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Case Report: An Unusual Case of Preauricular Swelling, Parotid Sialocele

KEYWORDS: Parotid, sialocoele, trauma.

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ABSTRACT *Sialocele is a salivary gland cyst. Trauma to the any of the salivary glands results in disruption / interruption of the duct / parenchyma leading to extravasation of saliva into the glandular / peri glandular region resulting in cyst formation. It is most commonly associated with the parotid gland. This case documents an unusual swelling in the preauricular region - a post-traumatic parotid sialocele1-2. It illustrates trauma as an etiology of sialocele formation.*

Imaging plays an important role in establishing the diagnosis as well as the management. This report documents a case of a young male who developed a discharging sinus and swelling right side of face, one month after suturing a laceration, following a road traffic accident. Ultrasonography done revealed a multiloculated collection overlying the right parotid gland. A conventional sialography, CT sialography and MR done confirmed the swelling to be related to the right parotid gland with interruption of the Stenson's duct and discharging sinus over the right cheek. The patient was managed conservatively with aspiration of the sialocele.

Introduction:
Sialocele is a salivary gland cyst. Trauma to any of the salivary glands results in disruption / interruption of the duct / parenchyma leading to extravasation of saliva into the glandular / peri glandular region resulting in cyst formation. It is commonly associated with the parotid gland.

Causes of sialocele formation include:
- Trauma (sharp penetrating wounds, road traffic accidents and blunt trauma),
- Infections (infected tooth, tuberculosis and syphilis),
- Maxillo facial surgeries (Temporomandibular joint surgery[4], parotidectomy[5], mastoidectomy[6], mandibular osteotomies[7] and facial abscess drainage[8])

A sialocele presents clinically as acute to sub-acute onset mobile swelling in the parotid region with or without pain and fever. On local examination it may be mobile or fixed, if secondarily infected it may be tender with associated erythema of the overlying skin.

The diagnosis is complex and requires multimodality approach in conjunction with a good history. Aspiration of the collection with biochemical evaluation of the contents confirms the diagnosis.

Imaging studies include sialography, ultrasonography, computed tomography (CT) and magnetic resonance imaging[3,8].

Conventional sialography using water soluble iodinated contrast is becoming obsolete with emergence of newer modalities like CT and MR. CT delineates the duct , also evaluating the extent of involvement of the gland and surrounding tissues, which are crucial in deciding the management. MR sialography using heavily T2 weighted 3D sequences is non invasive and can give the same information as a CT without the radiation.

The differential diagnosis of sialocele includes retention cyst, ranula, lymphoepithelial cyst and a first branchial cleft cyst. The definitive diagnosis can only be made after a histopathological examination.

Treatment maybe either conservative, or surgical. Conservative treatment involves regular aspiration with compression dressing. Surgical treatment involves duct reconstruction, fistula formation and parotidectomy. Other modalities of treatment include botulinum toxin instillation into the sialocele[9] and radiotherapy.

Anatomy:
Parotid gland is one of the salivary glands in the human body. It is located in the retromandibular fossa. It extends from the zygomatic arch to the angle of mandible with a superficial and a deep lobe. It drains via the Stenson's duct into the vestibule of the mouth next to the upper second molar tooth. The facial nerve lies in close relation, separating the deep and superficial lobes. It is likely to be involved in traumatic injuries involving the parotid gland.

Case Report:
A 32 year old male patient presented to the casualty with history of a road traffic accident. He had a lacerated penetrating wound over the right side of face. The wound was cleaned and sutured. One month later, he presented with a painful swelling and a discharging sinus over the right cheek. On examination the swelling was soft to touch, mobile and painful. The discharge from the sinus was clear and increased on having food.

The teeth and buccal mucosa were normal. A clinical provisional diagnosis of an abscess / inflammatory swelling was made. The patient underwent a ultrasonography (Siemen's Antares Acuson using a linear 5 – 7 MHz probe) followed by a conventional sialography, CT sialography and MRI.

Ultrasonography of the right parotid region showed a bulky right parotid gland with altered echotexture and a cystic anechoic swelling (Figure 1) anterior to the right parotid gland,

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with a neck and a fistulous tract to the skin. The surrounding region showed increased echogenicity suggestive of inflammatory changes. The duct was not visualized.

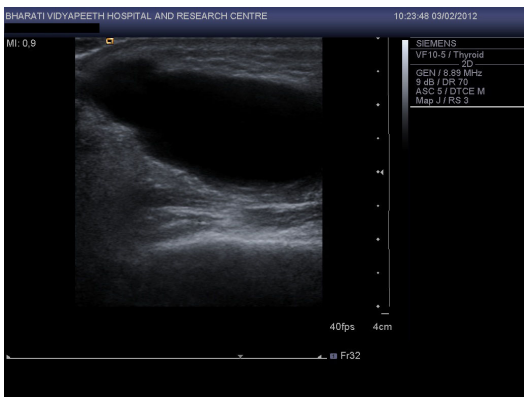

Figure 1: Longitudinal Sonogram shows a cystic anechoic swelling in the right parotid region.

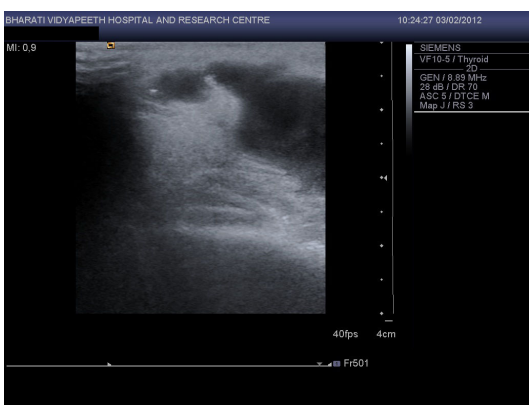

Figure 2: Sonogram shows the neck of the collection and fistulous tract (Arrow). The margins of the tract are irregular with a focal dilated segment (Arrow head).

Following this a sialography was performed using Angiograffin (Diatrizoate Meglumine injection). The Stenson's duct was cannulated, however the duct could not be opacified. Later the contrast was injected from the sinus opening, with opacification of the cyst and intra ductal system of the right parotid gland (Figure 3).

Figure 3: Conventional sialography, Oblique view for the right parotid gland shows the swelling opacified (Arrow) with iodinated contrast instilled through the sinus opening. The intra glandular ductal system is also delineated

The patient also underwent a CT, which revealed a multiloculated collection with delineation of the intra parotid ductal system (Figure 4, 5). The proximal portion of the right Stensons's duct was also seen with sudden cut off and non-visualization of the distal portion.

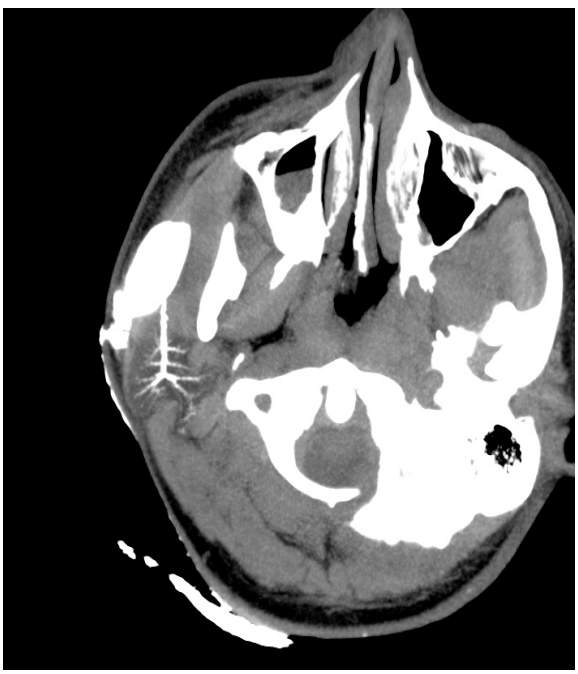

Figure 4: Maximum intensity projection (MIP) reformatted image - CT sialography axial plane, shows a opacified cystic swelling (Arrow) with the sinus opening over its lateral aspect, superficially and dilated opacified intra glandular ducts.

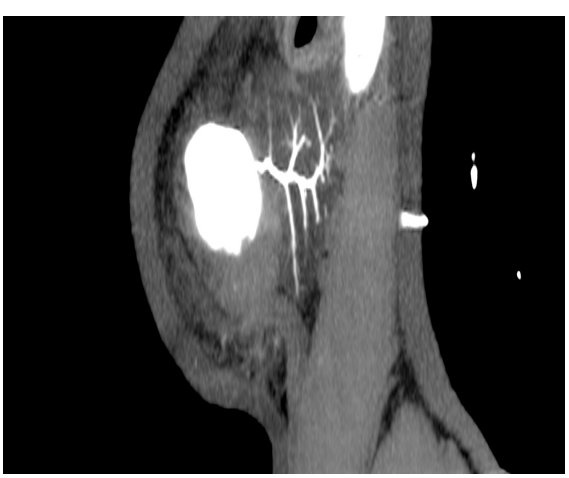

Figure 5: Maximum intensity projection, sagittal reformated image showing lobulated swelling in the right parotid gland with intra ductal system opacification.

Subsequently a MR was done using heavily T2W (Figure 6), T1W (Figure 8) and STIR (Figure 7) sequences in multiple planes. It revealed a well-defined collection just anterior to right parotid gland with a sinus tract to the skin surface. This appeared hyper intense on long TR and hypo intense on T1W images. Surrounding inflammatory changes were also noted.

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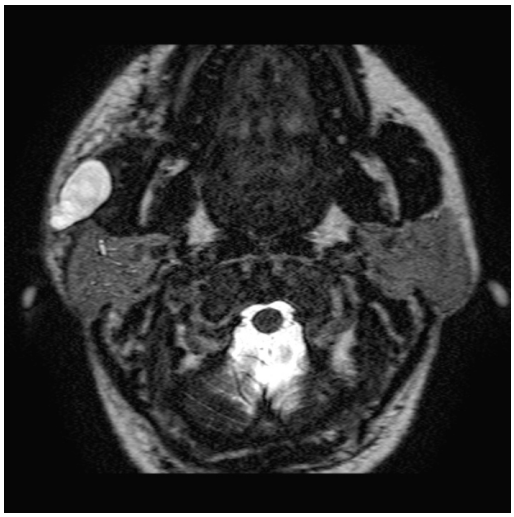

Figure 6: Heavily T2W 3D Drive sequence axial section shows a well defined hyperintense collection (Arrow) anterior to the right parotid gland with a sinus over its lateral superficial aspect. The intra parotid ducts can also be seen.

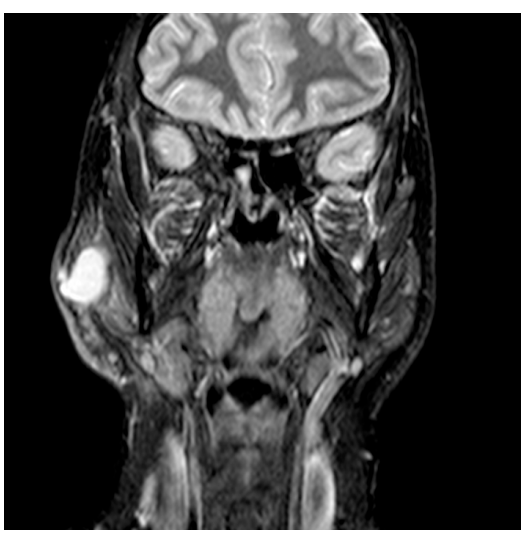

Figure 7: Coronal STIR sequence shows a well defined hyperintnese swelling (Arrow) with a lateral narrow opening communicating with the skin surface. Surrounding soft tissue hyperintense edema is also noted.

Figure 8: Axial T1W images shows a hypointense well defined swelling (Arrow) in the anterior aspect of the right parotid gland.

In view of the draining sinus and chances of infection the attending surgeon decided to follow a surgical line of treatment. The patient underwent excision and drainage of the swelling with a fistula formation to the buccal cavity. This allowed the patient to retain his normal salivary gland function. The patient recovered well from the surgery without any major postoperative complication. The external sinus opening healed.

Discussion:

The incidence of parotid gland swelling is very low. In most cases ultrasonography can be used as a screening modality with further imaging required to delineate extent and additional information of the surrounding invasion / involvement.

The patient presented with swelling in the region of the right cheek with discharging sinus. The complex anatomy of the region accounts for a long list of differentials. In this case the history of preceding trauma, findings on ultrasonography and CT sialography as well as MRI helped in reaching the diagnosis.

MR with heavily T2W sequences can yield information without the administration of contrast and radiation. It also helps in characterization of the lesion. Facial nerve involvement can also be commented upon.

Sialocoele is a post-traumatic collection of saliva in the region of the cheek or masticator space with or with out disruption of the salivary duct. The swelling increases on eating. In our case due to a discharging sinus, the differential diagnosis of a post-traumatic abscess and a retention cyst were considered. Past history of trauma and the patient being afebrile favored a diagnosis of sialocoele.

Management of a sialocoele may be conservative or surgical. As in our case there was disruption of the stenson's duct with a draining sinus the treatment was surgical.

Surgical options included a parotidectomy with loss of the gland function or surgical reconstruction of the fistula as was done in our case.

The patient tolerated the surgery well and underwent excision drainage of the swelling with fistula formation for the drainage of the saliva into the mouth.

The above case report illustrates the use of multi modality imaging in a case of a parotid sialocoele, thus providing essential information regarding origin, content and extent of the swelling, facial nerve involvement and information regarding the draining duct.

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