ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Obstructive Sialadenitis: A Review of 10 Cases.

Abudakir*, Muthu Mani, Shanmugapriyan, Swarna Priya, and Rituparna saha.

Department of Oral and Maxillofacial Surgery, Sree Balaji Dental College and Hospital, Bharath University, Pallikaranai, Chennai, 600100, Tamil Nadu, India.

ABSTRACT

Sialadenitis is inflammation of the salivary glands. Sialoliths are the main cause of obstructive submandibular sialadenitis as in our cases. The treatment of choice is surgical excision. Conservative management should be considered in the cases of small stones.

Keywords: sialadenitis, salivary gland, sialolithiasis

Corresponding author

ISSN: 0975-8585

INTRODUCTION

Sialadenitis is inflammation of the salivary glands. It may be acute or chronic. It can occur in various forms, acute suppurative sialadenitis, acute viral sialadenitis to chronic sialadenitis.

Sialolithiasisis is often the cause for obstructive sialadenitis. Sialolithiasis is also termed salivary calculi, or salivary stones. It is a condition where a calcified mass forms within a salivary gland, usually in the duct of the submandibular gland . Sialoliths occur as a result of deposition of calcium salts around an organic material such as inspissated mucous, ductal epithelial cells, salivary proteins and foreign bodies. Stasis of saliva may lead to acute and chronic infections.

The calculi are found in 85% of submandibular ducts and 15% of parotid ducts [1-3]. Other causes of acute sialadenitis include dehydration, immunosuppression, iatrogenic (drug-induced) and rarely haematogenous spread [4].

The submandibular gland, along with the parotid and sublingual glands comprise the major salivary glands. The minor salivary glands are scattered along the upper aerodigestive tract, including the lips, mucosa of the oral cavity, pharynx, and hard palate.The submandibular gland is the second largest (approximate weight, 10 g) of the major salivary glands (the parotid gland is the largest). Anatomically, it is situated in the submandibular triangle of the neck.

Surgical Anatomy

The Submandibular gland is divided into superficial and deep lobes based on its relationship to the mylohyoid muscle, the former lying superficial to the muscle, and the latter wrapping around the posterior aspect of the muscle. The gland lies on the hyoglossus muscle, superficial to both the hypoglossal and the lingual nerves, the latter supplying parasympathetic innervation by way of the chorda tympani nerve (from cranial nerve VII) and the submandibular ganglion. The duct of the submandibular gland, also known as the Wharton duct, exits the gland from the deep lobe, passing through the floor of the mouth. The duct opens in close proximity to the lingual frenum.

Case Reports

Obstructive sialadenitis usually is associated with mechanical obstruction of the salivary duct by calculi, tumours or altered salivary composition. We report the cases of 10 patients, affected by acute pain and unilateral inflammation localized in the submandibular region. Patients underwent clinical and computer tomography (CT Scan) and/or sialographic examinations (Fig 1, 2).

Figure 1: CT Scan

ISSN: 0975-8585

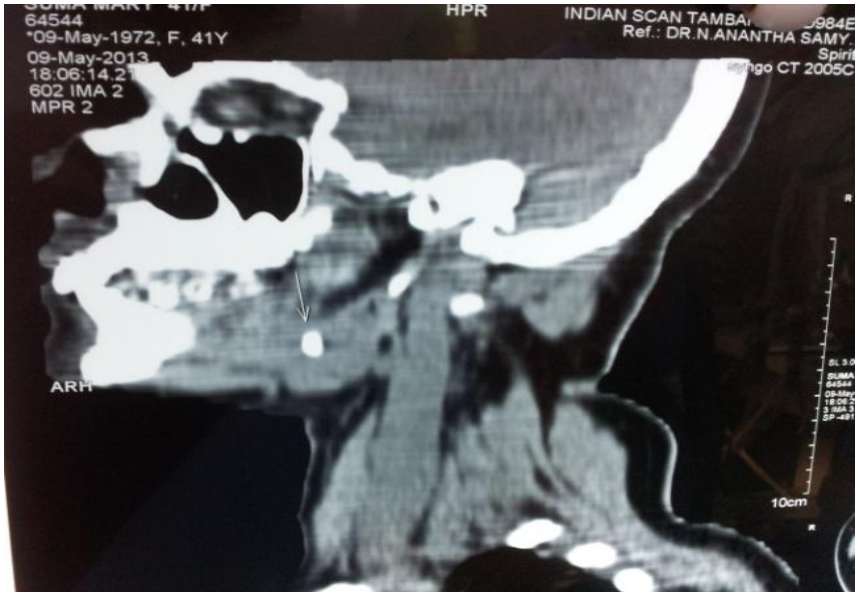

Figure 2: CT Scan

The surgical technique was standardized. All procedures were done under General anesthesia. In brief, an extra oral Risdon's incision was made followed by elevation of skin, subcutaneous and platysma muscles. Care was taken to protect marginal mandibular nerve, and facial artery and vein was ligated. The Submandibular gland was exposed through superficial layer of deep cervical fascia. Lingual nerve was identified and protected. The duct was exposed, and stone was removed. In some cases the gland was removed along with the stone. Wound closure with 3.0 vicryl for platysma, followed by 5.0 proline for skin closure. (Fig 3, 4)

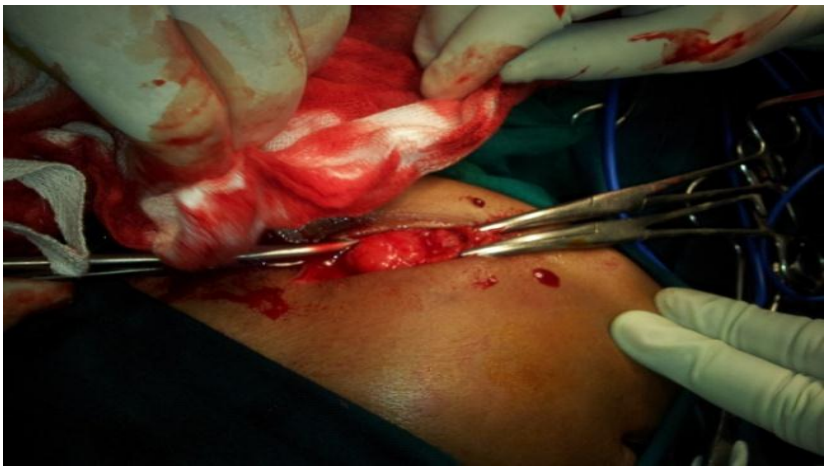

Figure 3: Surgical removal of Salivary gland

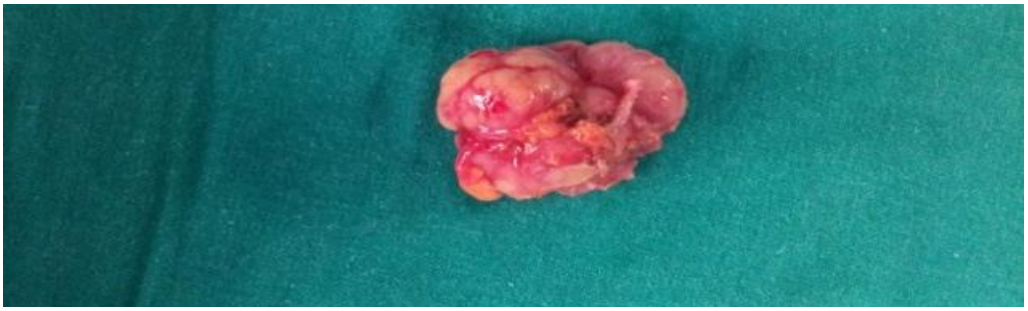

Figure 4: Excision of the Submandibular Salivary gland

Six months after sialolithotomy, the patients showed no signs or symptoms of xerostomia, and salivary flow of left submandibular gland was normal. As Soares et al [14]. said, intraductal stones may be removed by a transoral approach, whereas for intraglandular stones, an extraoral submandibular gland excision is indicated. Diagnosis and management of sialoliths of a remarkable size are challenging for the clinician. Conservative methods of treatment such as extracorporeal and endoscopic intracorporeal shockwave lithotripsy techniques should be considered as an alternative to surgical excision, in particular for little calculi.

DISCUSSION

Sialolithiasis is defined as the formation of calcific concretions within the parenchyma or the ductal system of a major or minor salivary gland [5]. The submandibular glandular system is the most susceptible for salivary calculi because of the anatomic arrangement of the principal duct and the physiochemical characteristics of its secretion [6]. Sialoliths are the main cause of obstructive submandibular sialadenitis as in our cases.

Clinically, the stones are round or ovoid, rough or smooth, and of a yellowish colour. They consist of mainly calcium phosphate with small amounts of carbonates in the form of hydroxyapatite, as well as smaller amounts of magnesium, potassium, and ammonia. Submandibular stones are composed of 82% inorganic and 18% organic material, whereas parotid stones are composed of 49% inorganic and 51% organic material [7].

Symptoms of salivary secretion blockage vary, depending on the size and location of the stone. The most common and diagnostic sign of obstruction is increase in swelling of the gland at mealtime. As the gland produces saliva and as the saliva attempts to exit through the duct, the stone effectively acts as a valve to create back pressure within the gland. The patient then experiences a feeling of fullness and pain. Usually with the cessation of the salivary stimulation, the pain and sensation of fullness tend to decrease. Continued obstruction of the duct may lead to chronic inflammation and acute infection.

Radiographs are a practical and simple way of investigating the ductal system. The traditional diagnostic methods include plain radiographs (occlusal film), sialography, ultrasound, and scintigraphy [8]. Sialo-CT and magnetic resonance sialography are more recently introduced diagnostic tools.

The treatment of sialolithiasis is determined by the location and size of the sialolith. The conventional treatment depends on the site of the stone, and can be either by intraoral or external approach. The treatment of choice is surgical excision. Conservative management should be considered in the cases of small stones [9]. Newer treatment modalities such as extracorporeal shortwave lithotripsy and sialoendoscopy are effective alternatives to conventional surgical excision for smaller sialoliths [10]. However, for giant sialoliths, transoral sialolithotomy with sialodochoplasty or sialadenectomy remains the mainstay of management [7].

Traditionally, recurring episodes necessitate treatment by open surgery, and sialolithiasis still represents the most frequent reason for submandibular gland resection [11, 12]. Interestingly, parotid gland resection remains less frequent, probably because of the higher incidence of postoperative complications such as facial paresis [13].

CONCLUSION

Early diagnosis and treatment of sialolith is of utmost importance both to reduce patient discomfort and prevent further complications such as chronic sialadenitis. Clinical and radiographic findings are most important factors in determining the precise location and size of the sialolith.

REFERENCES

[1] Ching AS, Ahuja AT, King AD et-al. J Clin Ultrasound 29 (6): 332-8.
[2] Isacsson G, Ahlner B, Lundquist PG. Arch Otorhinolaryngol 1981;232 (1): 91-100.
[3] Capps EF, Kinsella JJ, Gupta M, et-al. Radiographics 2010;30 (5): 1335-52.
[4] Fritz B. Head and neck imaging. Thieme Georg Verlag. ISBN:3131440813.
[5] EI Deeb , Holte N, Gorlin RJ. Oral Surg Oral Med Oral Pathol 1981 Feb;51(2):134-9

[6] Yu CQ, Yang C, Zheng LY, Wu DM, Zhang J, Yun B. Br J Oral Maxillofac Surg 2008;46:46–49.
[7] Rai M, Burman R. J Oral Maxillofac Surg 2009; 67:1329-1332.
[8] Yu CQ, Yang C, Zheng LY, Wu DM, Zhang J, Yun B. Br J Oral Maxillofac Surg 2008;46:46–49.
[9] Sunder VS, Chakravarthy C, Mikkilinine R, Mahoorkar S. Niger J Clin Pract 2014;17:115-8.
[10] Andretta M, Tregnaghi A, Prosenikliev V, Staffieri A. Acta Otorhinolaryngol Ital 2005;25: 145-149.
[11] Crabtree GMYarington. Laryngoscope1988;98:1044-1045.
[12] Hald J Andreassen UK. Oral J Otorhinolaryngol Relat Spec 1994;56:87-91.
[13] Dulguerov P Marchal F Lehmann W. Laryngoscope 1999;109:754-762.
[14] EC Soares, FW Costa, RM Pessoa, et al. Otolaryngol Head Neck Surg 2009;140:128–129.