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Lateral rhinotomy through nasal aesthetic subunits. Improved cosmetic outcome

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Abstract

The traditional lateral rhinotomy incision described originally by Moure in 1902 has proved a versatile approach to the mid-facial skeleton. It is not, however, without its complications, particularly poor cosmesis due to depression of the nasofacial groove. In one series 10 per cent of patients developed wound complications. We present our modification of the lateral rhinotomy incision, that takes account of the nasal aesthetic subunits by placing the incision between the dorsal and side wall nasal subunits with extension inferiorly along the alar groove.

From November 1994 to February 2001, a retrospective review of case notes showed that 20 patients underwent modified lateral rhinotomy incision for a variety of pathology. Ten cases were for transitional papilloma, nine for malignant disease and one for chronic osteitis of the maxilla and ethmoids post-trauma. Follow up ranged from two weeks to five years. In five cases we were able to preserve the bony piriform aperture without compromising the excision or exposure. We believe that preservation of the bony piriform aperture will further enhance the overall cosmesis and nasal function. No complaints related to the incision were recorded.

Our experience with the modified lateral rhinotomy incision has been very satisfactory. It provides good exposure, a low complication rate and excellent cosmetic outcome without undue technical difficulty. It is our preferred incision for all surgery on the mid-facial skeleton and anterior skull base.

Key words: Nose; Surgical Procedures, Operative; Cosmetic Techniques

Introduction

Lateral rhinotomy has been a versatile approach to the mid-facial skeleton for many years and even today with the expanding field of endoscopic sinus surgery it is still utilized for both benign and malignant nasal pathology, not readily accessible endonasally. Originally presented by Moure of Bordeaux in 1902 it was first described by Michaux in 1848.[1] Since then various modifications have been introduced including the Weber-Fergusson extension along the subciliary line and also the lip split. However, despite these modifications the basic incision remains the same as that described by Michaux, where the incision is placed in the nasofacial groove.

The standard lateral rhinotomy incision with, or without, lip split continues to provide adequate exposure of the mid-facial skeleton. It is not, however, an approach without complications and its cosmetic outcome is less than satisfactory. Poor cosmetic outcome has been reported as high as 10 per cent of patients.[2] These cosmetic complications include excessive scarring or puckering at the wound site, webbing around the medial canthus and vestibular stenosis. Complications related to the eye include ectropion and prolonged lower lid oedema.[3]

With increasing awareness of the cosmetic outcomes of surgery this rate of cosmetic complication is not acceptable. By paying attention to the aesthetic subunits that make up the nose this complication rate can be reduced.

We present a consecutive cohort of 20 patients who were operated on through a modification of the lateral rhinotomy incision. By taking into account the aesthetic subunits that make up the nose, when placing the incision, the cosmetic outcome is improved. By preserving the piriform aperture the functional end result is also improved.

Technique

All procedures were performed under general anaesthesia. The skin incision is marked out between the dorsal and sidewall aesthetic subunits of the nose from just below the medial canthus to the superior part of the alar groove. A 'Z' or 'W' is incorporated in the

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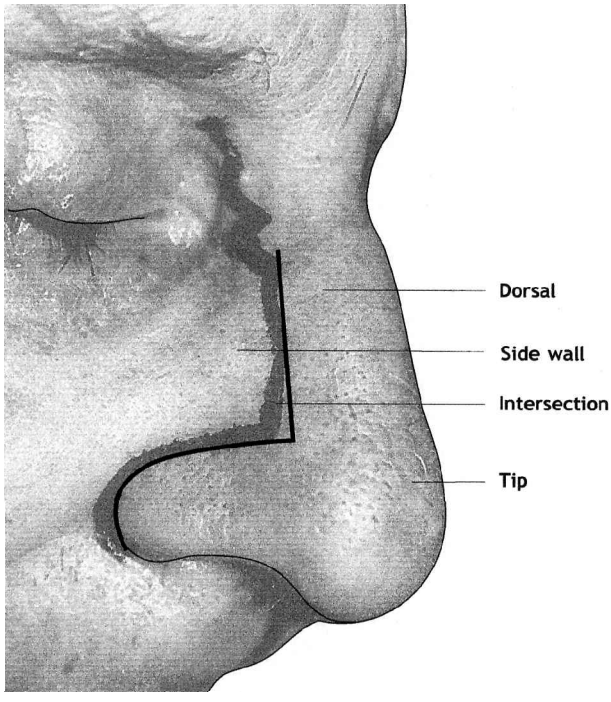

FIG. 1(a)
Marked (diagrammatic) skin incision between dorsal and side wall nasal aesthetic subunits.

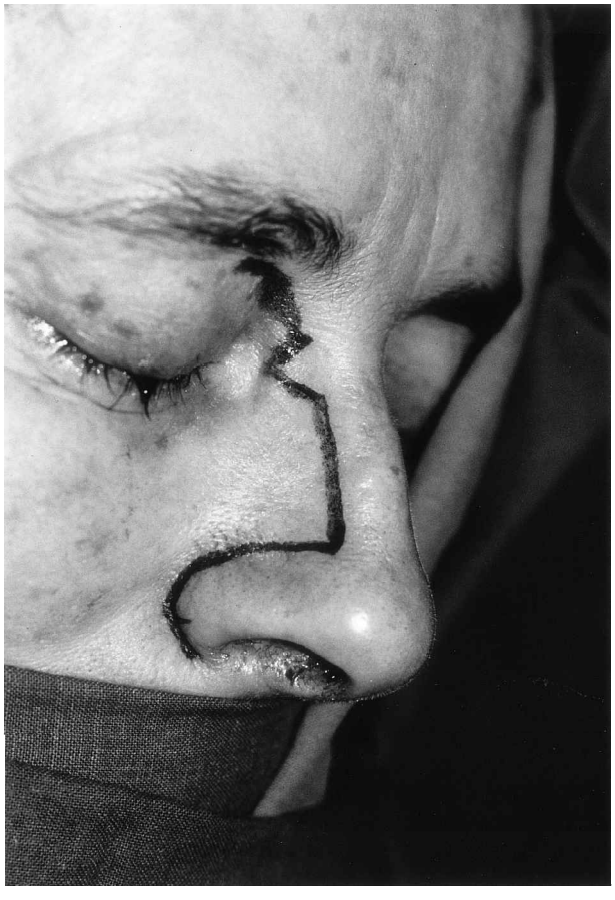

FIG. 1(b)
Marked skin incision between dorsal and side wall nasal aesthetic subunits.

FIG. 2
Incision down to bone. Flap raised.

incision at the mid point between the dorsum and the medial canthus (Figure 1(a) and (b)). The incision can be extended superiorly or laterally along the sub-ciliary line as in the Weber Ferguson modification. The incision line is locally infiltrated with two per cent Xylocaine with 1:80 000 adrenaline.

The incision is made down to the periosteum and a composite sub-periosteal flap is elevated laterally to the infraorbital foramen. The medial canthal tendon is detached (Figure 2). The lacrimal sac is transected and the face of the maxilla is exposed in the subperiosteal plane whilst preserving the infraorbital neuro-vascular bundle. This provides wide exposure of the hemi-mid-facial skeleton from the nasofrontal suture down to the upper alveolus and from the nasal bones to the infraorbital foramen (Figure 3). This approach also allows wide exposure of the ethmoid complex. The osteotomies and medial maxillectomy is carried out in the standard fashion. In some cases the bony piriform aperture can be preserved by placing the osteotomies 5 mm above the rim (Figure 4).

Closure is performed in two layers with 4/0 undyed Vicryl continuous subcutaneous sutures and 6/0 nylon continuous for skin (Figure 5). A thick layer of Bactroban ointment is used as a semi-occlusive dressing for five days post-operatively at which point the sutures are removed.

FIG. 3
Exposure of the hemi-mid-facial skeleton.

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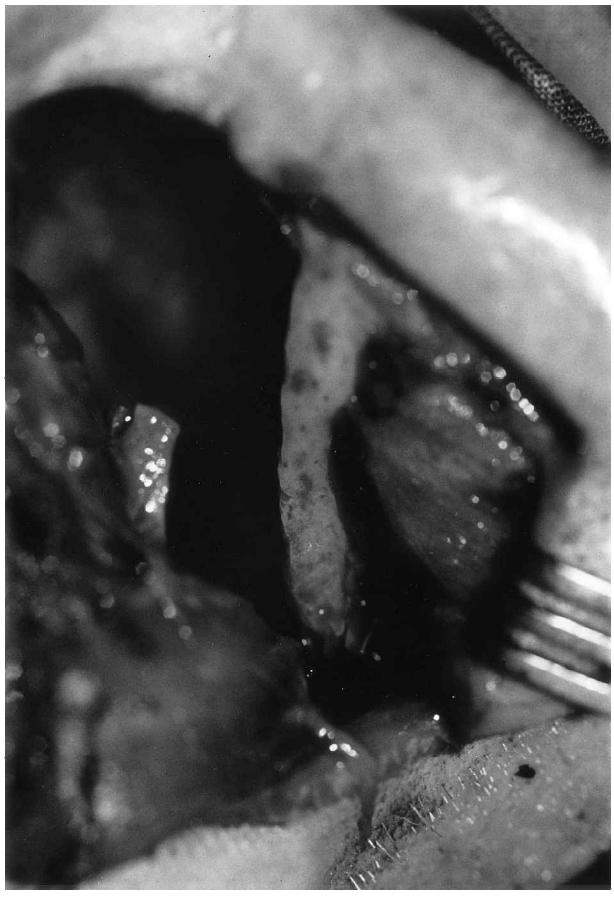

FIG. 4
Preservation of the bony piriform aperture by means of a 5 mm rim.

Patients are advised to massage the incision site with a moisturizing cream at least twice a day for six weeks post-operatively after removal of sutures. This appears to soften the incision, reduce induration and tenderness.

Method

All case records of patients who had undergone a modified lateral rhinotomy through the aesthetic subunits of the nose between November 1994 to February 2001 were identified and reviewed. The indication for surgery, pathology and the post-operative course were all recorded onto an Access database for descriptive analysis. Special interest was taken in the cosmetic outcome and any complications related to the incision.

FIG. 5
Incision closure.

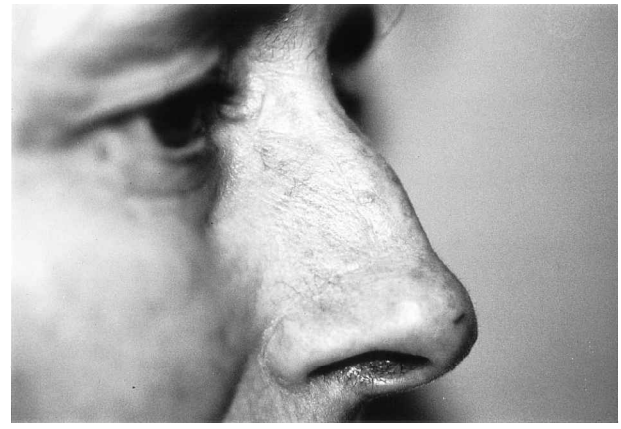

FIG. 6
Final cosmetic result.

Results

From November 1994 to February 2001 a total of 20 cases were performed through the modified lateral rhinotomy incision. Ten were for inverted papilloma, nine for malignant disease and one for post-traumatic chronic osteitis of the maxilla and ethmoid. In five cases preservation of the bony piriform aperture was possible without compromising the excision.

There were no complications related to the incision recorded, and the cosmesis was excellent in all cases (Figure 6).

Discussion

The face is made up of various aesthetic units and these units have their sub-units. The aesthetic sub-unit principle is being employed increasingly in reconstructive facial surgery to achieve better cosmetic outcomes. The nose is one of the aesthetic units of the face[4] and is itself made up of smaller subunits of slightly convex and concave surfaces separated by shallow valleys and ridges.[5] These subunits are the dorsum, sidewalls, tip, alar lobules and soft triangles (Figure 7). Incisions placed along the relaxed skin tension lines and rhytids heal better. Incisions that avoid transecting the aesthetic subunits give better cosmetic outcomes. Also, incisions placed at the interface of subunits give better cosmesis due to being hidden by the normal contours of the surface. Placement of the incision at the intersection of dorsal and side wall subunits of the nose takes advantage of all these principles. The standard lateral rhinotomy incision[6] disregards these principles transecting the nasal and midfacial subunits of the face and often leads to an obvious, depressed scar. We have employed the modified lateral rhinotomy incision incorporating the aesthetic sub-unit principle in 20 cases giving wide exposure and

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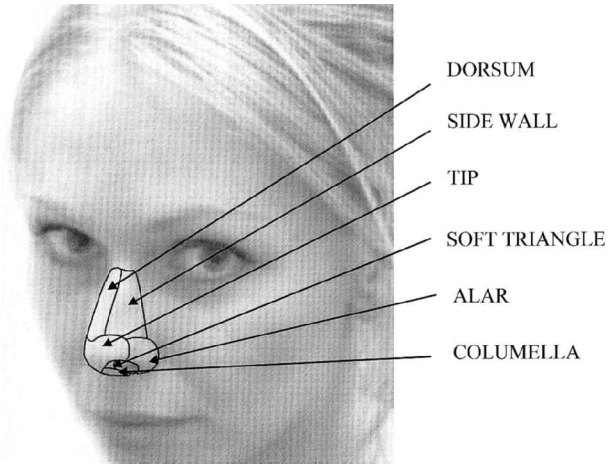

FIG. 7
Figure showing the aesthetic sub-units that make up the nose.

achieved an extremely successful cosmetic outcome. To date we have had no cases of webbing at the medial canthus.

In addition we believe that by preserving the bony piriform aperture, we can improve not only the ultimate cosmesis but also preserve nasal function by not destabilizing the anterior end of the inferior turbinate. This is especially the case in skull base approaches where the lateral wall of the nose is preserved intact.

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