

# Non traumatic parotid sialocele: A case report

Akhil M. Kulkarni, Dhruva Rajgopal, Bhaghyavathi M. Kulkarni, Akhila D.

Department of Radio Diagnosis, S.S. Institute of Medical Sciences and Research Centre, Davangere

[Received : 22/03/2014, Revised : 16/04/2014, Accepted : 22/04/2014]

## Abstract :

Sialocele, a subcutaneous cavity containing saliva, is a lesion that arises from extravasation of saliva into glandular or peri-glandular tissue secondary to disruption of the parotid duct or parenchyma caused by infection or trauma. A rare case of non-traumatic parotid Sialocele is reported in a 42 year old male and the utility of imaging modality like high resolution ultrasonography, CT and MR in pre-operative diagnosis is emphasized.

**Key words:** parotid gland, parotid sialocele, parotid ultrasound, MR Sialography.

## Introduction:

Sialocele is a subcutaneous cavity containing saliva, which usually results from infection or trauma to the oral cavity or over the face<sup>1, 2</sup>. Sialocele could be seen even after a partial parotidectomy. It is characterized clinically by a soft, mobile swelling in the region of salivary gland with normal overlying skin. There is usually no associated history of fever or pain unless secondarily infected. The diagnosis is complex and involves multidisciplinary approach with combination of thorough history, clinical assessment of the patient, imaging modalities such as sialography, ultrasonography, MRI and fine needle aspiration. Different imaging modalities are required to confirm the diagnosis, evaluate the extent of the cyst and plan the management. Fluid collection, hematoma or a fistula in the parotid gland is well demonstrated by high-resolution sonography<sup>3, 4, 5, 6</sup>. In the present context we report a rare case of non-traumatic parotid sialocele following infection and emphasize the role of different imaging modalities in pre-operative evaluation.

## Case report:

A 42 years old male patient presented with chief complaint of pain and swelling in the right side of the face, noted 10 days prior to consultation. Patient gave no history of previous injury to the site of swelling. The swelling had gradual course of progression. History of serous discharge from the prominent part of the swelling was present. No sensory or motor deficits were noted.

On examination there was a soft fluctuant swelling present in the right pre-auricular region measuring approximately about 5cm x 6cms in size (fig 1). The skin over lying was pigmented and a small scar was seen denoting the area of discharge. There was no

lymphadenopathy detected. Intra oral examination was unremarkable.

Ultrasonography of the swelling revealed multiple dilated cystic spaces with internal echoes and calculi of varying sizes (fig 2). The largest calculi measured about 4.8x1.6 mm within the parotid duct and there was upstream dilation of the parotid duct. The contralateral parotid gland showed normal echo pattern. A High resolution cranial CT with 3D CT of the face was performed to rule out any bony facial injuries (fig 3).

MRI of parotid (fig 4.1 & 4.2) at the level of the swelling revealed multiple cystic spaces showing high signal in Coronal STIR and Axial STIR images, in communication with dilated parotid duct. Stenson's duct appeared to be dilated but there was no evidence of disruption throughout its course. Under ultrasound guidance FNAC was performed from one of the cystic spaces which revealed 2-3 ml of sero-sanguineous discharge and sample was sent for analysis which revealed plenty of neutrophils.

In view of no antecedent trauma or injury to the parotid region and a normal high resolution 3D CT of face, a diagnosis of intraparotid non traumatic sialoceles was established which was later confirmed at surgery.

## Discussion:

Mucoceles are round and well defined lesions that contain mucin. When they occur in major salivary gland they are called sialocele. Mucoceles are of two types: extravasation and retention. Mucous extravasation phenomenon is when mucous is extruded into the connective tissue and is surrounded by granulation tissue. Mucous retention phenomenon is used to describe a cyst with retained mucin lined with ductal epithelium<sup>7,8</sup>.

Differential diagnosis of sialocele includes retention cyst, sialodochitis, branchial cleft cyst and lympho-epithelial cyst. However given a history of facial trauma or surgery, the diagnosis of traumatic sialocele can be made easily. In equivocal cases, an elevated amylase level in aspirate or imaging can help in establishing the diagnosis.

## Address Correspondence to :

**Dr. Kulkarni Akhil Muralidhar**

Department of Radio Diagnosis

SSIMS & RC, Davangere

E-mail : drakhilkulkarni@gmail.com

Mob. : 9008735596



Cross-sectional imaging can determine the site of duct injury, size and location of the cyst and relationship of the cyst with the facial nerve in case of intra-parotid sialocysts. Association of the complications such as infection and hemorrhage in the cyst can also be demonstrated.

Conventional sialography has been considered as the mainstay for the diagnosis and evaluation of the sialocyst<sup>9,10</sup>. Disadvantages of conventional sialography include radiation exposure, pain during retrograde injection of contrast material, technical limitations like failure to cannulate ductal orifices in presence of scarring or surrounding buccal mucosal edema. Another major drawback is the failures to demonstrate up-stream ductal system in cases of severe stenosis and transection of the duct. Some authors have claimed that injection of the contrast in the conventional sialography may increase the pressure in the ductal system and subsequent rupture of the sialocyst<sup>11</sup>.

MR Sialography is a promising non-invasive tool for investigating the ductal system of the major salivary glands. It scores over the conventional sialography in being non-invasive, non-ionising radiation and ability to demonstrate up stream ductal system in cases of severe ductal stenosis and transection of the duct. MR Sialography when combined with other conventional MR sequences helps in evaluation of the intra/extra parenchymal lesions and its relation with adjacent muscles and nerves.

Sialocele and salivary fistula can frequently be managed non-operatively with antibiotics, pressure dressings, and serial aspiration. Anticholinergic medications and the injection of botulinum toxin represent additional measures before resorting to surgical therapies<sup>11</sup>. Botulinum toxin acts by blocking acetylcholine release, thereby inhibiting neurotransmission at the secretomotor parasympathetic autonomic nerve endings responsible for salivation<sup>12</sup>. Recent advances in optical technology have led to the development of sialoendoscopy, a new surgical diagnostic and therapeutic means of direct visualization of the intraductal stones that has bridged the diagnostic gap between the clinical suspicion of salivary obstruction and limitation of conventional radiology<sup>13</sup>.

Table 1 shows comparison between conventional sialography with MR Sialography.

**Conclusion:**

Salivary gland sialoceles are relatively common complication following trauma with a penetrating injury or may be a complication of salivary gland surgery, non-traumatic sialoceles are less common and may be seen as sequelae to parotid gland infection. The development of new diagnostic tools such as magnetic resonance sialography and endoscopic techniques has led to further improvements in the clinical and diagnostic assessment of this condition, and botulinum toxin therapy has recently been described in the management of parotid sialoceles.

**Table 1 shows comparison between conventional sialography with MR Sialography.**

FEATURES	CONVENTIONAL SIALOGRAPHY	MR SIALOGRAPHY
<b>Invasive and painful procedure</b>	+	-
<b>Radiation exposure</b>	+	-
<b>Demonstration of ductal anatomy</b>	-	+
<b>Iatrogenic injury to duct</b>	+	-
<b>Evaluation of intra and extra parenchyma lesion.</b>	-	+



Fig 1: Swelling in the right parotid region with pigmentation of the skin with a small scar which denotes the point of discharge (Pointed by blue solid arrow).



Fig 2: High-resolution sonography of parotid gland showing multiple dilated cystic spaces in the right parotid gland with multiple calculi within the cystic spaces.

IMAGE - 3 :



IMAGE - 4 :

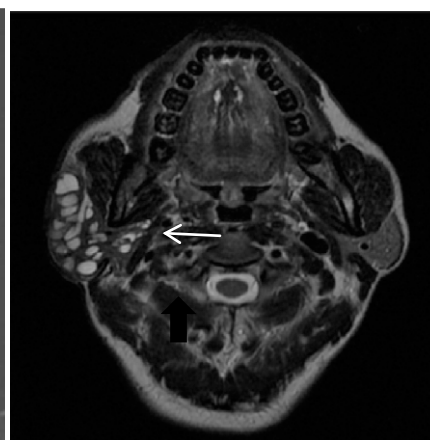
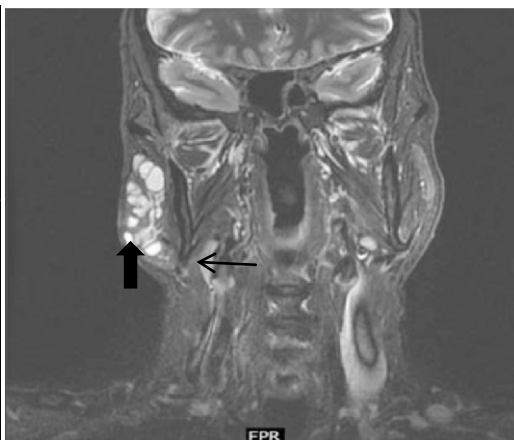


Fig 3: 3D CT reconstruction of the skull showing no evidence of fracture on the right side of mandible and the temporal region.

Fig 4.1&4.2: MR coronal and axial STIR image showing multiple dilated cystic spaces in the right parotid gland with dilated parotid duct. (Black solid arrow denotes sialoceles and thin black arrow shows dilated parotid duct.

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#### How to Cite this article :

Kulkarni M A, Rajgopal D, Kulkarni M B, Akhila D. Non traumatic parotid sialocele: A case report. *J Pub Health Med Res*, 2014;2(1):53-5.

Funding: Declared none

Conflict of interest: Declared none