INTRAORAL TRANSPOSITION OF TRAUMATIC PAROTID DUCT FISTULA: A CASE REPORT

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ABSTRACT:
Introduction: Parotid fistula is a rare, devastating disease. It consists of a communication duct between the salivary gland or duct and the skin, through which saliva is discharged. The most frequent etiologies are accidental trauma or a post-operative complication after parotid gland surgery or rhytidectomy.
Case report: The case is described of a parotid fistula following injury by a sword. A 26 years old patient who injured by sword and after suture removal he developed swelling at pre-auricular region. Conservative treatment, consisting of antialagogues was given but swelling was not decreased. The choice of surgical therapy, as opposed to a conservative treatment, was made to create a new path of salivary duct opening into the oral cavity.
Results: 15 days after creating a new path, salivary flow comes into the oral cavity and extra-oral swelling was disappeared.
Conclusion: The use of this surgical approach is recommended to create a new path for parotid duct.
Key words: Parotid duct fistula, repair, antialagogues.

INTRODUCTION:
Parotid fistula is a rare, devastating disease. It consists of a communication duct between the salivary gland or duct and the skin, through which saliva is discharged [1]. The most frequent aetiologies are accidental trauma or a post-operative complication after parotid gland surgery or rhytidectomy.
Acute lacerations, if promptly diagnosed, can be surgically repaired by primary closure.
Conservative treatments that have been described in the literature are local radiation and anticholinergic, antialagogues, such as scopolamine [2, 3]. Antialagogues can be administered orally or transcutaneously to reduce or completely block the salivary flow in approximately 7–10 days. Oral therapy has many side effects, including nausea, vomiting, photophobia, memory loss, mouth, nose, skin and throat dryness, along with other side effects commonly associated with anticholinergic drugs [4]. The transdermal therapeutic system consists of an adhesive patch; this patch contains a priming dose of scopolamine to initiate therapy and a reservoir of active drug to maintain therapy for a further 2–3 days [5]. The only major side effect of this type of treatment is mouth dryness.
An alternative, recently described, conservative treatment for sialorrea is botulinum toxin A (BTX-A) injection, which reduces fistula closure time. This treatment is minimally invasive, is associated with a low morbidity and is well tolerated by the patients [6, 7]. This toxin allows temporary chemical denervation by blocking neurotransmitter release at the cholinergic nerve-ending level. As the secretory fibres to the parotid gland are cholinergic para-sympathetic, they are susceptible to BTX-A inhibition. This effect is fully reversible.
The case is reported of swelling due to collection of saliva in the pre-auricular region following a sutured laceration after injury by sword. A minimally invasive approach, consisting of a combination of antialagogues and transposition of parotid duct. Treatment of chronic fistulas remains controversial. We review the current treatment options for parotid duct fistulas and describe an intraoral diversion technique to reestablish salivary flow in the setting of a nonfunctional parotid duct.
CASE REPORT
A 26 years old male with 8 cm injury by a sword in the left cheek underwent primary repair in an emergency without formal evaluation of the parotid duct. After suture removal, there was collection of saliva at pre-auricular region. During and after meal, pain present and size of swelling was increased. The patient came to our department 10 days later, with 8 cm left cheek scar, a swelling at pre-auricular region and intact facial nerve function. (Fig.1, 2)
On palpation, swelling is soft to hard in consistency. Externally there was no fistula. On aspiration, clear saliva was expressed. Aspiration and glycopyrrolate did not improve his symptoms. Intraoral transposition of the parotid duct was performed.

SURGICAL TECHNIQUE
Patient was planned for intraoral transposition of parotid duct under local anestheesis. 16 ml of saliva was aspirated from that region to reduce the swelling (Fig 3). Pre-auricular incision was given from above to downward; blunt dissection was carried out to reach the capsule of the parotid gland. The distal portion of the parotid duct could not identify owing to extensive fibrotic scar tissue in the wound bed.
Piercing of mucosa done with curved artery to pass the no 20 scalp vein (Fig. 4). Scalp vein was sutured with mucosa with 3-0 silk. Extra-orally, skin layer sutures were taken with 3-0 silk and pressure pack applied.

DISCUSSION
Salivary fistula is a rare, well known complication following trauma or facial surgery in the parotid region [1]. Treatment of parotid fistulas is complex, troublesome and lengthy. Drains and advanced dressing, parotidectomy, tympanic neurectomy, pharmacotherapy with anticholinergic drugs and local radiation are therapeutic options, all of which entail considerable stress for the patient [3]. Total parotidectomy, which is currently the surgical treatment of choice for this condition, is burdened by a high morbidity and increased risk of facial nerve injury. There are also reports of surgical techniques designed to prevent parotid fistule in cases of partial resection of the parotid, and in particular the use of the subcutaneous musculoaponeurotic system to close defects invading the parotid gland [8].

Alternative conservative treatments, particularly scopolamine and BTX-A, have recently been reported [3, 5-7, 9]. These treatments consist of anticholinergic drugs designed to block the cholinergic secretomotor fibres to the salivary gland [3, 4] and thus stop saliva secretion and allow spontaneous closure of the fistula.
Scopolamine is a drug used to prevent and treat motion sickness that has a marked antisialogogic action. The transdermal patch application of this drug gradually releases the drug into the bloodstream, thereby yielding an enduring antisialogogic effect without any of the side effects of the oral therapy, such as constipation, blurred vision and bloated feelings [5].
BTX-A is an exotoxin of Clostridium botulinum, which has previously been used in many neuropathic motor disorders to block the release of acetylcholine in the neuromuscular synaptic membrane [7]. BTX-A has already successfully been used in the treatment of Frey's syndrome, sialorrhea and hyperhidrosis [10].

In this patient, a surgical procedure performed to correct the path of parotid duct and subside the swelling and pain at pre-auricular region. Aspiration of saliva (approx 16 ml) done twice a day. During and after meal, pain and swelling were reoccur. Anti-cholinergic drugs were not effective.
Various treatment options were explained to the patient, who agreed to initially surgical measures. Thus, surgical therapy was selected to create a new path of parotid duct. During treatment, incision was given above the swelling so the saliva collected due to gravity and came out via scalp vein. Facial nerve damage was avoided by using superficial incision at capsular region.

On 15th post operative day, the scalp vein was removed and salivary flow came from the newly created salivary duct by allowing fibrotic tissue formation in the buccal mucosa (Fig 5). To the authors' knowledge, this is the first report of the intra-oral transposition of the traumatic parotid duct fistula.
On summary, this surgical strategy not only proved successful but avoided use of an invasive approach and further risks for the patients. We believe that surgical therapy using pressure dressings, low dose glycopyrrolate can be used as an effective treatment with low risk of complication.

REFERENCES:

Fig. 1. Showing pre-operative front view with a swelling at pre-auricular region at left side

Fig. 2. Showing pre-operative lateral view with a scar at left cheek
Fig. 3. Showing aspirated 16ml of saliva preoperatively

Fig. 4. Shows curved artery inserted extra orally to pass the no 20 scalp vein

Fig. 5. Salivary flow came from newly created salivary duct.