

Case Report

Parotid fistula due to iatrogenic parotid duct injury

Nagaraj A. Kagali*, G. A. Latha

Department of General Surgery, ESIC MH & PGIMS and Research, Rajajinagar, 3rd Block, Bangalore-560010, India

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***Correspondence:**

Dr. Nagaraj A. Kagali,

E-mail: kagalin@yahoo.com

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ABSTRACT

The most common cause of parotid fistula is trauma, operative complications followed by malignancy and infection. Injury to the duct may be difficult to diagnose unless one has high index of suspicion while operating in the parotid region. Sequelae of inadequate diagnosis and treatment include parotid fistula and sialocele formation which are inconvenient for the patient and difficult to treat. We are reporting a case of parotid fistula due to injury to parotid duct following extensive debridement for necrotising fasciitis of cheek extending to the neck following tooth extraction.

Keywords: Iatrogenic parotid duct injury, Parotid fistula

INTRODUCTION

The parotid duct is approximately 7 cm long and generally follows a line drawn from the tragus to the mid portion of the upper lip and any injury/surgery across this line should be considered to involve the duct unless proved otherwise. These injuries are often overlooked because of more severe concomitant injury or difficulty in obtaining the diagnosis. The reported case emphasizes this.

CASE REPORT

A forty five year old male patient reported with history of watery discharge from the cheek in front of (L) ear of 6 months duration. He had undergone extraction of 2nd left upper molar tooth following which he developed severe extensive necrotizing fasciitis of cheek which extended to neck. He underwent extensive wound debridement and immediately after surgery he started having copious watery discharge from the wound. He was treated with antibiotics and dressings. The wound healed in two

months but a small opening persisted in the scar over (L) cheek discharging watery fluid, more so during mastication.



Figure 1: Parotid fistula with watery discharge through previous surgical scar.

Local examination revealed extensive scarring in the region of (L) cheek extending all along the anterior border of left sternomastiod down to supra clavicular region and upper chest wall. A small opening with watery discharge was seen in the previous scar of the cheek corresponding to the proximal part of parotid duct. However there was no evidence any facial palsy (Figure 1).



Figure 2: Parotid fistula opening being cannulated for fistulogram.

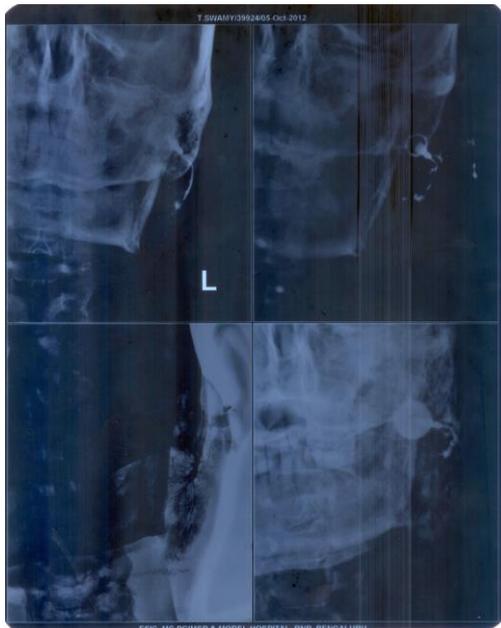


Figure 3: Gland showing enlargement and delineated with contrast.

Investigation

Routine investigations were found to be normal except high blood sugar levels. Fistulogram was done after cannulating the opening with 20G cannula (Figure 2). The fistulogram clearly delineated the duct and its ramifications within the gland and the gland also

enlarged in size during the procedure (Figure 3). We were unable to cannulate the distal duct from the ampulla intra orally, hence could not delineate the distal duct.⁴

Laboratory analysis of the fluid revealed amylase level of more than 10000U/L which confirmed the diagnosis of parotid fistula.

Treatment

Treatment with antibiotics (amoxicillin/clavulanate potassium), pressure dressing, anticholinergics (proprantheline bromide) was tried but with no relief. Patient underwent exploration under GA after adequate control of diabetes. After cannulating the duct elliptical incision was put encircling the opening. The duct was traced proximally for about 2 cm and ligated with 3-0 silk. The incision was closed with 5-0 proline (Figure 4).



Figure 4: Main parotid duct isolated and ligated.

There was swelling of the gland in the initial 3 post-operative days which gradually subsided with aspiration, pressure dressing and proprantheline. The patient was followed for one month and there was no leakage.

DISCUSSION

Parotid duct injuries have been described in the literature¹ for several hundred years, and published surgical treatments of parotid duct injuries began to appear in 1890s. Nicoladoni reported the first primary anastomosis of the parotid duct in 1896. Morestin reported ligation of the proximal duct in 1917, and formation of an oral fistula was described in 1918. Approximately 0.21% of patients with penetrating trauma in the parotid region experience an injury to the parotid duct. About 26% chance of injuring the parotid duct exists with the removal of buccal fat pad.⁵ The present case was due to extensive debridement following necrotizing fasciitis due to tooth extraction for dental abscess of (L) 2nd molar which is very rare occurrence and also because of the severity of the concomitant life threatening condition,

injury to the parotid duct during surgery tends to be overlooked/missed.

Injury to the parotid duct is classified into three categories depending on the regions- 1. Posterior to masseter or intraglandular, 2. Overlying masseter, 3. Anterior to masseter. In the present case it was overlying the masseter.

Medical therapy involves antibiotics, the drug of choice is amoxicillin/clavulanate potassium 500/125 mg PO bid and anticholinergic drug usually propantheline bromide 15 mg PO qid half an hour prior to meals, and pressure dressings. Alternatively, chronic fistula and sialocele have been managed by botulinum toxin type A.⁵

Surgical management involves repair or ligation or reimplanted into papilla/into oral mucosa posterior to papilla as the case may be.^{3,6} If both proximal and distal portions of the duct could be identified than a single layer of interrupted sutures (8-0 to 10-0 nylon) is used to re-approximate with surgical microscope or under loupe magnification over a silastic tube passed from the papilla intra orally. If a portion of the duct is damaged beyond repair or is missing, the proximal and distal ducts should be ligated. In the present case the distal could not be identified due to extensive scarring, so proximal duct was ligated. After proximal duct ligation, expect marked temporary swelling of the gland followed by rapid atrophy. If the injury is close to the papilla, the fistula tract and surrounding ellipse of skin may be passed in the oral cavity and sutured to buccal mucosa with 4-0 chromic catgut. Some cases require superficial parotidectomy.⁵

Duct ligation may lead to early oedema of the gland with pain. It usually subsides spontaneously within 1-2 weeks

as atrophy of the gland occurs. Late complication of ligation includes chronic infection of the remaining gland. No special follow-up is required over and above routine care.

CONCLUSION

It is necessary to be aware of the possibility of injury to the parotid duct during any surgery in the parotid region. The case presented emphasizes the importance of this aspect. Any injury/dissection that crosses the line joining the tragus to mid portion of upper lip should be considered to involve the parotid duct unless proven otherwise.⁵ Immediate recognition and primary repair is the preferred treatment.

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