

**PAROTID TUMOURS: CYTOHISTOPATHOLOGICAL
CORRELATION OF 72 CASES IN TERTIARY CARE HOSPITAL IN
TELANGANA.**

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OBJECTIVE: To evaluate the correlation of cytological findings with histopathological findings in parotid tumours.

MATERIALS AND METHODS: Prospective analytical study of 72 patients with parotid gland tumours subjected to fine-needle aspiration and surgical excision. The current study is a prospective analytical study of 72 parotid tumours performed at the Mahavir Medical College and Hospital, Vikarabadh, from November 2017 to January 2022.

RESULTS: Positive histological results occurred in 32 cases (88.8%) and negative correlation occurred in 4 cases (11.2%) with sensitivity for benign tumours being 96.6% and 50% for malignant tumours.

CONCLUSION: Despite the limitations of fine needle aspiration in parotid gland tumours, it is an effective method for evaluating and therapeutic planning with safe and negligible complications.

INTRODUCTION

The technique of aspiration puncture with a fine needle (APFN) was first used to assess lesions in the salivary gland in 1920^(1,2), and it was improved and popularized in the 1950s and 1960s^(3,4). It is a low-cost, minimally invasive diagnostic evaluation utilised in neoplasia and non-neoplasia injuries that can distinguish between benign and malignant neoplasia injuries⁽⁷⁾. The APFN has significant diagnostic advantages over radiographic results and physical examinations

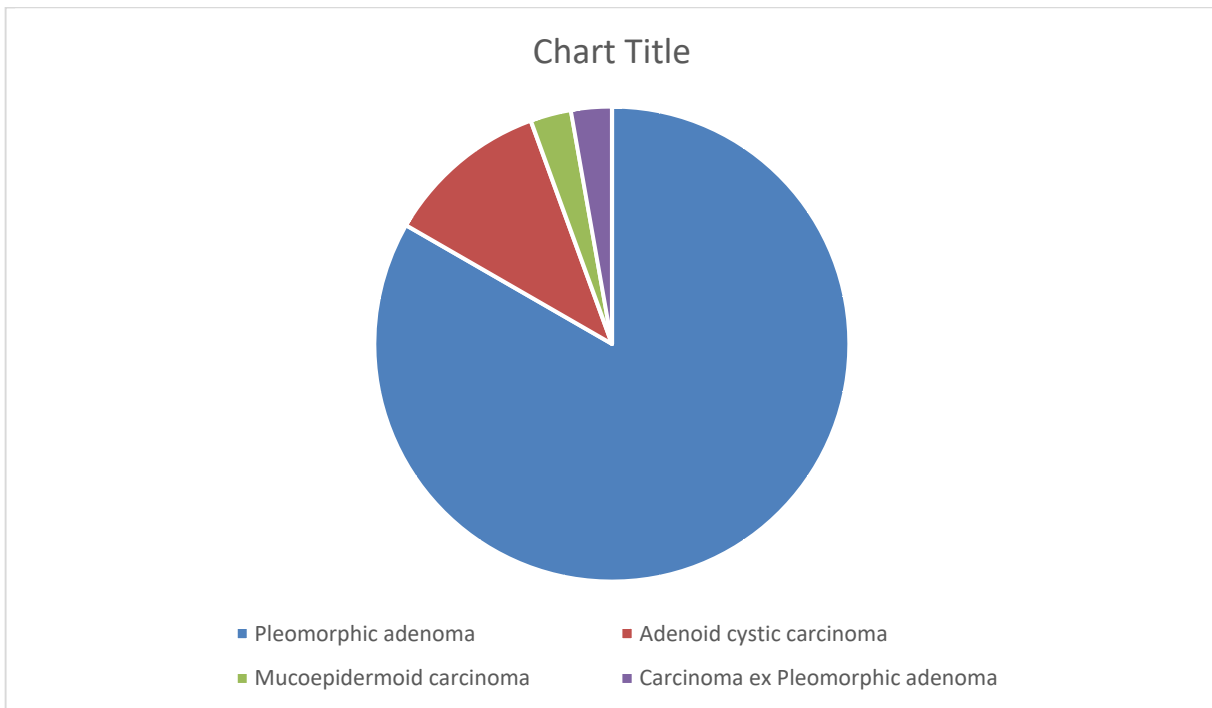
(8,9), as well as surgical conventional biopsies⁽¹⁰⁾ due to the fact that this procedure is not always dischargeable⁽¹¹⁾. Complications include haemorrhages, haematomas, neoplasia spreading, and injury to the facial nerve⁽¹²⁾.

MATERIALS AND METHODS

The current study is a prospective analytical study of 72 parotid tumours performed at the Mahavir Medical College and Hospital, Vikarabadh, from November 2017 to January 2022. Cytological and histopathological correlations of these cases were performed at the Mahavir Medical College and Hospital, Vikarabadh. The study covered all patients who were referred for fine-needle aspiration of Parotid gland tumours and had a Histopathological investigation available. After obtaining the clinical data and noting the dimensions of the swelling and after explaining the procedure to the patients, under aseptic precautions, aspiration was done with a 23g needle connected to a 5 ml or a 10 ml disposable plastic syringe. About two to four smears were prepared in each case. Some of the smears were fixed in 95% ethyl alcohol and a few were air-dried. The air-dried smears were stained by May-Grunwald-Giemsa stain when possible and alcohol fixed smears were stained with H&E. Excision of the tumour was done at the discretion of the surgeon. Excised biopsy specimens were fixed in 10% formalin, thin sections were given from the tumour area and were processed by the routine procedure to obtain the paraffin sections that were stained with H&E. Subsequently Histopathological study was done and results were compared with the cytological diagnosis.

RESULTS

Among the sex-wise distribution of 72 cases of parotid tumours, 42 cases (58.33%) occurred in females and 30 cases (41.67%) in males. The male to female ratio is 1.4:1. The youngest patient presenting with a benign tumour of the parotid was 16 years old and the oldest was 70 years with a mean age of 43 years. The youngest patient presenting with a malignant tumour was 40 years and the oldest was 61 years with a mean age of 50.5 years.



Among the total of 72 cases of cytology samples, 64 were diagnosed as pleomorphic adenoma, 2 cases as mucoepidermoid carcinoma, 4 cases of adenoid cystic carcinoma and 2 cases were given as suggestive of malignancy

TABLE –1 Distribution of Parotid tumours in histopathology.

Sl.No	Tumours	No.of .cases	%
1	Pleomorphic adenoma	60	83.3
2	Adenoid cystic carcinoma	8	11.1
3	Mucoepidermoid carcinoma	2	2.8
4	Carcinoma ex Pleomorphic adenoma	2	2.8
Total		72	100

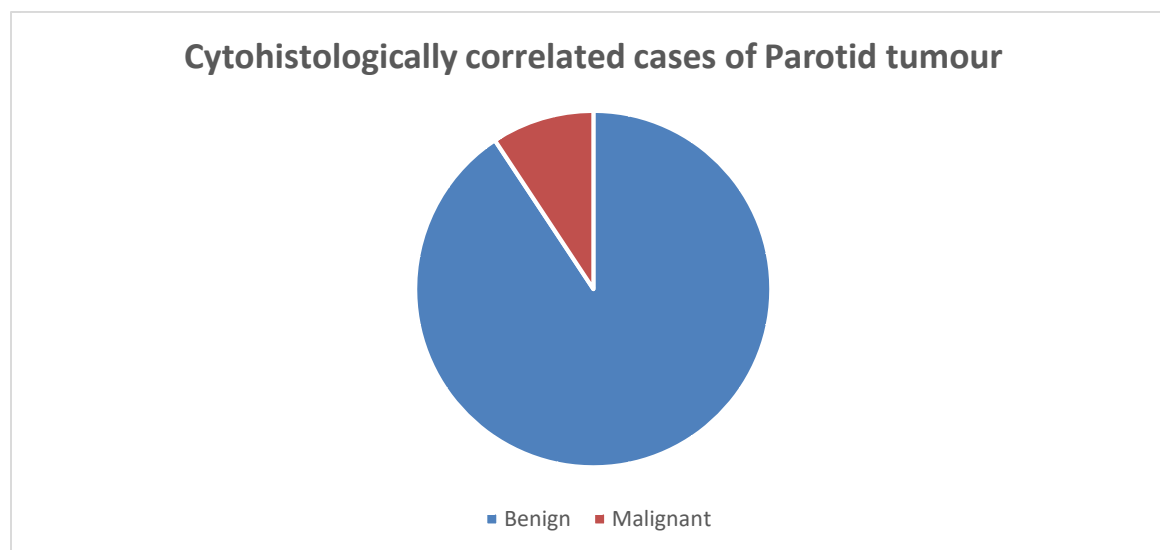
Of the total of 72 cases in the present study 60 cases (83.3%) were found to be Pleomorphic adenomas, 8 cases were (11.4%) were adenoid cystic carcinomas, 2 cases (2.8%) was mucoepidermoid carcinoma and 2 cases (2.8%) was carcinoma ex Pleomorphic adenoma, Among the total of 72 cases of cytopathology samples that were compared with histopathology 8 cases were discrepant and 64 cases correlated.

Of the total 72 cases in the present study 60 were diagnosed as benign and 12 malignant on histopathology. Whereas 72 cases were diagnosed as benign and 8 as malignant in cytology

TABLE – 2 Table showing Cytohistologically correlated cases of Parotid tumours

Histopathological Diagnosis	No. Of. Cases with %
Benign	58 (90.7%)

Malignant	6(9.3%)
Total	64



Of the total 72 cases in the present study 64 cases correlated out of which 58 cases (90.7%) were benign and 6 cases(9.3%) were malignant.Of 72 cases in the present study 64 cases correlated out of which 58 cases (90.7%) were Pleomorphicadenomas, 2 cases (3.1%) of Mucoepidermoid carcinoma, 2cases (3.1%) of Adenoid cystic carcinoma and 2cases (3.1%) of carcinoma ex pleomorphic adenoma.

TABLE -3 The table summarizes the cytological and histological results of 74 cases included in the study.

HISTOPATHOLOGICAL DIAGNOSIS

Cytological diagnosis	Pleomorphic adenoma	Mucoepidermoid carcinoma	Adenoid cystic carcinoma	Carcinoma ex pleomorphic adenoma
Pleomorphic adenoma (64)	58	--	6	--
Mucoepidermoid carcinoma (2)	--	2	--	--
Adenoid cystic carcinoma (2)	2	--	--	--
Malignancy (4)			2	2
TOTAL	60	2	8	2

Of total no. Of 72 casesincludedinthepresentstudy, 64 cases were diagnosed as Pleomorphic adenoma by cytology of which 58 cases were Pleomorphic adenoma and 6 cases were Adenoid cystic carcinoma on histopathology. A single case diagnosed as Mucoepidermoid carcinoma correlated with histopathology. The single case diagnosed as Adenoid cystic carcinoma on cytology was found to be Pleomorphic adenoma on histopathology. Of the two cases which were

reported as suggestive of malignancy, 2 cases turned out to be Adenoid cystic carcinoma and the other Carcinoma ex- Pleomorphic adenoma on subsequent histopathology.

DISCUSSION

The general incidence of salivary gland tumours was about 6- 6% of all head and neck tumours and Parotid gland tumours account for 65% of these. About 80% of these are benign tumours and Pleomorphic adenoma is the commonest, accounting for 55% of all parotid tumours and 80% of benign tumours (memorial Sloan Kettering cancer centre, New York Data).

The present study exhibited an incidence of 83.3% of benign tumours and 16.7% were malignant with Pleomorphic adenoma accounting for 100%. According to Memorial Sloan Kettering cancer centre statistics, 75% were benign and 25% were malignant. According to the present study, 83.3% were benign and 16.7% were malignant, According to the present study, Pleomorphic adenoma accounted for 83.3%, Adenoid cystic carcinoma for 11.1%, Mucoepidermoid carcinoma and Carcinoma ex pleomorphic adenoma for 2.8%. In the Spiro series⁽¹³⁾ Pleomorphic adenoma accounted for 45.4%, Adenoid cystic carcinoma for 10%, Mucoepidermoid carcinoma for 15.7% and Carcinoma ex pleomorphic adenoma for 5.7%. In Khalid series⁽¹⁴⁾ Pleomorphic adenoma accounted for 66.67% and Mucoepidermoid carcinoma for 11.1%. According to the present study 42 cases (58.33%) were females and 30 cases (41.67%) were males with a male-female ratio of 1.4:1. Among the benign tumours of the parotid, the youngest was 16 yrs and the oldest was 70 yrs with a mean age of 43 yrs. Among the malignant tumours of parotid in the present study, the youngest was 40 yrs and the oldest was 61 yrs with a mean age of 50.5 yrs. The highest incidence of benign tumours was in the age group of 21-30 yrs and for the malignant tumours, the age group was 31-50 yrs. Of the 72 cases in the present study 60 were diagnosed as benign and 12 as malignant on histopathology whereas 64 cases were diagnosed as benign and 8 as malignant on cytology. According to the present study, the youngest patient was 16 yrs of age while the oldest was 70 yrs of age. The great majority of the patients were in the 21-40 yrs age group. According to the present study of 72 cases, only 12 cases were found to be malignant of which adenoid cystic carcinomas were 8 cases (66.6%) of all malignant tumours. Mucoepidermoid carcinoma 2 cases (16.7%) and carcinoma ex pleomorphic adenoma 2 cases (16.7%). In the present study of 72 cases, 64 cases were diagnosed as benign on cytology, of which only 58 cases were benign i.e. 6 cases were reported as false positive. Incidence of malignancy on histopathology was 12 cases whereas only 8 cases were diagnosed as malignant on cytology, of which 6 cases were true positive and 2 was false positive. The sensitivity of F.N.A.C for benign lesions was 96.66%, whereas sensitivity for malignant lesions was 50%.

TABLE- 4 The distribution of various tumours in comparison with Spiro series and Khalid series.

Type of tumour	Percentage in present series	Spiro series ⁽¹³⁾	Khalid series ⁽¹⁴⁾
Pleomorphic adenoma	83.3%	45.4%	66.67%
Adenoid cystic carcinoma	11.1%	10%	-
Mucoepidermoid carcinoma	2.8%	15.7%	11.1%
Carcinoma ex pleomorphic adenoma	2.8%	5.7%	-

TABLE -5 The table shows comparative studies of the sensitivity of F.N.A.C of Parotid tumours

	Present study	J.P.ShahJanet.et al ⁽¹⁶⁾	Jayaram Verma et al ⁽¹⁷⁾	Deans briggs et al ⁽¹⁸⁾	iffaretti et al ⁽¹⁹⁾
Sensitivity for benign tumours	96.66%	95%	100%	88%	89.7%
Sensitivity for malignant tumours	50%	65%	87%	66%	-

CONCLUSION

Despite its limitations, fine needle aspiration cytology is cost-effective and safe, with few side effects. With just 50% sensitivity for malignant tumours, being negative for malignancy on cytology does not rule out malignancy, and overlapping cytomorphological features were discovered to be the most common cause of diagnostic mistakes on cytology.

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