



## AN EPIDEMIOLOGICAL STUDY OF PREVALENCE OF SALIVARY GLAND NEOPLASM IN POPULATION OF GARHWAL REGION OF UTTARAKHAND

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### ABSTRACT

Salivary gland neoplasm are rare group of tumors involving parotid gland in majority followed by submandibular gland and minor salivary glands. Majority of them are benign with less than 1% are malignant in nature. This study was done in a medical collage situated in Pauri Garhwal district of Uttarakhand catering health facility to Pauri, Chamoli, Rudraprayag and Tehri district population of Uttarakhand. The period of study was from 2018-2023 and a total of 21 cases were studied. Patients presenting with Salivary gland swelling was evaluated first by Ultrasound Scans and FNAC, thereafter surgery was done and post operative diagnosis was confirmed through HPE. Majority of neoplasm (99%) were benign and were mainly involving parotid gland followed by submandibular gland. A Male:Female ratio was found to be 4:3. Majority of cases were found to be pleomorphic adenoma (98%). One case of mucoepidermoid carcinoma was found and one case of Warthin's tumor was found. Both of these tumors were found in parotid gland in different patients. This epidemiological study was found to be in alignment with the various studies on salivary gland neoplasm done world wide.

**KEYWORDS :** FNAC (Fine needle aspiration cytology), HPE(Histopathological examination), Neoplasm, Benign, Malignant, Salivary, Gland.

### INTRODUCTION

Tumors of salivary glands consists of subset of neoplasm that show diversity both clinically and morphologically.

Because of their diversity and rarity, they posses considerable challenges in the diagnosis and management.<sup>(1)</sup>

Salivary gland neoplasm comprises of 3% of head and neck neoplasm and 0.3% of all malignancies.<sup>(2,3)</sup>

About 80% of salivary gland neoplasm are benign.<sup>(1)</sup> Most of the salivary gland neoplasm show female preponderance. Parotid gland tumors are most common followed by submandibular and minor salivary gland tumors. Benign neoplasm are more common than the malignant one.<sup>(4)</sup> Pleomorphic adenoma is most common parotid gland tumor followed by Warthin's tumor and accounts for 55% of all parotid masses.<sup>(4)</sup>

Pleomorphic adenoma shows an annual incidence of 2.4-3.5 per lakh.<sup>(5)</sup> Mucoepidermoid carcinoma is the most common salivary gland malignancy arising from ductal epithelium. It accounts for 47-50% of all malignant tumors showing recurrence in about 15% of all the cases.<sup>(6)</sup> All though, in earlier studies it was noted that it has benign and malignant varieties but due to subsequent metastasis of previously considered benign variant it was concluded that all mucoepidermoid tumors are carcinomatous.<sup>(7)</sup> Among the major salivary glands, it is most commonly found in parotid gland.<sup>(8,9)</sup>

Warthin's tumors also known as adenolymphoma which is benign and common salivary gland neoplasm after pleomorphic adenoma in parotid gland. It is mostly found in elderly males and in chronic smokers. However, its etiology remains controversial.<sup>(10)</sup> Warthin's tumor has a rare malignant transformation an accounts for 0.3% of all the cases.<sup>(11)</sup>

### MATERIAL AND METHODS

This study was a retrospective study with period of study from 2018-2023. The place of study was Veer Chandra Singh Garhwali Government Medical Collage Srinagar, Pauri Garhwal and department concerned was Ear, Nose and Throat. The total numbers of patients were 21. The patients coming in ENT OPD were first investigated with means of Ultrasound Scan and Fine Needle Aspiration Cytology. After confirmation of salivary gland neoplasm, planning of surgery

was done. For benign neoplasm in parotid gland superficial parotidectomy/ enucleation was done. For malignant neoplasm in parotid gland total parotidectomy was done. For submandibular gland neoplasm, excision in toto was done. The excised specimen was sent for histopathological examination in pathology department after which preoperative diagnosis was confirmed with post operative diagnosis. It should be noted that average number of patients coming in ENT OPD during the period was 70 per day. So on average 1400 patients monthly and 16800 annually.

### RESULTS

Out of 21 patients 12(57%) were male and 9(4.3%) were female. Male:Female ratio was 4:3.<sup>(Chart1)</sup>

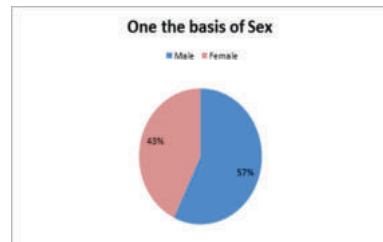


Chart 1

Out of 21 patients, 13 were above 40 years and 8 were below 40 years. Benign neoplasm were 20(86%) in number and 1(14%) was found to be malignant.<sup>(Chart2)</sup>

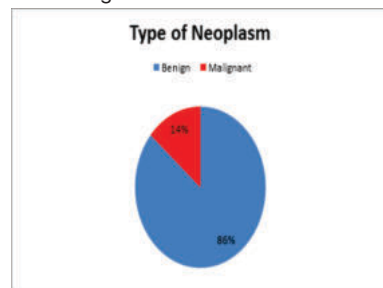


Chart 2

19(89%) patients were having pleomorphic adenoma which was confirmed through histopathological examination. 1(5%) case was reported as mucoepidermoid carcinoma and one (6%) reported as Warthin's tumor respectively.<sup>(Chart3)</sup>



Chart 3

17(71%) out of 21 patients were having these neoplasm in parotid gland and 4(29%) out of 21 were having these neoplasm in submandibular gland. <sup>(Chart4)</sup>



Chart 4

The accuracy of preoperative diagnosis through Ultrasound scans and FNAC were found to be 100% with post operative histopathological diagnosis.

**DISCUSSION**

We observe that according to previous studies we found that benign neoplasm are more common than malignant one, as studied by Speight PM et al <sup>(1,4)</sup> Also parotid gland was most common salivary gland involved. <sup>(1,4)</sup> Pleomorphic adenoma was most common benign tumor among all sexes as studied by Barnes et al. <sup>(5)</sup> One case of mucoepidermoid carcinoma was found for which total parotidectomy was done and the patient was later send to oncology department to prevent the recurrence. The Male:Female ratio was found to be 4:3 which was against the findings of Przewozny et al ,Spiro et al that there is Female preponderance. <sup>(12)</sup> As according to history taken from the patient such as dietary habits, smoking or any history of viral fever was found to be non contributory in relation to the disease. Till date, no patient had came with recurrence of the disease which justifies the technique used for surgery. No post operative complication were reported.

**CONCLUSION**

Salivary gland neoplasm are rare group of neoplasms which primarily affects the parotid gland and most of them are benign in nature. If properly treated they rarely show morbidity and recurrence.

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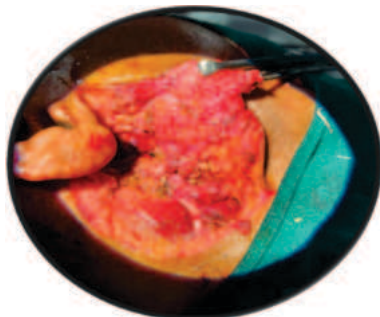


Fig.no 1: Superficial parotidectomy done in one of the patient with facial nerve exposed.

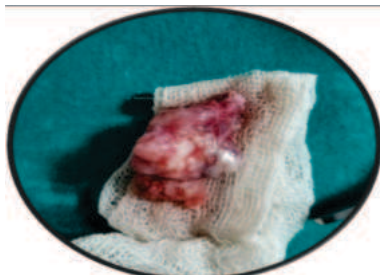


Fig no.2: Excised pleomorphic adenoma from the same patient.