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ABSTRACT
Parotid gland or duct injury can be caused by assault with a knife, bottle, or more rarely, gunshot. Post-traumatic parotid gland and duct injuries are not common. The low rate of occurrence of parotid injury may account for the missed diagnosis of parotid and duct injury on admission and, after a varying period, sialoceles or fistulas. This report describes a case of a post-traumatic sialocele of parotid gland. A review of the literature and description of the medical and surgical management options for these injuries are also provided.

Keywords: Post-traumatic parotid sialocele, Parotid fistula, Botulinum toxin, Catheterization.

INTRODUCTION
The major causes of parotid trauma are penetrating injuries to the parotid gland from an assault weapon or from injury due to shattered glass after a motor vehicle accident. Patients in whom the initial injury is missed on admission may present at varying intervals with a parotid fistula that may be either due to glandular or ductal injury. An internal parotid fistula may be commonly present as sialocele or an effusion depending on when the diagnosis is made. If the communication is made with the skin, it leads to external parotid fistula. This case report describes a post-traumatic sialocele in a young male and a review of the literature with the description of the therapeutic options for such injuries is discussed.

CASE REPORT
A 23-year-old male patient reported to the Department of Oral Medicine and Radiology with the chief complaint of swelling and pain on right side of the face since a week. The patient gave the history of assault on the right cheek a week ago with a knife and was treated in a local hospital for the same. Later swelling and pain developed gradually at the site of injury and reached the present size. The swelling had increased in size and pain increased on forceful opening of mouth. The patient also gave history of dryness of oral cavity.

Extraoral Examination
Extraoral examination revealed a solitary, diffuse, round to ovoid swelling measuring about 4 by 3 centimeters on right cheek extending towards right angle of the mouth and superoinferiorly extending from below the ala tragus line to the lower border of the mandible on right side (Fig. 1). The skin over the swelling...
showed a single linear healing lacerated wound on the right cheek seen extending from tragus of the ear towards the angle of mouth which on palpation was slightly tender (Fig. 2). There was no evidence of sinus opening or purulent discharge seen in the region of the swelling. Facial nerve functions were found normal.

The swelling was tender on digital palpation and soft to fluctuant in consistency. The regional lymph nodes were not palpable. On intraoral examination, the soft swelling which could be palpated in right buccal mucosa was tender and revealed presence of a whitish slough, which was scrapable and tender on palpation was confirmed on palpation.

There was no evidence of salivary ejection from the orifice of the right Stensen’s duct. Fine needle aspiration of the swelling yielded a serosanguinous fluid (Fig. 3).

Based on history and clinical findings, a provisional diagnosis of post-traumatic sialocele was made.

The patient was surgically treated and catheter was placed in parotid duct for maintaining parotid salivary flow (Fig. 4).

The patient was kept under observation till complete drainage was achieved after which patient remained asymptomatic.

**DISCUSSION**

Medical literature has designated various terms for post-traumatic development of a cavity along the path of a canal draining a salivary gland and these vary according to the era in which they were described.

The term “pseudocyst” was used first by Laundry et al. Only secondarily at the end of 1970’s did the term “sialocele” appear and become popularized.

A parotid fistula is a communication between the skin and a salivary duct or gland, through which saliva is discharged. The occurrence of a parotid salivary fistula is relatively common complication after parotidectomy. A salivary fistula or a sialocele occurs if the resected edge of the remaining salivary gland leaks saliva and drains through the wound or collects beneath the flap (sialocele). The flow through the fistula increases during meals, particularly during mastication.

Van der Goten et al described that the difference between a pseudocyst and a sialocele is the presence of an epithelial lining of the cavity. If 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 sialocele.

Etiologies related to occurrence of a parotid gland sialocele are as follows:

- Penetrating injuries to the parotid region
- Blunt trauma in the parotid region
- Complication of parotid duct cannulation following sialography
- Intraoperative iatrogenic injury in parotid region.

**Management of Parotid Sialoceles and Fistulae**

Salivary fistulae and sialoceles are usually self-limiting problems and are initially submitted to conservative treatment. The first step to reduce salivary secretion is to reduce oral intake by means of enteral or parenteral feeding and administration of drugs such as atropine or probanthine. Repeated needle aspirations and pressure dressings are carried out. In a few cases, insertion of a suction drain, in combination with a pressure dressing may be necessary. Various forms of treatment have been described for parotid gland fistula, including tympanic neurectomy with or without chorda tympani sectioning, radiotherapy and even completion of the parotidectomy. Tympanic nerve section may have a low success rate, however, and it could take a long time to achieve healing of the fistula.

Anticholinergic drugs induce a temporary decrease in salivary secretion and are consequently considered useful in fistula management, but they cause distressing side-effects. However, if a sialocele or a fistula are resistant to this form of treatment, a more aggressive approach is necessary.

Staffieri et al first proposed, in 1999, botulinum toxin in the treatment of salivary fistula and sialoceles after conservative treatment failure. The major secretomotor fibres to the salivary gland are cholinergic parasympathetic and are susceptible to inhibition by the BTX. Several studies have confirmed the efficacy and safety of botulinum toxin in fistula and sialocele management.
Fistulas and sialoceles are managed with botulinum toxin injection after conventional conservative management techniques fail. The residual substance of the gland is injected percutaneously with a total of 10-20 mouse units (U) of BTX-A (Botox, Allergan) in two-three spots. The botulinum toxin injection can be performed on an outpatient basis with little discomfort for the patient. A localised cholinergic block achieved with botulinum toxin injections, avoids the side-effects caused by systemic anticholinergic drugs and avoids surgical risks. Inhibition of parotid secretion leads to a temporary block in salivary flow followed by glandular atrophy, thus allowing healing of the fistula.6

**Surgical Methods of Management of Sialocele**

1. Diversion of parotid secretion into the mouth for which reconstructive methods such as delayed primary repair of duct, reconstruction of the duct with a vein graft, mucosal flaps and suturing of proximal duct to buccal mucosa are used. Alternatively, formation of a controlled internal fistula using a T-tube or catheter drainage into the mouth or drainage of proximal duct by a catheter are the methods which are used. Local therapy of the fistula such as excision and cauterization are also used.

2. Depression of parotid secretion: This can be achieved by means of surgical approaches such as duct ligation or sectioning of the auricotemporal or Jacobsen’s nerve. Repeated aspiration and pressure dressing have been tried.

**CONCLUSION**

Injuries to the parotid gland and duct are rare and must be treated surgically in the acute phase. After 72 hours, management should be conservative and aimed at limiting or treating complications.

**REFERENCES**