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ScienceDirect
British Journal of Oral and Maxillofacial Surgery 50 (2012) e6–e8
BRITISH Journal of Oral and Maxillofacial Surgery
www.bjoms.com

Short communication

The nasolabial approach: a potential alternative to the lip-splitting incision for maxillectomy

Karen A. Eley [a,*], Stephen R. Watt-Smith [b]

[a] *Nuffield Department of Surgical Sciences, University of Oxford, Oxford Radcliffe Hospitals NHS Trust, Headley Way, Oxford OX3 9DU, United Kingdom*
[b] *Department of Oral & Maxillofacial Surgery, Oxford Radcliffe Hospitals NHS Trust, Headley Way, Oxford OX3 9DU, United Kingdom*

Accepted 27 June 2011
Available online 26 July 2011

Abstract

First described by Weber and later modified by Fergusson, the Weber–Fergusson incision has undergone numerous modifications, but the fundamental approach to maxillectomy has largely remained the same. We report the potential benefit of a nasolabial incision for partial maxillectomy. The incision is hidden within the nasolabial fold and obviates the need for division of the upper lip, which may undergo atrophy and shortening after radiotherapy.

Keywords: Maxillectomy; Incision; Approach; Technique; Weber–Fergusson

Introduction

The concept of maxillectomy dates back to 1826,[1] but it was not until two years later that the first maxillectomy (including orbital exenteration) was done by Syme without the benefit of general anaesthesia. Today, total maxillectomy, as it was first described, is rarely indicated, with partial or subtotal maxillectomy typically the surgery of choice. Partial maxillectomy may often be accomplished through a purely intraoral approach. Extraoral incisions where necessary are traditionally through the Weber–Fergusson approach in which access to the maxilla is by a lateral rhinotomy incision combined with a midline incision through the upper lip and infraorbital extension.[2] Many modifications have been reported in an attempt to minimise complications of the lower eyelid and upper lip,[2–4] but the fundamental approach has largely remained the same.

Case report

A 67-year-old man presented with a three-week history of swelling of the right cheek. Imaging showed a lesion that involved the right maxilla and maxillary sinus. Biopsy confirmed an osteosarcoma, and the decision made to proceed with surgical excision, with post-operative chemo-radiotherapy.

The tumour was palpably close to the overlying skin warranting full thickness elliptical excision adjacent to the nasolabial fold. A Weber–Fergusson incision potentially would have compromised the vascularity of an area of skin lateral to the upper lip, so subtotal maxillectomy (class 2b)[5] was completed through nasolabial and intraoral incisions. There was no difficulty in accessing the posterior resection margin at the pterygoid plates. The resultant scar was hidden

* Corresponding author.
E-mail addresses: Karen.a.eley@gmail.com (K.A. Eley), Steve.watt-smith@ndm.ox.ac.uk (S.R. Watt-Smith).

0266-4356/$ – see front matter
doi:10.1016/j.bjoms.2011.06.005

Fig. 1. Postoperative result showing the nasolabial incision concealed in the nasolabial fold (image used with the patient's permission).

in the nasolabial fold, and the integrity of the upper lip maintained (Fig. 1).

With good cosmetic result, the incision has subsequently been utilised in a small number of selected cases. To obtain access to the orbital floor, the nasolabial incision is extended to the lateral rhinotomy and the subciliary tissues (Fig. 2), which produces a trapdoor effect with excellent access to all maxillectomy excision margins.

Discussion

One of the first reported cases of maxillectomy was carried out by Fergusson in 1842 for a maxillary tumour in a 12-year-old girl.[6] The incision down to bone and cartilage was made along one side of the nose from a quarter of an inch from the inner angle of the eyelids with division of the upper lip.[6] Over a century later, these fundamental steps remain the same, but many limitations of the approach have been reported. Modifications have included extending the incision to permit access to the cranial skull base, pterygopalatine fossa, or infratemporal fossa, or both – the extended osteoplastic maxillectomy.[7,8]

Fig. 2. Nasolabial incision with extension to the subciliary tissues to provide access to the orbital floor in a second patient.

Fig. 3. Shortening of the upper lip and loss of soft tissue bulk in a patient after a lip-splitting incision and postoperative radiotherapy.

Many authors have attempted to address the poor cosmetic outcome associated with certain areas along the Weber–Fergusson incision.[2–4] One of the most comprehensive attempts was the Leeds modification.[9] The authors highlighted the problems of misalignment of the upper lip, unsightly scarring around the nasal vestibule, and ectropion. Their modifications included an angled incision through the lip to improve alignment of the vermilion border with a zigzagged incision over the philtrum to improve cosmesis, and incision through the lower conjunctival sac to prevent ectropion.

Most maxillectomies are done for malignant disease, the most common of which is squamous cell carcinoma (80%).[10] It is therefore anticipated that a proportion of patients may require postoperative radiotherapy. Problems associated with contracture of the scar and atrophy of the soft tissue are likely to be more apparent in these patients, particularly the edentulous. One of the most challenging problems to overcome following radiotherapy is shortening and loss of bulk of the upper lip secondary to contracture and fibrosis as well as loss of soft tissue support (Fig. 3). Stepping the lip incision at the nasal sill, philtrum,[7] and vermilion with a Z-plasty at the mucosa to reduce contracture[8] may not be enough to prevent these problems.

The nasolabial approach has been shown to be reliable with good functional and aesthetic outcome. As the nasolabial folds become increasingly prominent with age they are often used to conceal scars in this region, but they may be less useful in younger patients where the fold is not fully developed. The final cosmetic result is not only dictated by the surgical approach and resultant scarring, but also by the underlying structural support on which to reconstruct the absent maxilla.

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