleomorphic adenoma	4	20%
Benign salivary tissues	5	25%
Benign salivary tissues with lymphocytes	1	5%
Scanty aspirate/inconclusive	2	10%
Malignant cells	0	0
Total	20	100%

case. All these cases were followed up regularly, but no recurrence was noticed in any case with a minimum follow-up period of 6 months and maximum of 4 years.

Discussion

Parotid tumours are not common and comprise only 0.6% of all tumours in the human body.[5] As far as histopathology of the parotid tumour is concerned, it is made up of a diverse group both benign and malignant. About 75-80% of the parotid tumours are benign, and pleomorphic adenoma is the commonest variety. The other benign tumours are Warthin's tumour, oncocytoma, monomorphic adenoma, haemangioma and lymphangioma. Among the malignant tumours, the most common is adenoid cystic carcinoma, while the others are mucoepidermoid carcinoma, adenocarcinoma, acinic cell tumour, lymphoma and malignant mixed tumour. In this series, all of the tumours were benign, probably because of the smaller number of patients.

Most of the benign tumours are slow-growing in nature and produce no symptoms except the presence of a swelling in the parotid region. Pain in the swelling, sudden increase in size and involvement of the facial nerve are ominous signs and signify malignancy, tuberculosis or sarcoidosis.[6] In our series also, most of the patients presented in the similar way and mean duration from first notice of the swelling to surgery was 2.2 years. In this series male-to-female ratio was 1.2:1 which is similar with some other studies,[7] but in some studies females were more affected than males.[8,9]

FNAC is usually the first and most important investigation tool in case of parotid tumours. Most studies have shown

FNAC to be safe, rapid, inexpensive and relatively painless procedure with a diagnostic accuracy of more than 75%.[10] Open biopsy of the parotid gland is not recommended due to the risk of seeding in case of malignancy, violation of tissue planes, fistula formation and facial nerve damage. In routine clinical practice, after clinical assessment and FNAC, parotid mass is operated and the specimen is sent for final histopathology. In our series, only two reports of the FNAC were inconclusive while all other showed benign pathology and none of the report was malignant. Histopathology report after surgery confirmed the benign nature of the diseases in all cases.

Surgery for the parotid tumour is very challenging as most of the tumours are benign and patients expect normal function after operation with no recurrence. However, grim complications can occur, which are classified as per-operative and post-operative complications. Hypoesthesia of the greater auricular nerve is a frequent consequence after parotidectomy. We came across this complication in 4/20 cases (20%). The area of numbness usually improves within one year after the operation, but a small area of skin may remain anaesthetised permanently.[11] Some surgeons recommend preservation of the posterior branches of the greater auricular nerve to achieve faster and more complete recovery in sensory function.[12]

Post-operative facial nerve dysfunction involving some or all branches of the nerve is the most frequent early complication of the parotid gland surgery. The incidence of temporary facial nerve paralysis varies from 9.3% to 64.6% in the literature.[11] We came across 3 (15%) cases of temporary facial nerve paresis in this series, all of whom recovered within a few weeks. The cases of transient facial nerve paresis generally resolve within six months with 90% recovery within one month after surgery.[13] The incidence of facial nerve paralysis is much higher in total parotidectomy than superficial parotidectomy.

Sialocele occurs if the resected edge of the remaining parotid gland leaks saliva which collects beneath the flap. Sometimes this collected saliva drains through the wound and forms salivary fistula. Parotid salivary fistula and sialocele are relatively common complications after parotidectomy operation. There were 2 (10%) cases of sialocele in our series, while salivary fistula did not occur in any case. These complications are usually self-limiting and respond well to conservative management. In both cases we performed repeated aspiration and pressure dressing for three weeks and they recovered completely.

Haemorrhage or haematoma after parotidectomy is uncommon and usually related to inadequate haemostasis at the time of surgical operation. In one of our patients, bleeding occurred with formation of haematoma immediately after surgery in the recovery room. The patient was again shifted to the operation theatre, and re-opening and exploration was done with ligation of the bleeder. Another important and frequent late complication after parotidectomy is gustatory sweating or Frey's syndrome. The incidence of this syndrome is described as high as 50% (severe in 15%) in the literature.[11] Fortunately, none of the patients in this series complained about unilateral sweating or flushing of the skin of parotid region during meals.

Conclusions

Surgery fo the superficial parotid gland performed carefully encounters minimal complications. The recurrence rate is almost nil.

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