

Parotid Tumor: A review of seven years' experience

Surendra Shah, Jay Nath Shah, Rajesh Nath Gongal, Sameer Shrestha, Sanjay Poudyal
Patan Academy of Health Sciences

ABSTRACT

Introduction: Parotid tumors represent about 80% of all salivary gland tumors. Our study was conducted to assess the clinical features, diagnostic accuracy of fine needle aspiration cytology (FNAC), surgical outcome and histological pattern of all patients underwent parotid surgery for parotid tumor at Patan Hospital.

Methods: All data of patients who underwent parotid surgery from 2060 to 2067 BC at Patan Hospital were collected retrospectively from medical files and analyzed.

Results: Among 18, all were presented with lump in the parotid region. Mean age of the patients was 45 years. Malignancy was common among older age group (mean age 51 vs 44 for benign). The overall accuracy in detecting malignant tumors was 88.89% with positive predictive and negative predictive values 100% and 83.24% respectively. Out of 18 histological reports, 15(83.33%) were benign lesions, pleomorphic adenoma was being most common 9(60%) among benign lesions, and 3(16.67%) were malignant lesions.

Conclusion: Painless lump is most common presentation of the parotid tumor. Benign pathology is common and majority of them are pleomorphic adenoma. Malignancy is prevalent in older age group.

Keywords: Parotid tumor, pleomorphic adenoma, malignancy.

CORRESPONDENCE

Dr. Surendra Shah
Lecturer, Department of surgery
Patan Academy of Health Sciences
E-mail: surendrashah@live.com

INTRODUCTION

Among the tumors of neck and face, 2% originated from parotid gland ¹. Parotid tumors represent about 80% of all salivary gland tumors and majorities are benign, mostly affected by pleomorphic adenoma which varies from 60.6% to 76.2% ². Lump in the parotid area is main symptoms of parotid tumor. However pain, facial palsy and skin ulcers may present in malignant cases ^{3, 4}. The treatment of parotid tumor is superficial or total parotidectomy, according to the extent of the tumor. Radiotherapy may be useful in malignancies as adjuvant therapy but chemotherapy is rarely used ^{5, 6, 7}. The aim of this study is to assess the clinico-pathological pattern of parotid tumor at Patan Hospital from 2060 to 2067 BC.

METHODS

All data of patients who underwent parotid surgery from 2060 to 2067 at Patan Hospital were collected retrospectively from medical files and analyzed. All patients had thorough history taking, clinical examinations and FNAC done preoperatively. Superficial parotidectomies were done for benign lesions involving superficial lobe, and total conservative parotidectomies were done for malignant or benign lesions involving deep lobe not involving facial nerve. Patients were referred for adjuvant radiotherapy after histological confirmation of malignant lesion.

FNAC reports and final histological reports were compared, and sensitivity as well as specificity of FNAC is calculated by Galan and Gambino method (Table 1).

Table 1: Galan and Gambino method.

Sensitivity	$a/(a + c) \times 100$
Specificity	$d/(b + d) \times 100$
Positive predictive value	$a/(a + b) \times 100$
Negative predictive value	$d/(c + d) \times 100$
Accuracy	$(a + d) / (a + b + c + d) \times 100$

a = True +ve (presence of malignancy correctly diagnosed)

b = False +ve (presence of malignancy incorrectly diagnosed)

c = False -ve (failed to diagnose a malignancy)

d = True -ve (absence of malignancy correctly diagnosed)

RESULTS

Among 18 patients with parotid tumor reviewed in this study from 2060 to 2067, there were no sex differences (9 males and 9 females) with mean age of 45 years (ranges from 17 to 75 years) and all of them presented with painless lump in the parotid region. The mean age of patients with benign and malignant lesion was 44 years and 51 years respectively.

The results of FNAC showed that 6 were inconclusive but negative for malignant cells, 11 were benign and one was malignant lesion. Among 6 inconclusive reported on FNAC, 5 proved to be benign and one malignant on final histology; and out of 11 benign lesions reported on FNAC, 10 were benign lesions and one was malignant on final histology, so there were 2 false negative results on FNAC. FNAC reported one malignant lesion which was correct on final histology. Thus, FNAC was 33.33% sensitive to report malignancy and 100% specific to rule out malignancy. The overall accuracy in detecting malignant tumors was 88.89% with positive predictive and negative predictive values 100% and 83.24% respectively.

Among 18, superficial parotidectomies were done in 13 patients (11 for benign and 2 for malignant lesion which was

diagnosed to be benign on preoperative FNAC reports) and total parotidectomies with preservation of facial nerve were done in 5 patients (4 for benign lesion involving deep lobe and 1 for malignant lesion). There were temporary partial facial nerve palsy in 2 (11%), hematoma in 1 (5.5%) and wound infection in 1 (5.5%) patient which were managed conservatively. Out of 18 histological reports, 15(83.33%) were benign lesions, pleomorphic adenoma was being most common 9(60%) among benign lesions, and 3(16.67%) were malignant lesions (Table 2).

Table 2: Histological pattern of parotid tumor.

Benign lesions	15(83.33%)
Pleomorphic adenoma	9
Basal cell adenoma	3
<u>Warthin's tumor</u>	1
<u>Myoepithelioma</u>	1
Salivary duct cyst	1
Malignant lesions	3(16.67%)
<u>Acinic cell carcinoma</u>	1
Poorly differentiated adenocarcinoma	1
Non-Hodgkin's lymphoma	1

DISCUSSION

Junior A T et al, in 2009, reported that mean age of patients with parotid tumor was 48 years with slightly female predominant (53%). The mean age was 47 years and 50 years for the patients with benign and malignant lesion respectively with painless lump in the parotid region was being most common presentation. Most of other studies also reported higher mean age of patients with malignant parotid tumor compared to benign tumors and an overall slight female predominant, more marked among malignancy^{8,9}. In our

study, the mean age was 45 years for parotid tumor, 44 years for benign parotid tumors and 51 for malignant parotid tumors, which showed that the mean age is higher in malignant tumors compared to benign tumors. There were no sex differences but painless lump in parotid region was presentation in all cases which was comparable to his study.

Following demise of open biopsy due to high rates of tumor seeding FNAC has become an established technique which is most commonly performed blindly in the outpatient clinic prior to plan surgery. FNAC has a number of advantages – it is quick, safe and high levels of diagnostic accuracy have been quoted¹⁰. Awan MS et al reported FNAC has 70% sensitivity for reporting malignancy, 97% specificity to rule out malignancy, and overall accuracy in detecting malignancy was 92% with positive predictive and negative predictive values 87% and 92% respectively¹¹. Our result showed weak sensitivity (33.33 vs 70 %) for reporting malignancy, high specificity (100 vs 97%) to rule out malignancy and weak overall accuracy (88.89 vs 92%) to detect malignant tumor with high positive predictive and negative predictive value (100 vs 87% and 88.89 vs 92% respectively). The FNA (fine needle aspiration) was not standard in our Hospital which was done in cytopathology department as well as in surgical outpatient room by surgical resident and registrar which could be the reason why sensitivity of FNAC is low in our study.

Shashinder S et al reported partial facial nerve palsy in 35%, hematoma in 1.31% and wound infection in 5.26% among 76 parotidectomies¹². However our study showed only 11% partial facial nerve palsy but wound infection rate is comparable. In

our study, there was poor documentation of complication that could be reason why our study showed low incidence of facial nerve palsy.

Sungur N et al reviewed 230 cases of parotid tumor, among them 192 (83%) were benign and 38 (17%) malignant tumors, and pleomorphic adenoma being the most common benign tumor (79.1%) while most common malignant lesion was adenocystic carcinoma¹³. Our study also showed similar result except that adenocystic carcinoma was not found in our study.

CONCLUSION

Painless lump is most common presentation of the parotid tumor. Benign pathology is common and majority of them are pleomorphic adenoma. Malignancy is prevalent in older age group. FNAC need to be standardized at Patan Hospital.

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