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Post-Traumatic Parotid Sialocoele: Review and Case Report

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Abstract

The most common causes of parotid injury are penetrating trauma, which can result either from stab wounds, road traffic accidents, or gunshot wounds. Post-traumatic parotid sialocoele is a subcutaneous extravasation of saliva from the parotid gland secondary to disruption of its duct or parenchyma. The present paper a case of a sialocoele involving lower pole of parotid treated conservatively. The results justify our recommendation to use this approach for the treatment of similar cases of sialocoele.

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Introduction

Parotid injuries are usually not so obvious and they may go unseen till complications are seen. Parotid effusion, sialocele and fistula are some of those complications [1-4]. Sialocoele is an acquired lesion that occurs when there is a collection of saliva beneath the skin if duct leaks out but no fistula forms or it may also result when glandular substance of parotid is disrupted but parotid duct is intact as in our case [1-3]. Extravasation of saliva into the surrounding tissues occurs following injury thus creating the sialocoele [3,4]. Term pseudocyst was used first by Laundry (1958) [1]. Sialocoele is often initially managed conservatively, including through repeated aspirations and compression dressings, and this treatment modality proves curative in many cases [1]. Resistant cases require surgical treatment, and different surgical approaches to treat parotid sialocoele have been described in the literature depending on the location of injury [4,5]. Many of the surgical treatment approaches that have been described are complicated, however, and they sometimes require specialised skills and techniques [6,7].

Case Representation

A 40-year-old man was involved in motorcycle accident and sustained 11 cm of laceration on right side of the angle of mandible near lower border. He got the area-debrided and sutured in emergency department. Four weeks later he presented with swelling of right side of face at the lower pole of parotid gland region. Swelling measured 10 cm, non-tender, fluctuant, and cystic in nature (Figure 1). There was no facial weakness. Intraoral examination revealed normal mouth opening. The right Stensen's duct was identified, milking saliva but scanty. Probing of duct was unsuccessful. The swelling was aspirated extra orally from lacerated wound and the biochemical report confirmed that the fluid was consistent to saliva (Figure 2). A clinical diagnosis of posttraumatic sialocoele of right parotid gland was established.

He was managed with aspiration and compression dressing every day for 10 days and then every alternate day for following week. Patient was given amoxicillin 500mg every eight hourly for 10 days prophylactically and .2% chlorhexidine mouthwash during treatment. The swelling subsided and area healed in 3 weeks of conservative treatment and stenson's duct was patent and milking saliva at the end of treatment (Figure 3). He was symptoms free until last followed 39 months.

Discussion

Sialocele typically develops 8-14 days after injury. Similar finding was noticed in the present case. Unless secondarily infected there is absence of pain and on palpation it is soft and mobile. Infection is an important complication in a sialocele and usually leads to an external salivary fistula [6].

Diagnosis of sialocele is usually straightforward and can be made by history and clinical assessment of patient. Often history of trauma or surgical wound before the onset of the swelling will be present as was seen in the present case. An aspirated fluid medium is analyzed for salivary amylase (exceeding 10,000 U/L) [7-9]. Radiological examinations (CT, MRI,) have very small role in detecting injuries to area of parotid gland [4]. Ultrasound may help to assess sialocele. Transillumination test can be of help when exravasation of saliva occurs subcutaneously (Figure 4). Sialography may be performed however some authors have claimed that sialography may increase the pressure in sialocele causing rupture and fistula [9].

Van Sickels [11] devised parotid injury classification in 2009. This system divides parotid injuries in three regions: (1) posterior to masseter muscle or intraglandular; (2) overlying the masseter and (3) anterior to masseter. Our case is type 1 injury intaglandular.

Van der Goten et al. [12] described that the difference between a pseudocyst and a sialocoele is the presence of an epithelial lining of the cavity. If the saliva accumulates in the soft tissues by extravasation and remains confined by connective tissue or fibrosis, it is a pseudocyst. On the other hand, if this accumulation is produced within a cavity covered by epithelium, it is a sialocoele.

Various treatment modalities have been described in litrature having various success (Table 1). Every options have its merits and drawbacks. Conservative management seems to the most appropriate treatment of choice.

Many of the surgical treatment approaches that have been described are complicated, however, and they sometimes require specialised skills and techniques [5,6]. The techniques can be divided into three groups; microsurgical anastomosis of the duct, suppression of salivary gland secretion, and diversion of salivary flow into the mouth [1,5,6]. Most of the above procedures are invasive; they require specialised surgical skills, with variable and often poor success rates.

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Figure 1: Photograph showing laceration and swelling right side of face near lower pole parotid.

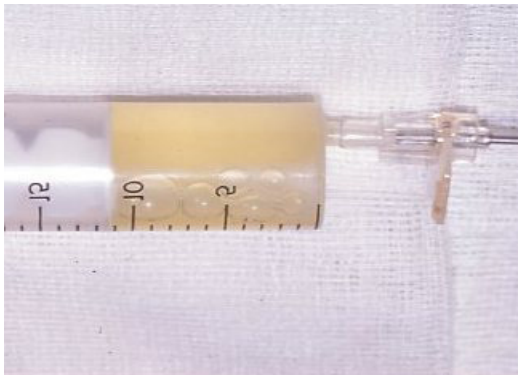

Figure 2: Aspirated Saliva.

Figure 3: Photograph 3 weeks after treatment.

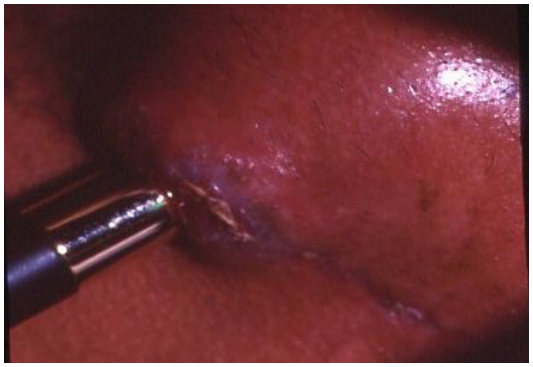

Figure 4: Photograph showing positive trans illumination test.

Treatment Modality	Indications	References
Aspirations and pressure dressings	Commonly used, Requires no expertise	[1,5]
Anti-sialogogues	Conservative, No specialised instruments. Time consuming, Usually used with other procedures	[3-8]
Radiation therapy	Not commonly used, Usually considered for refractory salivary fistula, Induces fibrosis and atrophy of the gland	[17]
Parasympathetic denervation (Tympanic denervation)	Not commonly used	[19]
Cauterization of fistulous opening/duct	Commonly used, Good result	[9-11]
Reconstruction of duct	Commonly used, Good result	[12-14]
Superficial or total parotidectomy	Sometimes indicated, Not very common, Requires expertise	[15,16]
Botulinum toxins	Non-invasive, Reduces saliva secretion from rest of the glandular tissue, Not commonly used	[18,19]

Table 1: Treatment options of Parotid Sialocoele.

A technique of peroral catheter drainage has been previously described, and almost all the authors reported excellent results in their patients [6-8]. Demetriades reported the largest series to date, and showed a success rate of 92% in 12 cases [9]. In his technique, a small skin incision is made at the facial scar over the sialocoele, through which a small forceps is used to enter the cyst and puncture into the oral cavity. Using the forceps, a catheter is then introduced into the cyst via the oral cavity and secured to the oral mucosa, and the skin incision is closed with a single suture.

Both surgical and nonsurgical approaches are accepted as modalities of treatment for sialocele, as untreated sialocele may develop into significantly large facial swelling. Fistula formation usually occurs often draining extraorally [10].

Some authors postulated that minor sialoceles resolve spontaneously by the end of a month because scar tissue formation around transected margins of the salivary parenchyma seals any further flow of saliva from the remaining salivary parenchyma [3].

Various non-surgical or conservative approaches are repeated aspiration and pressure dressing, radiation therapy at 6-20 Gy but it is no longer popular because radiation doses required for healing are high and may be carcinogenic, administering nothing orally to the patient until fistula closes, antisialogogues like atropine or probanthine can be used but their side effects restrict their use [12-14]. The main aim of any line of treatment is to reduce the secretion of the remaining glandular tissue in order to both alliviate the symptoms and facilitate the closure of fistula [15,16]. The goal can be achieved in a minimally invasive manner with usage of botulinum toxin [16-18].

Conclusion

Parotid gland and duct injuries represent a small percentage of overall soft tissue traumas, dentist must be aware of such injury

because failure to recognize it will permit the onset of number of different complications, some of which are difficult to resolve. For the management of parotid sialocoele our first line of treatment should focus on conservative approach as described in this case.

Competing Interests

The author declare no competing interests.

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