

Computed Tomography Diagnosis of Mucocele of Submandibular Gland and its differentials.

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Abstract: Cystic lesions of the salivary glands account up to 5% of all salivary gland masses; if neoplasms are excluded, the number of true cysts is greatly reduced.¹ majority of the true cysts occur in the parotid gland and may be classified as either congenital or acquired. A case of cystic lesion in the submandibular gland is being presented because of its rarity and we also review its radiological differential diagnosis.

Keywords: Submandibular gland, parotid gland, cyst

INTRODUCTION

Submandibular gland is the major salivary gland. Variety of cystic lesions both congenital and acquired occurs in it. Mucocele or retention cyst is commonest in the submandibular gland; in contrast, the congenital and other acquired cysts that are commoner in the parotid gland.

CASE REPORT

A 25 years old male patient came to the ENT department of our hospital with the complaint of swelling in the left submandibular region. There was no associated history of fever. Patient gave the history of similar swelling in the same region and fever with spontaneous regression 2-3 months back. History of trauma was denied. Clinical examination of the swelling revealed a tense and tender cystic mass in the left submandibular region with no associated adenopathy. Rest of the ENT examination was unremarkable. Laboratory test did not reveal any significant abnormality. The patient was then referred to the radiology department for further evaluation of the swelling.

Plain radiographs of the submandibular region were normal with no evidence of calcification or calculus. Ultrasound examination of the swelling revealed the cystic replacement of the submandibular gland with minimal internal echoes. There was no evidence of calcification or calculus. Contrast enhanced computed tomography of the neck was then performed for complete delineation of the lesion. It revealed a large, nonenhancing, unilocular, homogenous, cystic mass with nearly imperceptible walls replacing the entire submandibular gland on left side (figure 1 and 2). There was no evidence of mass effect, calcification, calculus or adenopathy in the neck. Based on the above findings, the diagnosis of the mucocele or retention cyst of the submandibular gland was suggested, which was confirmed on excision biopsy.

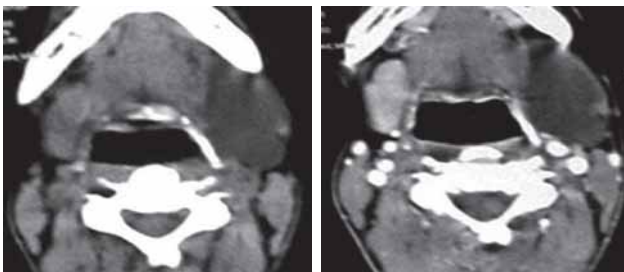


Figure 1: Noncontrast axial CT image shows a hypodense lesion in the left submandibular region **Figure 2:** Contrast enhanced axial CT image shows a mucocele of submandibular gland on left side

DISCUSSION

Salivary gland cysts can be classified according to their site in to the major salivary versus minor salivary glands. Major salivary cysts are further subclassified in to developmental (branchial cleft, lymphoepithelial or dermoid cyst) versus ductal (sialocyst, ranula). Minor salivary gland cysts

are usually mucoceles. Additionally, tumor like lesions such as AIDS related lymphoepithelial cysts can also have a major cystic component. Some salivary gland malignancies can also present as cysts and these included Warthin's tumor, low-grade mucoepidermoid carcinoma, papilla-cystic variant of acinic cell carcinoma and mucus producing papillary adenocarcinoma.²

In adults, majority of the cystic lesions are tumoral unless proved otherwise. They may also be AIDS related lymphoepithelial cysts. Both the above types are mainly encountered in the parotid gland. Tumoral lesions have thick, nodular enhancing walls. Solitary lymphoepithelial cysts are secondary to chronic infection but multiple & bilateral cysts associated with cervical adenopathy, are usually secondary to AIDS.^{3,4}

Branchial cleft cysts, mucoceles, retention cysts and lymphangiomas are seen mainly in childhood but may be seen in the adults as well.² cysts with a fistulous connection in and around the external auditory canal are usually the first branchial cleft cyst.³ They are rare and are mostly seen adjacent to or within the parotid gland.

Many acquired cysts of the major salivary glands develop as a result of an obstruction to part of the ductal system that may be caused by postinflammatory stricture, a calculus, trauma, a postsurgical complication, or a mass and may assume large sizes.^{2,5} Almost always the ductal obstruction is incomplete or intermittent, because complete obstruction of the glandular ducts results in acinar and glandular atrophy rather than cyst formation.⁶ The resultant thinned walled cyst is called a retention cyst or a mucocele or an extravasation cyst. These cysts occur most often in the submandibular gland. When such a cyst occurs in the sublingual gland, it is known as a ranula.³

A sialocele arises when saliva accumulates within a cyst area that develops secondary to a complete or incomplete traumatic interruption of the excretory ducts draining the region. These sialoceles develop slowly over a period of time except after the trauma when they develop and enlarge rapidly, and needle aspiration of saliva from the cyst confirms the diagnosis.⁷ The cystic nature of these lesions is easily identified on US and postcontrast CT. On CT, the content of these lesions have a watery attenuation and do not enhance while the thin walls of the cyst enhance. On MR imaging, these cysts are hypointense on T1WI and hyperintense on T2WI. Definition of the cyst wall, thickness, smoothness or uniformity is best accomplished on postcontrast fat suppressed T1W images.⁸

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