INTRODUCTION

Parotid gland is one of the commonest seats of pathologic disorders in the head and neck region. It is the most common site of salivary gland tumours accounting for 80% of the total. The annual incidence of parotid gland tumours is 1 in 100,000.1,2 In 80% cases, it is pleomorphic adenoma while Warthin's tumour accounts for 10%. Among the malignancies, mucoepidermoid carcinoma is the most common followed by adenoid cystic carcinoma.1-3 Parotid gland surgery has slowly evolved over the last few centuries. In the 16th century, it was limited to the treatment of ranula and salivary gland calculi. In the 19th century, enucleation was performed for parotid gland tumours which was attended by 25% recurrence rate. In the 20th century, the concept of more extensive surgery to reduce the high rate of recurrence came and superficial parotidectomy was popularized as the minimum required procedure. Today, the widely accepted procedures for benign parotid gland tumours are superficial parotidectomy and extra capsular resection while for malignant disorders, the options range from total to extended parotidectomy.4-7

The present study was conducted with the aim to assess the clinical presentation and outcome of various parotid gland disorders that necessitated parotidectomy at a tertiary care general surgical setting.

METHODOLOGY

This surgical audit was carried out at the Department of Surgery, Pakistan Institute of Medical Sciences (PIMS), Islamabad and included patients who underwent parotidectomy from January 2003 to December 2010. All adult patients of either gender who presented with parotid gland disease and underwent parotidectomy were included. Patients with diseases such as parotid abscess who did not undergo parotidectomy were excluded. Initial diagnosis was made by history, physical examination and ancillary investigations.

The relevant data were obtained through the Hospital Management Information System (HMIS) and patient charts. The department of pathology was consulted to review the histopathology and fine needle aspiration...
cytology records. The type of surgery performed depended on the pre-operative diagnosis based on FNAC and radiological scans as well as the clinical presentation of the tumour. All the patients were hospitalized.

The operative procedure was tailored according to type and extent of the disorder. Superficial parotidectomy was performed for all benign tumours confined to the superficial lobe. Total parotidectomy was performed for malignant tumours as well as benign tumours involving the deep lobe. Extended total parotidectomy was performed for locally advanced malignant tumours. For the identification of facial nerve, the V-shaped sulcus found between the mastoid and the bony external auditory meatus was sought. The tympanomastoid fissure and the tragus pointer were also employed for the nerve identification. The nerve was confirmed once it was seen to divide into two main branches. All branches were subsequently traced and superficial parotidectomy was completed. No nerve conductor was used in performing these procedures. Vacuum drains were placed in the wound for 24 hours post-operatively. All surgeries were performed by the consultant while some of the surgeons required the expertise from plastic surgery to cover the large defects not amenable to direct closure.

The sociodemographic profile of the patient, presenting features among patients, benign versus malignant nature of the disease, FNAC reports, type of surgical procedure instituted, complications encountered and histology reports of the surgical specimens were all recorded on a proforma.

The data were analysed through Statistical Package for Social Sciences (SPSS) version 15. The numerical data such as age were expressed as mean ± standard deviation while categorical data such as gender distribution, histological diagnosis, surgical procedures and complications observed were expressed as frequencies and percentages. 2 x 2 table was employed to calculate sensitivity and specificity of FNAC for malignant lesions.

RESULTS

Out of 126 patients, 51% (n = 64) were females while 49% (n = 62) were males. The age ranged from 10 – 65 years. A majority of the patients (63%) were in the third and fourth decades of life. The mean age was 41 ± 12.6 years. The mean age in cases of malignant tumours was 43 ± 9.2 years.

Swelling or lump in the parotid region constituted the most frequent presenting feature, found among all the patients. It was followed by facial nerve palsy in 3% (n = 4) and pain in 1.58% (n = 2) of the cases. Overall, 90.47% (n = 114) cases had benign pathology while 9.52% (n = 12) had malignancies. The deep lobe was involved in 2.38% (n = 3) while in 8% (n = 10) the swelling was recurrent. Table I shows the histopathological diagnoses among the patients.

The present share of postoperative complications included greater auricular nerve paresis in 15% (n = 19) cases, facial nerve paresis in 8% (n = 10), facial nerve palsy in 4.76% (n = 6), Frey's syndrome in 1.58% (n = 2) and flap tip necrosis in 0.79% (n = 1). In 3.17% (n = 4) patients, the facial nerve was deliberately sacrificed due to its involvement by the tumour.

The value of FNAC as a diagnostic tool was assessed and was found to have 98.24% specificity and 83.33% sensitivity. The overall diagnostic accuracy was 96.82% (Table II).

DISCUSSION

This series focused on parotid gland disorders which is the commonest site for diseases among the salivary glands. It is involved by a variety of different benign and malignant conditions for which a wide range of surgical procedures are available.7-10 The present study...
is one the largest reported local series on parotid gland disorders from Pakistan.\textsuperscript{11,12}

In this study, the mean age for parotid gland disorders was 41 years confirming to several published studies.\textsuperscript{10-13} However, several studies from the West have reported these disorders to be more common in relatively advanced age groups.\textsuperscript{1,2}

In this study, there was a slight female predominance. Several published studies have reported similar more frequent involvement of females than males.\textsuperscript{10-12} Dorairajan from India reported male predominance.\textsuperscript{13}

In this study, pleomorphic adenoma constituted the commonest pathology affecting the parotid gland. Most of the published literature has reported pleomorphic adenoma to be the commonest pathology afflicting the parotid gland.\textsuperscript{10-15}

In this study, the share of malignancies was about 9.52%. Different studies have reported variable percentage of malignancies in their patients. Kara \textit{et al.} have reported 24% malignancies in their parotid gland disorders.\textsuperscript{10} Takahama \textit{et al.} have reported even higher frequency of malignancies at 40%.\textsuperscript{1} In this series the commonest malignant tumour was mucoepidermoid carcinoma followed by adenoid cystic carcinoma. These findings conform to what is reported by most of the published literature.\textsuperscript{16-19}

In this study, FNAC was found to be very useful for diagnosing malignancies of the parotid gland. It was found to have 98.24% specificity and 83.33% sensitivity. It is economical and easy to perform in parotid swellings. These findings conform to what is reported by Awan \textit{et al.} and Hartimath \textit{et al.} who have reported similar diagnostic accuracy of FNAC in parotid gland tumours.\textsuperscript{20,21} Dissemination of tumour cells with FNAC is a theoretical risk and is not supported by any published data.

In this study, facial nerve transient paresis occurred in 8% cases while 4.76% cases had facial nerve palsy. These findings conforms to most of the reported studies however, some studies have reported as high frequency as 39% of these complications.\textsuperscript{10,22,23} The use of nerve stimulators, staining methods and other techniques have been explained in literature for safeguarding the nerve and these may help to reduce the frequency of such disabling complications.

This study has some limitations. It is a single-centre observational study. Observer bias could not be eliminated completely. Cosmetic or long-term functional results among the patients could not be evaluated. The authors recommend the conduct of a multi-centre local study to confirm and improve upon these results.

\textbf{CONCLUSION}

Parotid gland tumours commonly affect relatively young individuals of either gender. Majority of the patients present as a painless lump in parotid region. Most of the patients have benign pathology while a small percentage has malignancy. Superficial parotidectomy is the most commonly offered surgical procedure. Parotid surgeries are safely performed in general surgery units with low morbidity and no mortality.

\begin{quotation}
\textbf{REFERENCES}
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15. Amirlink B. Malignant parotid tumours. (serial online) Dec15,


