

Short communication

Seldinger technique in repair of the parotid duct

A.J. Hills^{a,*}, R.Y. Kannan^{b,1}, M. Williams^{a,1}

^a Dept. of Maxillofacial Surgery, Queen Victoria Hospital, East Grinstead, UK

^b Dept. of Plastic Surgery, Queen Victoria Hospital, East Grinstead, UK

Accepted 27 July 2018

Available online 6 December 2018

Abstract

Injuries to the parotid ducts are difficult to locate, assess, and repair, and traditionally, solid metal dilators and soft plastic tubes have had only limited success. We describe the Seldinger technique with a central venous catheter, which makes repair easier.

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Keywords: Mesenchymal Stem Cells; Bone Marrow Aspirate Concentrate; Distraction Osteogenesis; Biomechanical Strength

Introduction

Lacerations of the parotid duct can be difficult to deal with. The duct is commonly cannulated during sialoendoscopy, and many surgeons use a VenflonTM cannula (BD Worldwide) for irrigation after injury. Sialoendoscopes are not always available, and the VenflonTM is short, cannulates only the proximal duct, and commonly becomes dislodged because of its bulky port and wings. Lacrimal probes may cause further damage, perforate the duct, or create a false passage. We describe a new technique that we used recently.

Technique

To repair the complete laceration of the parotid duct, we used a size 4.5 F (1.5 mm) Leadercath[®] (Vygon Ltd) central venous catheter. First, we used the Seldinger technique to pass a guide

wire through the opening of Stensen's duct, across the ductal division, and into the proximal portion. We anastomosed the parotid duct over the guide wire with 10/0 Ethilon[®] (Ethicon), passed the catheter over the guide wire and removed the wire, leaving the catheter distal to the anastomoses (Fig. 1). We flushed the catheter with normal saline as it was withdrawn to test patency (Fig. 2) and facilitate further repairs before it was removed. We then used Tisseel fibrin glue (Baxter Healthcare Corporation) to help seal and support the repair. Four weeks later, we could express saliva from the duct with none of the usual consequences of ductal injury.

Discussion

Successful treatment of an injury to the parotid duct depends on prompt recognition and appropriate early intervention because the continuous flow of saliva can result in the formation of sialoceles and fistulas, the treatment of which is more challenging than immediate primary repair.

Primary microsurgical repair, with or without a stent, is preferable where possible, using interpositional autologous vein grafts where there is insufficient venous length for primary anastomosis.¹ If anatomical repair is not feasible, the

* Corresponding author.

E-mail addresses: Alexanderhills1@nhs.net (A.J. Hills), ruben.kannan@nhs.net (R.Y. Kannan), m.williams16@nhs.net (M. Williams).

¹ Queen Victoria Hospital NHS Foundation Trust, East Grinstead RH19 3DZ, UK.



Fig. 1. Central venous catheter inserted over the guide wire and into the parotid duct.



Fig. 2. Flushing facilitates seamless assessment of the patency of the repair.

proximal end of the duct can be brought as a fistula through the buccinator muscle and oral mucosa to preserve function. Otherwise ligation may be considered, but this could subsequently atrophy.

Identification of the proximal duct is aided by early systematic exploration using magnification and irrigation along the course of the parotid duct (following a line drawn from the tragus to the mid-point of the upper lip, superficial to the masseter). Because they are in close proximity to the duct, the transverse facial artery and buccal branch of the neurovascular bundle of the facial nerve are often damaged concurrently, and spot bleeding (which can be seen on gentle irrigation) can help to locate the position of the duct. Apposition of the

divided tissues, with a central venous catheter to cannulate the distal duct, can also help to establish the diameter and approximate position of the proximal duct.

If the duct cannot be located, conservative management (such as antisialogogues, compression, and avoidance of oral intake), may be introduced until the injury has healed.² Botox may also be considered as an adjunct, as it has given good results in the resolution of sialoceles and salivary fistulas.^{3,4}

Metal dilators have been the mainstay of cannulation of the parotid duct, but the ridges are likely to cause iatrogenic perforation. Various materials have been used as intraductal stents after repair, such as the cuff of an intubation tube, an epidural catheter, a urethral catheter, a double-J catheter, catgut, and Vitallium wire (Stryker Corporation).^{5–9} Despite the prevalence of the Seldinger technique for decades, it has not to our knowledge previously been used to repair the parotid duct.

The central venous catheter (which is readily available in theatre and specifically designed to run within a narrow lumen) is ideally suited to cannulate the parotid duct, and confers several advantages. Both wire and catheter have soft tips that conform easily to the shape of the duct, which minimises injury. The length of the catheter means that it can be fed through the entire length of the parotid duct easily to support a microsurgical repair, and protects the back wall from being caught during suturing; its bright colour helps to locate the duct. The length also aids retention and positioning to help test the integrity and patency of the repair with local saline flushes, a key advantage over contemporary methods. Where ductal stenosis is of concern, it may be cut short to splint the duct and protect the repair, before being removed at the bedside after about two weeks.

Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patient's permission

We obtained ethics clearance from the faculty of dentistry. The patient's permission was not required.

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