



Benign and Malignant Tumors of Parotid Gland: A Retrospective Two Year Study

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ABSTRACT

Introduction: Parotid tumors affect 1 in 100,000 people, representing 2-3% of tumors of the head and neck and 80% of salivary gland tumors. The literature estimates that approximately 80% of these tumors are benign, with pleomorphic adenoma being the most common followed by Warthin's tumor. Among the malignant tumors mucoepidermoid carcinoma is the commonest, followed by adenoid cystic carcinoma.

Material methods: It was a retrospective study done from January 2016 to December 2017 in the department of pathology Government Medical college Srinagar.

Results: our study included 42 cases of parotid gland tumors. Out of 42 cases 25 were female and 17 were male patients. Thus the male to female ratio observed was 1:1.4. Pleomorphic adenoma (twenty cases) was the most frequent benign tumor followed by Warthin's tumor (five cases) while as mucoepidermoid carcinoma was the most frequently identified malignant tumor.

Conclusion : pleomorphic adenoma is the most prevalent benign histological type while as mucoepidermoid carcinoma is commonest malignant tumor. Malignant tumors are more common in 5th decade while as benign lesions are commoner in 4th decade of life.

Key words: Pleomorphic Adenoma–Warthins Tumor–Mucoepidermoid Carcinoma.

1 INTRODUCTION:

Tumours of salivary glands are rare constituting less than one percent of all tumors and 3% to 10% of the neoplasms of head and neck region [1]. Parotid tumors affect 1 in 100,000 people, representing 2-3% of tumors of the head and neck and 80% of salivary gland tumors [2]. The literature estimates that approximately 80% of these tumors are benign, with pleomorphic adenoma being the most common followed by Warthin's tumor [3]. The parotid gland has a superficial lobe, lateral to the facial nerve, that comprises 4/5 of the glandular parenchyma, and a smaller deep lobe.

As 90% of the tumors are located in the superficial lobe and thus, do not affect the facial nerve hence superficial parotidectomy with facial nerve preservation is the most often indicated surgical procedure, [4].

The most common manifestation of pleomorphic adenoma is the presence of a solitary, solid, firm, lobulated, painless, mobile nodular lesion with well-defined margins [5]. Among the malignant tumors mucoepidermoid carcinoma is the commonest, followed by adenoid cystic carcinoma. The presence of pain, facial paralysis, rapidly growing tumor with ill-defined margins, and skin infiltration should raise the suspicion of malignancy [4].

The first diagnostic imaging assessment for parotid tumors is usually ultrasonography [5]. Fine-needle aspiration cytology (FNAC), whether or not guided by ultrasound, can be used as a complementary diagnostic test, especially when a non-characteristic manifestation of pleomorphic adenoma is suspected. The purpose of FNA is to differentiate benign from malignant lesions, as it usually does not establish

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the definitive histological diagnosis. However, histopathology remains the gold standard as it avoids diagnostic pitfalls of FNAC [3, 4].

2 MATERIALS AND METHODS:

It was a single institute retrospective study done from January 2016 to December 2017 in the department of pathology Government Medical college Srinagar. Clinical data and gross features of tumours were recorded and tabulated. Haematoxylin and eosin (H&E) stained sections and corresponding paraffin tissue blocks were retrieved from the archives of the department and reviewed. The tumors were categorized according to the WHO classification.

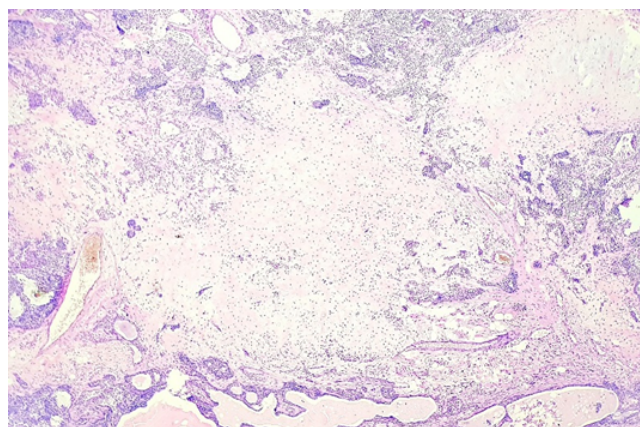


Figure 1. pleomorphic adenoma consisting of mixed epithelial and mesenchymal cell component showing chondromatous differentiation.

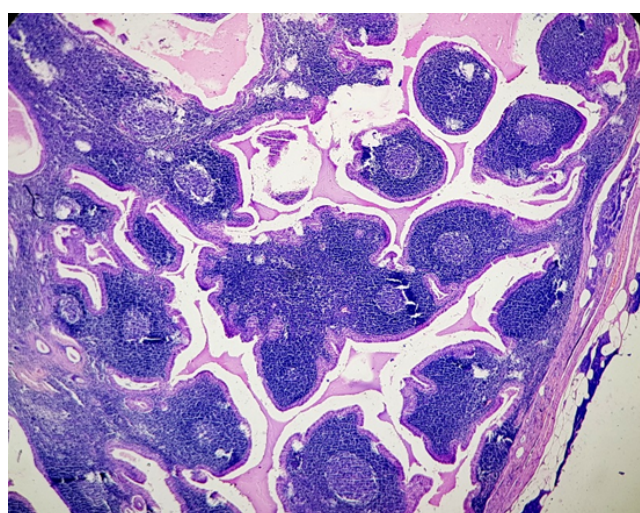


Figure 2. photomicrograph showing warthin's tumor lined by layer of epithelial cells resting on dense lymphoid stroma with variable germinal centers.

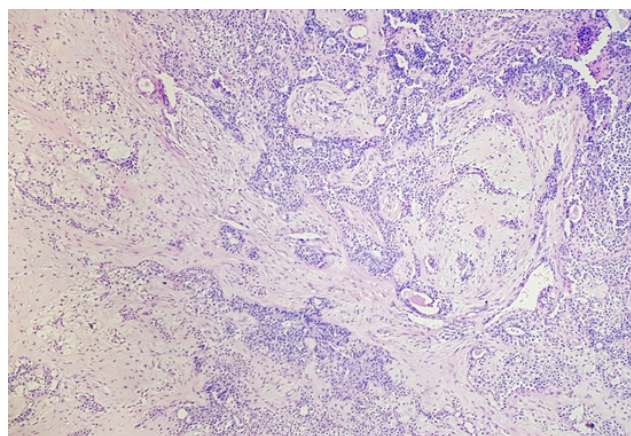


Figure 3. low grade mucoepidermoid carcinoma showing intermediate cells with bland nuclei forming glandular spaces intermixed with mucinous areas.

3 RESULTS:

During the period of two years a total of 69 salivary gland surgeries were performed, which included 42 (60.8%) parotidectomies. Thus, our study included only these 42 cases of parotid gland tumors. The demographic analysis is given in Table 1. Out of 42 cases 25 were female and 17 were male patients. Thus the male to female ratio observed was 1:1.4. At presentation, the main finding was a tumor mass measuring >2cm in size in 73.8% of all cases reported in our study. Superficial lobe of parotid gland was the commonest site involved in Pleomorphic adenoma (twenty cases) Figure 1 was the most frequent benign tumor followed by warthin's tumor Figure 2 (five cases) while as mucoepidermoid carcinoma Figure 3 was the most frequently identified malignant tumor (three cases) Table 2.

The most relevant clinical characteristics of the benign and malignant tumors are shown in Table 3. The ratio between men and women for malignant tumors was 1:2, while for benign tumors it was 1:1.4. The mean age for the presentation of benign tumors was 46 years and for malignant tumors was 58 years.

4 DISCUSSION:

It is essential for the surgeon to have the knowledge in parotid tumors as it is important at the time of diagnosis and treatment. The scientific literature includes some institutional experience in this matter, with most results indicating that benign tumors are the most frequent. Our study also confirms the prevalence of benign tumors in 85.7% of the population studied, close to the proportion reported in other studies, which demonstrate consensus regarding pleomorphic adenoma as the most frequent diagnosis of parotid tumors [3]. As for malignancy, mucoepidermoid carcinoma represents 7% of the studied cases. In 2002, Sungur found an equivalent proportion of malignant tumors in their study. In 2008, studies showed a higher prevalence of mucoepidermoid carcinoma [4]. Mass palpation at parotid gland topography

Table 1. Demographic analysis of data

Parameters	Patients (%)
Females	25 (59.5%)
Males	17 (40.5%)
Median age (min-max)	40 (10-98)
Side	17 (40.4%)
Left	23 (54.7%)
Right	2 (4.7%)
Bilateral	39 (92.8%)
Lobe	2 (4.7%)
Superficial	1 (2.3%)
Deep	
Superficial and deep	
Size	31 (73.8%)
>2 cm	11 (26.2%)
≤2 cm	

Table 2. Histological typing of parotid tumors

Histology	Patients (%)
Benign tumors	36 (85.7%)
Pleomorphic adenoma	20 (55.5%)
Warthin's tumor	5 (13.8%)
Monomorphic adenoma	5 (13.8%)
Non-specific Parotitis	2 (5.5%)
Epidermal cyst	2 (5.5%)
Schwannoma	1 (2.7%)
Multilocated cyst	1 (2.7%)
Malignant tumors	6 (14.3%)
Mucoepidermoid carcinoma	3 (50%)
Undifferentiated carcinoma	2 (33.3%)
Basal cell carcinoma	1 (16.6%)
Total	42

Table 3. Clinical characteristics of benign and malignant tumors.

Characteristic	Benign	Malignant
Number of patients	36	6
Men/women	15/21	2/4
Mean age in years	46	58
Superficial/deep/both	35/1/0	4/1/1

was the main manifestation at the physical examination in the study population, in 93.9% of cases, in agreement with the literature [6]. Most of the malignant tumours in the study were seen in the fifth decades while as benign tumours were more common in fourth decade of life [7]. In our study, females outnumbered males in both benign and malignant group. Many studies show that females are more frequently affected, there is some gender variation in different types of tumors [8].

5 CONCLUSION:

The pleomorphic adenoma is the most prevalent benign histological type while as mucoepidermoid carcinoma is commonest malignant tumor. Malignant tumors are more common in 5th decade while as benign lesions are commoner in 4th decade of life. Both benign and malignant tumors are more prevalent in females than in males.

Conflict of interest: none

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