

Peroral drainage of post-traumatic sialocoeles: report of three cases

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Abstract

Objective: To discuss the technique and outcome of this simple procedure and the management of post-traumatic parotid sialocoeles, and to review the literature regarding this condition.

Case report: We report the successful surgical treatment, by peroral drainage, of three patients with post-traumatic parotid sialocoele resistant to conservative management.

Discussion: We discuss the method and outcome of the surgical procedure performed, along with the causes, presentation and management of parotid sialocoele.

Conclusion: Correct initial management of a parotid duct injury may prevent the formation of a sialocoele. When conservative treatment of post-traumatic parotid sialocoele fails, we advocate the surgical technique described in this report as it is effective, simple and carries minimal risk to the patient.

Key words: Sialocoele; Sialocoele; Parotid duct injury

Introduction

A parotid sialocoele is a periductal accumulation of saliva, also known as a salivary mucocele or salivary retention cyst. The management thereof is generally conservative, with repeated aspiration and pressure dressings. However, when cases are resistant to this approach, there are various management strategies available to the clinician.

We report the successful surgical treatment, by peroral drainage, of three patients with post-traumatic parotid sialocoeles resistant to conservative management. We discuss the technique and outcome of this simple procedure, and review the causes, presentation and management of parotid sialocoele.

Materials and methods

We report a series of three patients who presented with post-traumatic parotid sialocoeles.

The first case was a 65-year-old woman who presented with a right-sided, cystic swelling of the cheek, following surgical removal of a benign lump overlying the anterior part of the parotid gland. Aspiration of the fluid contents revealed clear fluid in keeping with a sialocoele.

The second case was a 15-year-old boy who presented with a 5 × 5 cm, cystic swelling of the left side of the face following a penetrating injury to the same area which had occurred three weeks earlier. The skin laceration had been sutured in the emergency department on the day of the injury. Once again, clear fluid consistent with a sialocoele was aspirated.

Case three was a 17-year-old young man who had also been stabbed on the left side of his face, and who presented with an 8 × 5 cm, cystic swelling of the left cheek extending

to the angle of the mandible, which was about to rupture and cause a salivary fistula (Figure 1). The patient also had an associated injury involving the marginal mandibular and buccal branches of the facial nerve. Aspiration of the fluid contents confirmed the presence of a sialocoele.

Each of these cases was treated with surgical drainage using a peroral approach under general anaesthesia. Local anaesthesia (lignocaine with adrenaline) was infiltrated into the buccal mucosa. A trocar or large cannula was used to puncture the sialocoele internally (Figure 2) and the puncture wound was then stented with a Silastic® tube (Figure 3), in order to create a permanent, controlled fistula. The tip of the drain was then cut into a flange and sutured to the buccal mucosa (Figure 4).

The patients were reviewed one week and four to six weeks after the surgery. The drains were removed at the latter appointment, at which stage all three patients had resolution of their sialocoele with no complications. There was free drainage of saliva through the new fistula, bypassing the parotid duct. At later follow up, around four to six months, none of the patients had any recurrence of their sialocoele. In the third case, imminent rupture and an external fistula had been prevented.

Discussion

A parotid sialocoele is a periductal accumulation of saliva, also known as a salivary mucocele or salivary retention cyst.¹ There are two distinct types, based on aetiology and mechanism of formation: partial obstruction of the duct (generally caused by inflammation, sialolithiasis or tumour) leading to dilatation of the duct with resultant formation of an epithelial-lined retention cyst; and duct

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FIG. 1

Case three on presentation, showing the presence of a sialocele with imminent fistula formation.



FIG. 2

Peroral drainage of a sialocele.

disruption by trauma or surgery, resulting in extrusion of saliva into the surrounding tissues.

These processes provoke an inflammatory reaction and result in a walled-off collection surrounded by granulation tissue, i.e. a pseudocyst.² Iatrogenic causes include surgery



FIG. 3

Drain placement through a large cannula.

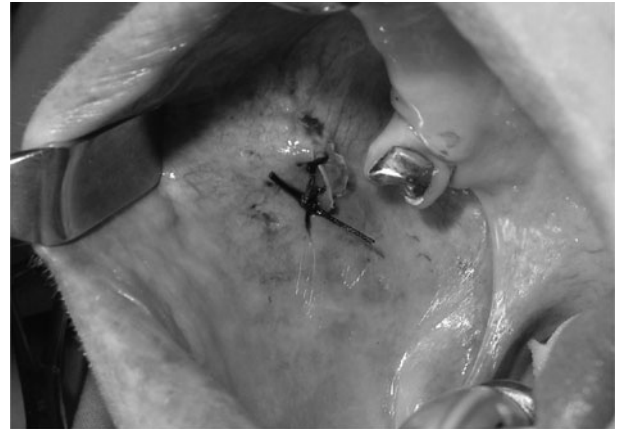


FIG. 4

The drain sutured to the buccal mucosa.

to the parotid gland or mandible,¹ rhytidectomy,² and, rarely, surgery to the temporomandibular joint.³

Patients present with a soft, painless (unless infected) swelling involving the extraoral buccal soft tissue. This swelling usually becomes evident eight to 14 days after injury or surgery,¹ and may be single or multiloculated.¹ It may also present with complications such as infection or intra- or extraoral fistula formation.^{1,4} The cosmetic appearance of a sialocele is often disturbing to patients, and it may be aggravated if complicated by an extraoral or cutaneous fistula.¹

The clinical diagnosis is usually confirmed by aspirating clear fluid from the cyst, which may be analysed for amylase, and by imaging with ultrasound or computed tomography scanning. Computed tomography scanning reveals a cyst-like mass with smooth margins and a lower density than the surrounding tissue.^{1,5-8} Sialography may assist with planning surgical exploration and repair of Stenson's duct, by delineating the extent, anatomical site and classification of ductal injury.⁸

Appropriate management of the glandular or ductal trauma at the time of injury may prevent the formation of a sialocele and its potential complications. This depends on the site of injury, as follows.¹ Type A or intra-glandular ductal injuries are generally effectively treated with capsular suturing and pressure dressings. Type B injuries involve trauma to the parotid duct where it crosses the masseter muscle, and are treated by suturing the duct over a catheter, which is subsequently removed. If the extent of injury is severe enough to preclude this approach, then the proximal ductal segment is ligated. Type C injury involves trauma anterior to the masseter muscle; treatment involves establishing a connection between the duct and the oral cavity by means of an intraoral fistula.

Various modalities of treatment have been advocated for sialoceles. Initial management is conservative, with repeated aspiration and pressure dressings.^{1-4,7-13} The majority of cases resolve with a conservative approach.^{1-4,7-13} Type B and C injuries present a greater risk of developing complications such as sialoceles or fistulae, and thus initial repair of Stenson's duct is advocated in such cases.^{1,9}

Various treatment methods have been successfully used for sialoceles that persist despite a conservative approach. These include: surgical creation of an intraoral drainage pathway (as in the present series); surgical exploration and late repair of Stenson's duct; parotidectomy; tympanic neurectomy; injection with botulinum toxin type A or F; antisialogogues (systemic and transdermal); and radiotherapy (6 to 20 Gy).^{1,2,4,7-11,13-15} Some of these methods are not favoured due to their side effects. Radiotherapy is

carcinogenic.² Antisialagogues have numerous side effects that are often not well tolerated, including: dryness of the mouth, nose, throat and skin; blurred vision; decreased sweating; constipation; difficulty in micturition; drowsiness; headaches; photophobia; and nausea and vomiting.² Subcutaneous injection with botulinum toxin type A has been shown to be effective, as has botulinum toxin type F (albeit with fewer reported cases).^{4,7,10,13} Such treatment may however need to be repeated.

- **A parotid sialocoele is a periductal accumulation of saliva, also known as a salivary mucocele or salivary retention cyst**
- **Correct initial management of a parotid duct injury may prevent the formation of a sialocoele**
- **In this series, an intraoral drainage path was surgically created by placing a drain into the sialocoele and then suturing this drain to the buccal mucosa; the drain was removed upon satisfactory resolution of the sialocoele**

Surgical creation of an intraoral drainage path can be done by placing a drain into the sialocoele, which is then sutured to the buccal mucosa and is removed upon satisfactory resolution of the sialocoele, as in the present series.^{1,2,4,11,13,14} Other reports have described placement of an incision in either the overlying skin^{11,14} or intraorally,^{1,2,4,13} and then insertion of the drain and closure of the initial incision. This procedure is quick and easy to perform, has a low morbidity rate and is highly effective. It carries a smaller risk to the patient than do the larger surgical procedures. Most importantly, it reduces the risk of injury to the facial nerve.

Conclusion

Correct initial management of a parotid duct injury may prevent the formation of a sialocoele. When conservative treatment of post-traumatic parotid sialocoele fails, we advocate the surgical technique described in this report as it is effective, simple and carries minimal risk to the patient.

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