Available online at www.sciencedirect.com
ScienceDirect
British Journal of Oral and Maxillofacial Surgery 49 (2011) 442–446
BRITISH Journal of Oral and Maxillofacial Surgery
www.bjoms.com

Transconjunctival incision for total maxillectomy—an alternative for subciliary incision

Amit Goyal [a,*], Isha Tyagi [a], Shilpa Jain [b], Rajan Syal [a], Alok Pratap Singh [c], Rajeev Kapila [a]

[a] *Neuro-otology Unit, Department of Neuro-surgery, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Raibareily Road, Lucknow (UP) – 226 014, India*
[b] *Department of Anaesthesiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Raibareily Road, Lucknow (UP) – 226 014, India*
[c] *Neuro-ophthalmology Unit, Department of Neuro-surgery, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Raibareily Road, Lucknow (UP) – 226 014, India*

Accepted 4 July 2010
Available online 31 July 2010

Abstract

A subciliary incision may be associated with various complications of the lower eyelid when it is used during a total maxillectomy. The use of the transconjunctival incision instead is an alternative in suitable patients. The records of 17 patients were reviewed in whom a transconjunctival incision was used during total maxillectomy. These included 13 in whom the Weber–Ferguson incision was used, and 4 who had a sublabial incision. There was mild conjunctival oedema in all the cases during the immediate postoperative period but it did not last for more than two days. Four patients had mild to moderate oedema of the lid that resolved within two days. One had mild ectropion with transient epiphora, which was caused by early removal of the medial canthal sutures. We found the approach to be cosmetically acceptable as it avoids a scar in the subciliary region. The transconjunctival incision can be used in place of the subciliary incision for lateral exposure during total maxillectomy. There are few complications associated with the lower lid, and it has good cosmetic results; if it is combined with a sublabial incision in suitable patients, the maxillectomy is virtually scar-free.

Keywords: Maxillectomy; Weber–Ferguson incision; Subciliary incision; Conjunctiva; Lid

Introduction

The Weber–Ferguson incision has been used routinely for more than half a century for good exposure of the maxilla during total maxillectomy. It was originally described by Gensoul in 1827, so has withstood the test of time. It has two parts: a vertical one that extends from the medial canthus to the upper lip curving round the ala, and a horizontal one that extends laterally from the medial canthus to the zygoma. The horizontal limb of the incision requires a subciliary incision on the lower lid, and is usually associated with certain complications. If the incision is placed too close to the margin of the lid the chance of ectropion and epiphora increases; if the incision is too far from the margin of the lid there will be an ugly scar, depression, and massive oedema as a result of impaired lymphatic drainage. It also requires dissection of the delicate skin of the lower lid from the orbicularis oculi muscle, which may cause damage to skin, or muscle, or both. Various attempts have been made to reduce these complications during maxillectomy.[1,2]

We could find no published article that mentioned or discussed the transconjunctival incision for this purpose, though

* Corresponding author at: Department of E.N.T., North Eastern Indira Gandhi Regional Institute of Health & Medical Sciences (NEIGRIHMS), Mawdiangdiang, Shillong (Meghalaya) – 793 018, India.
Tel.: +91 94367 66200/364 2538055/107; fax: +91 364 2538107/003.
E-mail address: meetugoyal@yahoo.com (A. Goyal).

0266-4356/$ – see front matter
doi:10.1016/j.bjoms.2010.07.002

it has been used during various other maxillofacial and orbital operations.[3–5]

We present our experience of 17 total maxillectomies during which we used a transconjunctival instead of a subciliary incision, together with the vertical limb of the Weber–Ferguson incision or a sublabial incision.

Surgical technique, complications, advantages, and disadvantages were recorded.

Patients and methods

We reviewed the case records of 17 patients who had had total maxillectomies through a transconjunctival incision at our hospital. Most of the cases were operated on by the senior surgeon, with a few cases done by junior surgeons under supervision. Those included were the ones that were done through either a vertical limb of Weber–Ferguson incision, together with a transconjunctival or sublabial incision, combined with a transconjunctival incision to expose the inferior orbital rim and zygoma. Only the total maxillectomies were included. Isolated involvement of the orbital floor or zygoma by the tumour was not a contraindication for this incision.

We did not use a transconjunctival incision for maxillectomy if: orbital exenteration or any other associated procedures were done; there was ethmoid or intracranial extension by the tumour; the patient had preoperatively reduced vision, or dry eyes, or epiphora; the patient had dacrocystitis, conjunctivitis, or conditions of the margin of the lid such as stye or blepharitis; if there was any deformity of the eye; if the conjunctiva, globe, or periorbital lid were affected by the tumour; or if it was the only serving eye.

Preoperatively, informed consent was taken from each patient for the use of the transconjunctival incision. Postoperatively patients were followed up at regular intervals and their ophthalmic and oncological states were recorded.

Surgical technique

Relevant anatomy

Conjunctiva covers the globe in the form of bulbar conjunctiva, then turns above and below to form palpebral conjunctiva on the lids beyond the fornices, and continues over the inner surface of the lids up to their free margins. There are palpabral ligaments medially and laterally. At the medial end there are lacrimal puncta on both the lids from which canaliculi run medially and join to form the common canaliculus. This goes medially and deeper to drain into the lacrimal sac that lies in the lacrimal fossa.

Technique

Adrenaline diluted in normal saline (1:200,000) is injected into the subconjuctival layer of the lower fornix. The medial palpebral ligament is felt with the index finger (like a thick cord just medial and deep to the medial canthus). The lower lid is retracted to expose the lower fornix taking care to cover the cornea with the help of the upper lid. The lower lacrimal puncta are therefore exposed, and after palpation of the medial palpebral ligament, the upper end of the vertical limb of Weber–Ferguson incision is curved laterally below the medial palpebral ligament. Care is taken to avoid acute sharp angulation in the incision. The lower canaliculus is cut 2 mm away from the puncta to avoid injury to the common canaliculus (Fig. 1). Now with the help of long tissue cutting scissors, the conjunctiva is incised from its medial to its lateral end. Laterally again we remain below the lateral palpebral ligament and, if further lateral exposure is needed, we extend the incision into the skin over the orbital rim and laterally about 2 cm in a zig-zag fashion. Then the posterior margin of the conjunctival incision is sutured temporarily to the margin of the upper eyelid to protect the cornea. The lacrimal sac does not usually get in the way as with a subciliary incision.

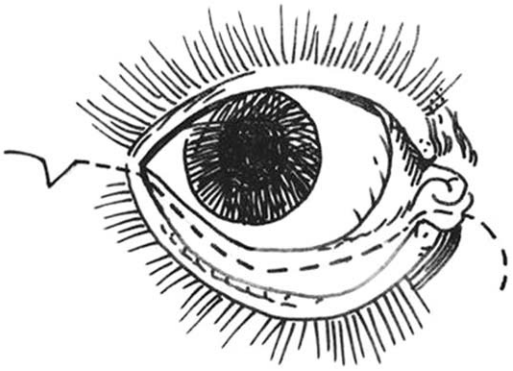

Fig. 1. Transconjunctival incision with canthal incisions for the right side (shown by the dashed line).

The incision is now deepened deep to the tarsal plate in the subcutaneous plane to expose the infraorbital rim. The cheek flap is raised to expose the infraorbital rim and the anterolateral surface of the maxilla; it is then retracted laterally, taking the lower lid with it. The remaining maxillectomy is completed in the usual fashion, and the orbital floor is managed in the same way as with a classic Weber–Ferguson incision depending on the requirements of the individual case. We did not find any difference from the usual Weber–Ferguson approach in terms of exposure of the tumour or management of the orbital floor. In the end, the cheek flap is replaced, and after the sutured conjunctiva has been released from the upper lid it is sutured with 5/0 or 6/0 polyglactin 910 (Vicryl); knots are buried in the subconjunctival plane and not on the conjunctival side. Two sutures are generally sufficient in the lower conjunctival sac.

Care is taken to align the margin of the lower lid properly with that of the upper lid. The wound is closed in layers. The skin sutures are removed on the 7th postoperative day except for the canthal stitches, which are removed on the 12th postoperative day. The upper lacrimal puncta were syringed after one month and again after six months to confirm the patency of the lacrimal drainage system.