

Pathological Conditions Of Salivary Gland (A Case Series Of 45 Cases)

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Abstract: Salivary gland pathology represents the complex and diverse entity. Their diagnosis and management is complicated because of limited amount of pre-treatment information available and the wide range of biologic behavior seen with the different pathologic lesions. Proper management of this pathology requires an accurate diagnosis by the pathologist, correct interpretation by surgeon, knowledge of the surgical anatomy of salivary glands with clear understanding. We present our experience with 45 cases of salivary gland pathology to study incidence, various radiological modalities, medical and surgical treatment and prognosis various pathological conditions involving salivary gland [Chauhan N et al NJIRM 2013; 4(1) : 136-139]

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Introduction: The importance of salivary glands is always under recognized. We do not find detailed literature on various pathologies affecting salivary glands.

Parotid, Submandibular and Sublingual are three paired major salivary glands. There are numerous minor salivary glands in sub mucosa of oral cavity and pharynx. Salivary glands secrete saliva, which contains different enzymes to help in digestion, dissolution of solid substances and maintenance of oral cavity hygiene. Average amount of saliva secreted in 24 hour is 1200-1500 cc¹.

Most of the time swelling of the gland is the presenting symptom. The diagnosis and management is complicated because of the wide range of biologic behavior seen with the different pathologic lesions of salivary glands. Manifestation of various conditions like viral infection, abscess formation, sialolithiasis, benign cyst and certain malignant tumors share similarities. In spite of recent advances in investigations, misdiagnosis in salivary gland disorders is not uncommon. Proper management of this pathology requires an accurate diagnosis by the pathologist, correct interpretation by surgeon, knowledge of the surgical anatomy of salivary glands with clear understanding. Hence, a prospective study on salivary gland pathology was conducted.

Material and Methods: Total 45 cases that had primary salivary gland disorders were included in the study irrespective of their age, sex and socio-economic status from May 2005 up to December 2007 at Department of E.N.T. and Head and Neck Surgery, at Govt. Medical College and Shree Sayajirao General Hospital, Vadodara. Patients having secondary metastasis in the salivary gland or lymph node enlargement within the gland with apparently normal gland were not included.

Each patient was admitted in the hospital and detailed history was taken and thorough local, general and systemic examination was performed and routine investigations were done. Fine needle aspiration cytology, ultra sonography, plain x ray and CT scan were used as and when needed.

In infectious disorder like parotitis, antibiotics were given. In cases like parotid abscess – Incision and Drainage was performed and injectable antibiotics were given and pus was sent for culture and sensitivity examination.

Plain skiagram was done in case of sialolithiasis. The stone was removed by incising the duct in suitable cases. Submandibular gland was excised in case of sialadenitis and deep cided stones. Cases of ranula were investigated with the help of fine needle aspiration and ultra sonography and treated by excision.

Suspected cases of tumor were subjected to CT scan to know the extent and fine needle aspiration cytology to know its benign or malignant nature. Most of patients were treated surgically. Tumor was excised en mass and sent for histopathological correlation. Patients having malignancy were advised radiotherapy and/or chemotherapy as required. Post operative complications were noted and treated. Subsequent post operative follow up at regular interval was carried out up to satisfaction in case of benign pathology and minimum three years for malignancies. Some patients with inoperable malignancies were offered palliation in the form of radiotherapy and chemotherapy.

Result: Total 45 cases were included in the study. Majority of our patients were in 31-50 years age group. 58 % of patients were females and 42% were males. Patients were presented with complaints of neck swelling and pain over swelling. Most of the patients were investigated in the form of fine needle aspiration cytology (82%), ultra sonography (82%), and 32% of patients underwent CT scan. Most pathology arises from parotid gland 62%, while 29% had submandibular gland pathology and 9% had sublingual or minor gland pathology.

Table 1 shows distribution of various types of pathologies in different salivary glands.

Table 1 Involvement of salivary glands in various pathological conditions.

Salivary glands	Non Tumor	Benign Tumor	Malignant Tumor	Total
Parotid	09	13	05	27
Sub mandibular	13	01	00	14
Sublingual	02	00	00	02
Minor glands	00	01	01	02
Total	24	15	06	45

We have divided the salivary gland pathologies in two broad groups: Tumor and Non Tumor. The Non tumor group includes acute infections and

chronic inflammatory conditions e.g. sialadenitis, sialolithiasis, retention cyst and ranula. The main cause here is some obstruction in the duct system resulting in stasis of secretions within the gland. Establishment of good salivary flow can prevent them and cure early lesions. The treatment comprises of antibiotics and anti-inflammatory medicines along with drainage of secretions. If normal salivary flow cannot be established, excision of the affected gland is justified.

The Tumor group can be subdivided in Benign and Malignant. The spectrum ranges from purely benign to very malignant tumors with all in-between grades. At times needle aspiration cytology studies are misleading. Final diagnosis can be done only after detailed histopathological examination of various sections of excised specimen.

Total 24 (53%) pathologies were Non tumor and 21(47%) pathologies were tumors, so almost equal occurrence of inflammatory and neoplastic lesions.

Discussion: If we discuss according to glands, the Parotid gland has peculiar tendency: 18 out of 27 (67%) for neoplastic lesions. Majority of them were benign (fig 1), either pleomorphic adenoma or lymphoepithelioma (Warthine’s tumor).

Figure 1. Pleomorphic adenoma of Lt. Parotid gland



In study done by Nitin Nagarkar et al² out of 24 parotid tumor 14(58%) were pleomorphic adenoma. In study done by Jaffrey S. Wolf et al³ out of 1935 parotid neoplasm 1189 (61%) were pleomorphic adenoma. We found 9/18 (50%) parotid tumor as pleomorphic adenoma. Jiannis Hajiionnou et al⁴ noted 85% of all pleomorphic adenoma occur in parotid gland, 10% in minor salivary gland & 5% in submandibular salivary gland. In present study out of 11 pleomorphic adenoma, 9 (82%) were in parotid gland, 1 (9%) each in submandibular & minor salivary gland. FNAC could differentiate between benign and malignant lesions in all cases, but in 2 cases the tumor type was not correctly identified by it.

Inflammatory lesions of parotid gland are either acute infection resulting in abscess (4) or bilateral non-suppurative parotitis presenting with unilateral (2) or bilateral (3) symptoms. Chronic sialadenitis is not seen in parotid glands. Thus in parotid gland pathologies most distinctive is parotid abscess, which can be diagnosed purely clinically. For other painful lesions always check second parotid gland as bilateral inflammation of the glands due to viral or immune etiologies are very common. These patients may present with unilateral symptoms due to more involvement of one gland. Unilateral painless swelling of parotid gland is a neoplasm until proved otherwise. FNAC is very important investigation for preoperative

differentiation between benign and malignant lesions. Excision of the tumor with superficial parotidectomy is the treatment of choice for all benign neoplasia. Facial nerve can be preserved in all patients. For operable malignant tumors, we did total parotidectomy (3) with suitable neck dissection. During surgery facial nerve was preserved anatomically, but 2 patients developed facial nerve palsy- one immediate postoperatively and other after radiotherapy, along with recurrence. Thus facial nerve preservation in total parotidectomy for malignant tumor should not be tried as it may compromise with tumor clearance and anatomical preservation does not guarantee nerve function. 3 out of 5 patients of malignant tumor of parotid succumb to the disease in first three years, 2 were inoperable on first presentation and 1 developed recurrence after surgery and radiotherapy which was inoperable.

In submandibular gland, chronic sialadenitis (fig 2) with or without stone is the commonest problem (13 out of 14). Various measures to remove inflammation, increase salivary flow and improve oral hygiene tried with temporary success. Eventually surgical excision of the gland cured all of them.

Figure 2. Calculi in Right Side Submandibular gland



Minor salivary glands pathologies are uncommon. In the study by Ronald et al⁵ describing 5,539 (23%)

minor salivary gland involvement Out of which 44% are benign and 56% are malignant neoplasm and common site of involvement is palate, comparing the above study in our study out of 2 , 1 patient (50%) had benign pleomorphic adenoma and other patient had malignant adenoid cystic carcinoma. Thus minor salivary gland neoplasms are uncommon but there are more than 50% chances that they are malignant. FNAC was helpful only to know the salivary origin of the tumor. It could not differentiate between benign and malignant lesions. Surgical excision cured both the patients.

Ranula of sublingual gland is known for recurrence after surgical excision. One of our patients had five recurrences (fig 3) starting from floor mouth to shifting down in the neck, each after more aggressive surgical excision. It is difficult to understand causes of occurrence and recurrence of these lesions. There must be a complex interlinked drainage system for sublingual salivary glands.

Figure 3. Recurrent Ranula



Conclusion: Pathological conditions affecting salivary glands can be divided in two broad categories: Inflammatory and Neoplastic.

Inflammatory lesions commonly affect submandibular and sublingual salivary glands and are usually chronic in nature and have unilateral involvement.

Inflammatory lesions affecting parotid glands are usually acute and may have bilateral involvement. In parotid gland neoplastic conditions are more common and majority of them are benign. FNAC is very important preoperative investigation to differentiate between benign and malignant tumors.

Benign tumors of parotids should be excised with superficial parotidectomy and facial nerve preservation. All malignant tumors of parotid should be treated aggressively by total parotidectomy and suitable neck dissection. One should not attempt to preserve the facial nerve by compromising en block tumor clearance in patients having malignant tumors.

References:

1. Kontis TC, Johns Me. Anatomy and Physiology of the Salivary Glands. *Head and Neck Surgery-Otolaryngology, Second Edition*, ed. Byron J. Bailey. Lippincott-Raven Publishers, Philadelphia, PA. 1998: 531-539.
2. Nitin N. Nagarkar et al; Salivary gland tumour; our experience; Gujarat Journal of Otorhinolaryngology and Head & Neck Surgery, Vol. 6 No. 2, Nov-Dec. – 2009, 14-35.
3. Jeffrey S. Wolf et al. Pleomorphic adenoma of parotid gland.
4. Jiannis and Yannis et al. Giant Pleomorphic adenoma of parotid gland. The internal Journal of Otorhinolaryngology ISSN: 1528-8420-2006, Vol. 4 number, 2006, 2-8.
5. Ronald Koppersmith et al; Minor salivary gland tumour. Baylor college of Medicine, Dept of Otolaryngology; page 1-13.

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