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Short Communication

Reduction meatoplasty with a post-auricular island flap

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Abstract

The importance of an adequate meatoplasty is often emphasised in mastoid surgery. However, bigger is not always better, as an excessively widened external meatus can be cosmetically unacceptable, provide little extra benefit for cleaning, be an obstacle to the good fitting of hearing aids and expose the mastoid cavity to exaggerated caloric effect.

The problems created by an overly large meatus can occasionally be difficult to manage, prompting consideration of reduction of the meatus. We describe the use of a pedicled, post-auricular skin flap to achieve reduction of an excessively large meatus.

Key words: Ear, External; Ear Deformities, Acquired; Reconstructive Surgical Procedures

Introduction

The literature is rich with discussion on techniques for widening the external auditory meatus. Methods of primary and revision meatoplasty are well described.[1,2] Few would disagree that an appropriate meatoplasty is the key to successful mastoid surgery.[3,4] However, bigger is not always better, as an excessively widened external meatus can be cosmetically unacceptable, provide little extra benefit for cleaning, be an obstacle to the good fitting of hearing aids and expose the mastoid cavity to exaggerated caloric effect.

Occasionally, patients present with an overly enlarged meatus, after mastoid surgery performed by a well intentioned surgeon. Only one previously published paper has discussed the technique of reduction meatoplasty.[5]

We discuss an advancement on that technique, which has the advantages of robust and rapid healing and the ability to close larger defects.

Materials and methods

An incision is made along the upper and lower borders of the meatus and continued back towards the antihelical fold (Figure 1a). A variable amount of posterior conchal and antihelical skin is mobilised to close the defect (Figure 1b). This flap is brought forward and the edges sutured to a more anterior position along the upper and lower incisions (Figure 1c). This now leaves a substantial defect in the posterior aspect of the concha/pinna.

A post-auricular island or 'flip-flop' flap is utilised to close this defect. The flap is traditionally based on the posterior auricular muscle, local fascia, and inferiorly on the muscle and tendon of the sternocleidomastoid muscle at its insertion at the mastoid. Large flaps, as big as 6×6 cm, have been described.[6] The skin, fascia and muscle are mobilised around the junction of the posterior auricular muscle and the sulcus (Figure 1c). This now creates a 'through and through' defect in the conchal bowl. The flap is rotated 180° along its longitudinal axis. The flap skin is now sutured into the anterior defect with Vicryl Rapide (Ethicon, Johnson & Johnson, Australia) (Figure 1d). The posterior incision is closed primarily with interrupted nylon sutures, recreating a new sulcus and shallower auriculocephalic angle. A Penrose drain may be employed, and antibiotic ointment is used as a dressing in the new concha.

Discussion

The previously described technique for reduction meatoplasty relied on skin grafting of the posterior conchal defect, that results from advancement of posterior skin. This substantially prolonged healing time and reduced reliability when compared with the current technique. The use of the 'flip-flop' or posterior auricular island flap is well described.[7] Stucker and Sanders[8] used it with great success in over 350 cases to repair the donor defect from composite skin/perichondrial grafting from the bowl. Talmi[9] has also described its use in the reconstruction of auricular defects.

Although original descriptions of surgical technique and anatomy emphasised the importance of the muscle and posterior auricular artery,[6] this appears to be less significant. Successful use on less than 50 per cent of pedicle and three years following ipsilateral radical neck surgery have been described.[9] Anatomical study demonstrates robust vascular supply but with minimal contribution from the underlying muscle.[10] The post-auricular skin flap may, more accurately, represent a fasciocutaneous flap and thus explain its utility in a post-surgical setting.

The use of the island flap provides excellent skin colour match. It contours well with the conchal anatomy. There is a reliable blood supply. It can be performed as a single stage procedure, with a well concealed donor site. It also gives an excellent cosmetic result (see Figure 2). It can, however, be time-consuming and requires some expertise. However, in all other respects, this technique for reduction meatoplasty aids substantially in the closure of an overly enlarged meatus.

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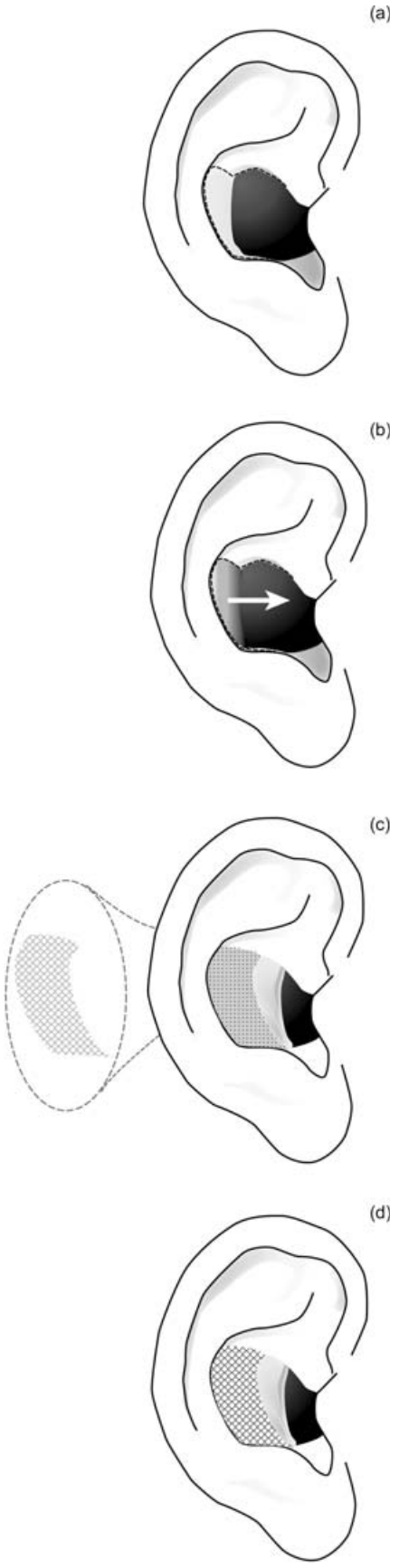

FIG. 1

Steps involved in advancing the posterior conchal skin forward and filling the subsequent defect with pedicled post-auricular skin. See text for explanation of steps.

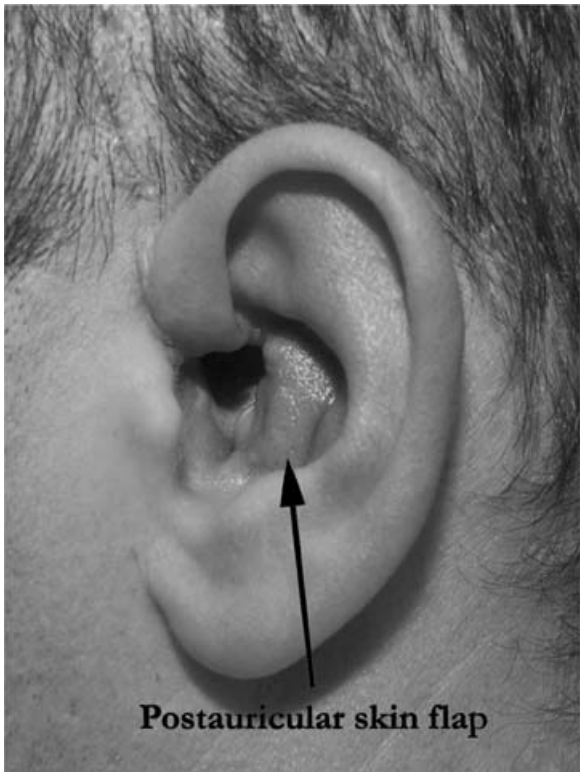

FIG. 2

Four week post-operative appearance showing the relocated posterior skin.

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