

Non Neoplastic Lesions Of Salivary Gland

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ABSTRACT:

A large group of non-neoplastic disorders can affect the salivary glands, although the more common are: mumps, acute suppurative sialadenitis, Sjögren's syndrome and drug-induced xerostomia. Salivary dysfunction is not a normal consequence of old age, and can be due to systemic diseases, medications or head and neck radiotherapy. Diagnosis of salivary disorders begins with a careful medical history, followed by examination. While complaints of xerostomia may be indicative of a salivary gland disorder, salivary diseases can present without symptoms. Therefore, routine examination of salivary function must be part of any head, neck, and oral examination. Health-care professionals can play a vital role in identifying patients at risk for developing salivary dysfunction, and should provide appropriate preventive measures and treatment.

KEYWORDS: Salivary Gland Disorders, Non Neoplastic, Salivary Diseases

INTRODUCTION:

- Non neoplastic disorders of salivary glands includes a spectrum of conditions ranging from developmental, inflammatory to functional disorders.
- The major salivary glands are commonly affected, minor salivary glands are involved especially in traumatic and auto immune disorders

CLASSIFICATION:

1.RICE(1999)¹

- Acute inflammatory lesions
 - Mumps
 - Acute suppurative sialadenitis
- Chronic inflammatory lesion and disorders
 - Sjogren's syndrome
 - Mikulicz disease
 - Necrotising sialometaplasia
 - Chronic suppurative & sclerosing sialadenitis
- Granulomatous disease
 - Primary Tuberculosis of salivary gland
 - Cat scratch disease
 - Sarcoidosis
 - Sialolithiasis
- Cystic lesions

- Radiation injury
- Trauma
- Sialadenosis
- Others

2.ROSEN(2001) ²

- Inflammatory
 - Mumps
 - CMV(cytomegalovirus) Parotitis
 - Acute suppurative sialadenitis
 - Chronic suppurative sialadenitis
 - Recurrent parotitis of childhood
 - Benign lymphoepithelial lesion
 - Tuberculosis
 - Actinomycosis
 - Atypical Mycobacterial infection
 - Sarcoidosis
 - Sjogren's syndrome
- Non inflammatory
 - Sialolithiasis
 - Cysts
 - Radiation
 - Trauma
 - Sialadenosis
 - Pneumoparotitis
 - Cheilitis Glandularis
 - Necrotising sialometaplasia

3.WORKING CLASSIFICATION BASED ON ETIOLOGY

- Developmental disorders
 - Aplasia/Hypoplasia
 - Accessory ducts /lobes
 - Agenesis
 - Ductal Atresia
 - Aberrancy
 - Polycystic disease of parotid
- Traumatic/ischemia
 - Cheilitis Glandularis
 - Mucocele
 - Ranula
 - Stomatitis Nicotina
 - Necrotising Sialometaplasia
 - Mucous retention cyst
- Infection
 - Sialadenitis –Inflammation of salivary gland
 - Acute/chronic

- Specific/non specific
- Suppurative/non suppurative
- Bacterial –Staphylococcus, Streptococcus , Primary Tuberculosis
- Viral- Mumps, Cytomegalovirus, Echo virus, influenza
- Human ImmunoDeficiency virus salivary gland disease
- Fungal- Aspergillosis
- Autoimmune
 - Sjögren’s syndrome
 - Mikulicz disease
 - Chronic sclerosing sialadenitis
- Cysts
 - Lymphoepithelial cysts
- Functional
 - Sialorrhea
 - Xerostomia
 - Obstructive
 - Sialolithiasis
 - Strictures
- Endocrine
 - Sialosis
- Drug induced
 - Chlorhexidine
 - Iodine
 - Phenyl Butazone
- Miscellaneous
 - Sarcoidosis
- Radiation damage

INFLAMMATORY DISEASES:

Acute suppurative sialadenitis:

Bacterial infection of parotid, sometimes involves submandibular glands. About 30 to 40% cases occurs in post operative patients , usually between 3 to 5 days. Occurs following surgery involving the GI tract and are seen equal incidence in male and female of age between 50s and 60s of ages. Salivary stasis secondary to either obstruction or decreased production is known to be a cause. In postoperative patients, dehydration and decreased oral intake results in decreased saliva production and increased risk of acute sialadenitis. Clinically sudden diffuse enlargement of involved gland with induration and tenderness , purulent saliva from ducts sometimes seen, (20% seen bilaterally) The pus can be collected from the affected gland followed by gram stain and cultures. Treatment includes hydration, improved oral hygiene , repeated massage of gland, IV antibiotics, warm compressive and sialogogues. If no improvement incision and drainage can be done³Chronic

sialadenitis : It is common in parotid, it is precipitated by decreased salivary flow resulting from stasis. It occurs from progression of recurrent parotitis of childhood , mostly occurs from damage during acute suppurative infection . Sialectasis, ductal ectasia , progressive acinar destruction and lymphocytic infiltrates are seen within the gland. Typically patient with chronic sialadenitis experience mild pain and recurrent parotid enlargement which worsen with eating and about 80% patients developed permanent xerostomia. Predisposing factor to be identified and treated. Mostly managed with sialogogues, massage, heat, hydration and antibiotics during the

acute attacks. Other management includes periodic ductal dilatation, duct ligation, total gland irradiation, tympanic neurectomy or excision. Surgical excision of gland is the only effective treatment.⁴

Recurrent parotitis of childhood:

It is more common in male children. Commonly juvenile recurrent parotitis is rare, also second most common inflammatory salivary gland disease of childhood behind mumps. Initially diagnosed as mumps. Signs and symptoms include acute and subacute swelling of parotid gland, usually with associated pain, fever and malaise. The disease is usually unilateral, age groups of 5-7 years, onset of 3 months to 16 years. There is no effective means of prophylaxis for this condition and Penicillin is a good choice for acute infection. In addition, massages, warmth, good oral hygiene, sialogogues and chewing gums are also helpful. Parotid duct ligation, tympanic neurectomy and parotidectomy are the treatment options.⁵

Benign lymphoepithelial lesion (BLL

Chronic recurrent parotitis can result in Benign Lymphoepithelial Lesion. Usually asymptomatic enlargement of one gland, no treatment is necessary unless there is associated cosmetic deformity and it can also evolve into Lymphoma, Undifferentiated carcinoma or pseudolymphoma.⁶

Mumps

This represents not only the most common cause of parotid swelling but also the most common viral disorder of the salivary gland. Peak incidence of the disease occurs between ages 4 and 6 years. All the major salivary glands may be involved, including one or both parotids. Typically, there is a 2-3 week incubation period with associated fever, malaise, myalgia, head ache which may precede the observed swelling. Major complications of mumps are uncommon, but can be debilitating. These include sudden deafness, pancreatitis, meningitis, orchitis, the formation of islet cell antibodies with rapid onset of Type 1 Diabetes Mellitus, and chronic obstructive sialadenitis.⁷

CMV: (Cytomegalo virus infection)

This is the second most common viral disorder of the salivary glands and characteristically affects newborns. It can result in mental and physical retardation, hepatosplenomegaly, jaundice and thrombocytopenic purpura.⁸

Primary tuberculosis (TB):

Tuberculosis is a common cause of granulomatous disease of the salivary gland though it is relatively rare in the head and neck. Usually tuberculosis affects one side and targets the parotid gland. The involvement of salivary gland arises from tooth or tonsil infection. Primary Tuberculosis occurs in two forms: acute inflammatory lesion or chronic tumorous lesion. Commonly diagnosed using Acid fast staining method. Treatment involves anti-tubercular medication; if resistance occurs, the gland or tumorous lesion is to be excised.⁹

Secondary tuberculosis

It refers to the involvement of the salivary glands in setting of systemic tuberculosis infection, in particular, pulmonary Tuberculosis involving submandibular and sublingual glands more frequently than the parotid gland.¹⁰

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Sjogren`s syndrome:

Sjogren`s syndrome is chronic, slowly progressive, relatively benign autoimmune disease characterized by lymphocyte-mediated destruction of the exocrine glands resulting in keratoconjunctivitis sicca and xerostomia. The disease primarily affects middle aged women, but can be seen in all ages. Mean age at onset 50 years it is associated with high prevalence of drug allergies and 44% of patients with Sjogren`s report an allergy to penicillin. There are two forms of the disease Primary and Secondary. In primary form pathology is limited to the exocrine gland and about 80% of these patients have salivary gland enlargement. The secondary form associated with a defined autoimmune disease, most commonly Rheumatoid Arthritis and Systemic Lupus Erythematosus and about 30-40% of patients have salivary gland enlargement. About 30% of patients with autoimmune rheumatic diseases have secondary Sjogren`s. The signs and symptoms of Sjogren`s begin with dry mouth (xerostomia) and dry eyes (keratoconjunctivitis sicca), difficulty in swallowing and speaking continuously , burning sensation , increased dental caries and problems with wearing complete dentures. On physical examination oral mucosa will be dry, erythematous and sticky. Also aphthous ulcer and atrophy of the filiform papillae on the dorsum of the tongue can be observed. Saliva expressed from the salivary ducts will either be non-existent or scant and cloudy. There is decrease in salivary flow rate and a change in salivary composition. Patient also has fatigability, low grade fever, myalgias and arthralgias. Sjogren`s is associated with increased risk of developing Non-Hodgkin`s lymphoma and Multiple myeloma. Persistent salivary gland enlargement or persistent lymphadenopathy should raise suspicion. HIV and Sarcoidosis can produce a clinical picture indistinguishable from Sjogren`s HIV, which is associated with simultaneous enlargement of the submandibular glands and is more likely in young men. Meanwhile, Sjogren`s syndrome can be treated by minimizing signs and symptoms. The key is fluid replacement. Diuretics, antihypertensive and antidepressants should be avoided. Pilocarpine 5 mg TID is helpful for xerostomia. Hydroxchloroquine is helpful for associated arthralgia. ³

Mikulicz disease:

It is symmetric or bilateral chronic painless enlargement of lacrimal or salivary gland. Middle aged woman are most commonly affected. Unilateral or bilateral enlargement of parotid or submandibular glands can be seen. Usually fever, upper respiratory tract infection, occasional pain, xerostomia, enlargement of gland are observed. Treated using surgical excision. ¹

TRAUMATIC DISORDERS:

Mucocele:

Most common benign soft tissue masses occurring in the oral cavity and probably the most common minor salivary gland disorder. They arise in both genders and in all age groups. The peak age of incidence being between 10 to 29 years. Results from traumatic severance of a salivary duct, produced by the biting the lips or cheek. Common site of involvement is labial mucosa and size of oral mucocele vary from 1mm to several centimeters and are slightly transparent with bluish tinge. On palpation , mucocele may appear fluctuant but can also be firm. Their duration lasts from days to years, and may have recurrent swelling with occasional rupturing of its contents. It resolves on its own and if persists for longer duration requires surgical removal. Now a days lasers are used for removal. ¹¹

Ranula

Most commonly occurs on the floor of the mouth in association with the ducts of the sub maxillary and sublingual gland. It develops as a slow enlarging painless mass in the floor of the mouth. Since the lesion is usually deep seated the overlying mucosa is normal in appearance or translucent bluish colour. Treated using surgical excision. ¹²

Necrotising sialmetaplasia:

It occurs due to trauma, surgery or radiation and vascular ischemia is said to be the main cause. It is also associated with smoking. Clinically males are commonly affected, peak incidence at 5th decade which involves minor salivary glands of palate. A painless swelling with or without ulceration roughly 1 – 3cm in size which may be unilateral or rarely bilateral. Typical presentation with crateriform ulcers similar to malignancy with erosion of palatal bone may be seen. Resolves spontaneously within 2 weeks or up to 5 weeks on palate.¹³

NON INFLAMMATORY DISEASES

Sialolithiasis:

About 80% of sialolithiasis affects the submandibular gland and duct, with slightly less than 20% involving the parotid . Peak incidence occurs in middle age and affects males more often than females. Predisposing factors include chronic sialadenitis (common) , and gout, which results in uric acid calculi. About 90% of submandibular calculi are radiopaque and 90% of parotid calculi are radiolucent. Signs and symptoms of Sialolithiasis include pain in the affected gland and recurrent swelling. The symptoms worsen with eating and decreased salivary flow with a cloudy or mucopurulent saliva. Complications include acute sialadenitis, ductal ectasia and stricture. If stone occurs near the duct orifice, Trans oral removal with marsupialization is done and recurrence rate is 18%. If stone is near the hilum of the duct , then excision of the gland is necessary.¹

Cys

Salivary gland cysts usually affect the parotid gland it may be congenital or acquired . Dermoid cysts, ductal cysts, and first branchial cleft cysts are the congenital lesions. Acquired Salivary gland cysts may be caused by benign lymphoepithelial lesions ,trauma, parotitis, calculi, duct obstruction, mucous extravasation, or neoplasms. Treatment is surgical excision¹

Radiation:

Low dose radiation is associated with acute, painful swelling of the salivary gland. Serous cells are more radiosensitive than mucous cells. If the radiation is stopped the acute response subsides. If continued complete destruction of serous acini and gland atrophy occurs.¹

Sialadenosis:

Sialadenosis is nonneoplastic, noninflammatory enlargement of the salivary glands associated with systemic disorders. The salivary gland enlargement is usually asymptomatic. Sialadenosis is common in obesity, malnutrition, alcoholic cirrhosis and any disease resulting in malabsorption, or poor nutrition.¹

CONCLUSION:

The salivary gland disorders represent a distinct group of disorders affecting both the major and minor glands. These conditions range from inflammatory, infectious, granulomatous and autoimmune etiology to obstructive, developmental, idiopathic disorders and neoplasm. Apart from neoplasm of salivary gland there are other non-neoplastic diseases or disorders that could affect the salivary glands. Some non-neoplastic salivary gland diseases can pose difficulty in diagnosis for which knowledge on their clinical features is required. With proper diagnosis appropriate treatment can be provided.

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