

Original Article
Suture-assisted punctoplasty

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Abstract

Purpose—To describe a surgical technique in which a suture, instead of forceps, is used to improve access for the introduction of scissors and more easily achieve an appropriately-sized punctoplasty.

Materials and Methods—In this technique, a new modification of the 2-snip punctoplasty, a 6-0 polyglactin 910 suture is passed through the posterior wall of the punctum to apply traction. A video of the technique is provided.

Results—This technique improves the surgical field of view and eases access for introduction of Vannas scissors into the punctum to perform the punctoplasty.

Conclusions—This simple and practical modification of the 2-snip punctoplasty improves instrument access so that an appropriately-sized punctoplasty can be performed with ease.

Introduction

The lacrimal puncta are the two entry points of the lacrimal system. The lower lacrimal punctum is a small opening, approximately 0.3 mm, at the medial aspect of the lower eyelid, situated on a conical elevation called the lacrimal papilla and surrounded by an annular fibrous band.¹ Stenosis of the punctum is a common cause of epiphora and has numerous etiologies, including chronic blepharitis, ectropion, anti-ocular hypertensive drops and infections such as herpes simplex.² Different procedures that have been suggested for the treatment of punctal stenosis include punctal dilation, the 1-snip, 2-snip, and 3-snip punctoplasty,¹ and punctal punching.³ The authors describe a simple and practical modification of the 2-snip punctoplasty, which could also be adopted for the 3-snip punctoplasty. This technique improves both the surgical field of view and ease of instrument access; as such, a punctoplasty of the correct and required size can be performed with greater ease. To our knowledge, this technique has not been described previously in the literature.

Materials and Methods

The surgical procedure is performed as follows (Figure 1). First, the lower eyelid punctum is infiltrated with subcutaneous anesthesia (lignocaine 2% and adrenaline 1:200,000), and the punctum is dilated with a punctum dilator. A 6-0 polyglactin 910 suture on a round-bodied needle is then passed through the posterior wall of the punctum (Figure 1A). The use of a round-bodied needle prevents cheese-wiring through the tissues. Traction is applied superiorly on the suture in order to hold and maintain tension upon the posterior wall of the punctum (Figure 1B). Next, Vannas scissors are introduced into the punctum, and a 2-snip punctoplasty is performed as two snips are made on either side of the suture to excise a small triangular piece of tissue from the posterior aspect of the punctum (Figure 1C). Depending on the size of the punctoplasty required, the size of the triangular tissue removed from the posterior punctal wall can be varied (Figure 1D).

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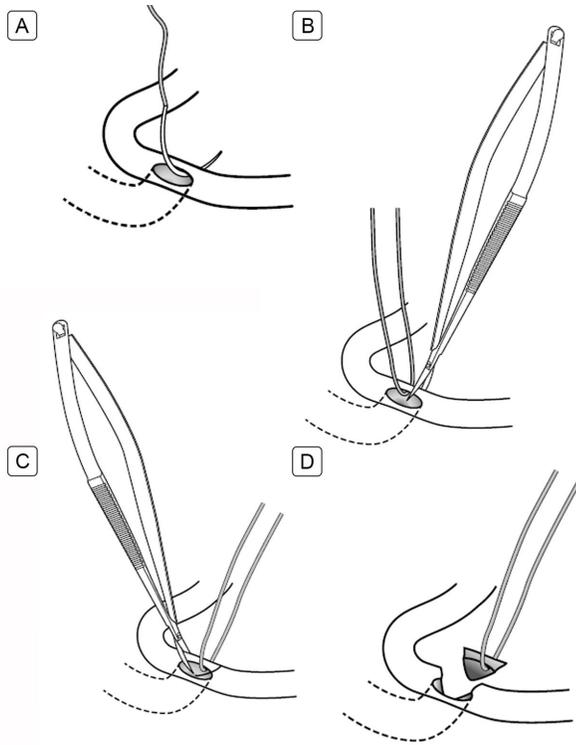


Figure 1. Operative steps in line diagrams. A, 6-0 polyglactin 910 suture on a round-bodied needle is passed through posterior ampulla. B–C, Traction is applied to the suture during the first snip (B) and second snip (C), producing the posterior ampullectomy. D, A triangular piece of tissue is excised to form the punctoplasty.

Results

A 72-year-old white woman presented with symptoms of epiphora in both eyes of 1 year's duration. Clinical examination revealed a raised tear meniscus and involutional punctal stenosis in both lower puncta. The remainder of the ocular examination was normal, with no signs that would be suggestive of a reflex epiphora. She underwent bilateral suture-assisted punctoplasty, as shown in Video 1. Her symptoms of epiphora improved following punctoplasty, and she remained symptom-free at 6 months' follow-up.

Discussion

An ideal punctoplasty procedure achieves a large enough punctum with minimal disruption of anatomy and also reduces the risk of restenosis.^{4,5} Although the punctoplasty is a relatively simple surgical procedure, there is a considerable variation in the surgical techniques described to perform a punctoplasty; these include



Video 1. Demonstration of the operative steps of the technique for suture-assisted punctoplasty.

1-snip, 2-snip, and 3-snip punctoplasty techniques,^{1,4,6} punctal punching,³ adjuvant use of mitomycin C,⁷ perforated punctal plugs,⁸ and use of mini-Monoka stents.⁹

In 1853 Bowman described the 1-snip punctoplasty, which had a high rate of failure attributable to reapproximation of the adjacent raw cut edges.⁶ To solve this problem, a 2-snip variation of the surgery was suggested by Jones in 1962.¹ More recently 3- and 4-snip punctoplasty techniques have been described.^{4,10}

We present a new, simple, and easy-to-perform modification of the punctoplasty by using a suture, instead of forceps, which is passed through the posterior wall of the punctum to apply traction. Within the small aperture of the lacrimal punctum, it can be difficult to simultaneously manipulate tissues effectively with forceps and scissors. Indeed, the forceps may obstruct the surgical field of view and hinder the introduction of scissors into the punctum. Our modification involving the use of a suture for traction (instead of forceps) improves both the surgical field of view and the access for introducing Vannas scissors into the punctum. This allows the surgeon to perform the procedure with greater precision in order to achieve a punctoplasty of the desired size. Although we describe this technique for the 2-snip punctoplasty, this method could also be adopted for the 3-snip punctoplasty.

Literature Search

PubMed, Embase, and Google were searched last on October 27, 2016, without date restriction, using the following terms: *punctoplasty*, *2-snip*, *3-snip*, and *punctal stenosis treatment*.

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