

The temporalis muscle plus glabellar flap: handy local flaps for orbital repair after exenteration

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Summary

Primary tissue coverage of the orbit is desirable after orbital exenteration. This apart from reducing morbidity, is cost effective. Two patients who had immediate local flap reconstruction with temporalis muscle and glabellar skin, after major orbital resection are presented. The advantages of flap reconstruction over skin grafting are discussed.

Key words: *Local flap reconstruction, Temporalis muscle, Glabellar flap, Exenteration.*

Résumé

L'occlusion primaire du tissu orbite est souhaitable après exenteration orbitaire Ceci apart de reduire la morbidité est rentable. Deux malades qui ont immediate lambeau local reconstruction avec muscle temporal et la peau glabelle après une majeure résection orbitaire sont presenté. Les avantages de reconstruction lambeau sur le greffe epidermique ont discuté.

Introduction

Most patients with orbitoocular tumour seen in this environment present with advanced disease. This is often with total destruction of the globe that necessitates subtotal or total exenteration. Conventionally, following removal of orbital contents, the bony socket is allowed to granulate spontaneously. Alternatively, a split skin graft may be employed to line the cavity since the orbital bones are known to, take grafts well.

The residual deformity may be covered with a black patch, occluder, or external prosthesis which may be attached to the patient's glasses. Such external prosthesis are not available locally and are therefore expensive.

Primary tissue orbital coverage is desirable after orbital exenteration when there is no known residual tumour or metastasis. Since this heals fast, morbidity is reduced. We present two patients with extensive orbital tumour one of who had subtotal orbital exenteration and the other, wide resection of a recurrence after exenteration.

Case 1

Mrs. E.A. aged 65 years, University College

Hospital number 882628 presented with a history of a progressive lesion of the left eye. This was clinically diagnosed as squamous cell carcinoma of the eyelid. She had a wide resection and exenteration of the left orbit after which through a T incision, her left temporalis muscle, as well as a glabellar transposition flap were transferred on their pedicles to cover the orbital defect. A split skin graft from



Fig. 1 Case 2 Preoperational patient with recurrent adenocarcinoma of lacrimal gland



Fig. 2 Case 2 Post-operational. Right orbital resurfacing with a temporalis muscle (lined by split skin graft) and glabellar flaps

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the thigh was applied over the muscle and also to cover the glabellar flap donor site. The temporal fossa was drained for 48 hours.

Case 2

Mr. A.O. aged 45 years, University College Hospital number 899410 was referred from radiotherapy with a histologically proven recurrent night lacrimal gland adenocarcinoma. He had a radical excision after which an ipsilateral temporalis muscle as well as sliding glabella flap were used to cover the orbit. The muscle was split skin grafted using skin from his thigh. The orbital wound healed after 10 days, the graft take at first dressing being 100%.

Discussion

Split skin grafting of the orbital cavity¹ is indicated when the periosteum remains intact after excision. When the periosteum is removed at excision of tumour, decortication of the orbital wall may be required to ensure vascularity of the recipient bed for graft survival. Such a graft will need to be secured on the bed to enhance contact and reduce chance of haematoma. The resultant skin-lined socket may accommodate a globular prosthesis whose size may require adjustments as the cavity contracts.

This method of skin grafting of the orbit has the advantage of leaving the site open for inspection for recurrence. However, the patient may find the death's head appearance of the grafted socket repulsive and may be reluctant to touch it.

Alternatively, the orbit may be partly filled and covered with a temporalis muscle flap². Since this muscle takes its major supply from the terminal branch of internal maxillary artery which enters close to the insertion of the muscle, it can be lifted off its origin at the temporal crest, dissected off the temporal fossa and transposed anteriorly to cover the orbit. In most cases however, this muscle does not completely cover the orbital cavity.

To augment coverage from the medial side, and sliding glabella or forehead flap may be elevated. Large flaps may be obtained from the glabella/forehead area which can permit direct closure of the flap donor site. If the laxity in this donor area which has been compromised by radical excision, a split skin graft may be utilized in closing the donor defect as in Case 1.

The temporal donor site exhibits a depression postoperatively. This depression may be reduced by selectively transferring superficial temporal fascia on its branch from superficial temporal artery. Instead of using superficial temporal fascia, the investing fascia of temporalis (or deep temporal fascia) based on the middle temporal artery, branch of the superficial temporal may be transferred.

A study of 22 patients who had orbital reconstruction³ concluded that the transfer of this superficial temporal fascia was between temporalis muscle, superficial temporal (temporoparietal) fascia, and latissimus dorsi musculocutaneous free flap.

Primary tissue coverage of the orbit after exenteration is an uncommon procedure in this environment. Following removal of the orbital contents the bony socket is usually allowed to spontaneously granulate and epithelize. However joint management of patients by ophthalmologists and plastic surgeons affords a cosmetically acceptable option of orbital repair with skin and muscle flap.

Flaps have the capacity to withstand a greater dose of radiation than skin grafts. When applied therefore, subsequent radiotherapy will be enhanced. However, they have the disadvantage of a longer operating time and of masking an early recurrence⁴.

These repaired sites can be camouflaged with an orbital plate prosthesis fashioned to blend with the patient's complexion.

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