Journal of Plastic, Reconstructive & Aesthetic Surgery (2014) 67, 906—909

JPRAS
An International Journal of Surgical Reconstruction
www.JPRASurg.com

The lateral canthus web and its surgical management

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Received 20 January 2014; accepted 24 March 2014

KEYWORDS
Lateral canthus;
Periorbital reconstruction;
Periosteal flaps;
Visual field

Background: The lateral canthus is structurally important for normal eyelid contour and for reconstruction of the periorbital region. An abnormal lateral canthus contour has significant implications regarding lateral visual field and affects periocular cosmesis.
Purposes: To describe of a series of patients with dehiscence of the lateral canthus and the surgical approach of treatment.
Methods: Four cases with primary lateral canthal web that were seen by the same surgeon between 2005 and 2012. The average age was 69.7 years, (range 52—81 years), one male and three females. Primary complaints were lateral visual field constriction, tired eyes, and abnormal eyelids. In 3 cases, reconstruction of the lateral canthus was performed using periosteal flaps.
Conclusions: Reconstruction of the lateral canthus with periosteal flaps yielded a satisfactory result in cases of lateral canthus web. Additional cases would enhance our understanding of this pathology.

Introduction

The lateral canthal (LC) tendon has received increasing attention in recent years, as it is used for support in various types of lower lid blepharoplasty. The anatomic details of this region are particularly pertinent to periorbital reconstruction following eyelid tumor excision, for the repair of ectropion, entropion, and rejuvenation using a lateral rhytidectomy approach.[1]

Laxity of the lower lid due to dehiscence of the superficial tissue from the deep attachments to the periosteum and soft tissue stretching is common. The cases presented here highlight a rare subgroup of primary LC maldevelopment and abnormal lateral contour, with no previous surgery or trauma and pathology of the lateral rim attachments or to the lower eyelid involutional changes. A search on PubMed failed to retrieve any papers related to this subject.

Material and methods

Four patients with dehiscence of the LC (one male and three females) were examined by the same surgeon

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http://dx.doi.org/10.1016/j.bjps.2014.03.030

between 2005 and 2012. Their average age was 69.7 years (range 52—81 years). Reconstruction by LC periosteal flap was performed in three cases. The forth patient refused surgery.

The surgical repair was performed by upper and lower lateral periosteal flap to reconstruct the posterior lamella of the upper and the lower eyelid, which was further combined with the tarso-conjunctival and temporal advancement flaps. A periosteal flap was created by lateral canthotomy with straight scissors and an inferior cantholysis by incising the inferior crus of the LC tendon from the lateral orbital rim. The eyelid was separated horizontally at the gray line into anterior and posterior lamellae, and tarso-conjunctival temporal advancement flaps were prepared on the upper and lower eyelids. The mucosa along the superior and internal border of the strip was excised. The orbital rim was exposed, and the required periosteal flap was measured and marked. The periosteum was cut using a No. 15 Bard-Parker blade and released from the underlying bone by a Freer periosteal elevator. The edges of the periosteal flaps and the free tarso-conjunctival temporal advancement flaps were sutured by 5/0 polyglactin 910 (vicryl). The subcutaneous level was sutured with 5/0 vicryl, and the skin was sutured with 6/0 vicryl. (Figures 1 and 2). The study was approved by the institutional review board.

Report of cases

Case 1

An 81-year-old woman presented with a complaint of decreased lateral peripheral visual fields, bilaterally. There was no history of inflammation or trauma to the eyelids.

On examination, the tarsal plate ended about 10 mm medial to the canthus in the upper and lower lids. The LC was located far medially at the lateral limbus. The remaining tissue was reddened, avascular, and fibrotic, and there was rounding of the LC corner with tissue connecting the upper to the lower lid (Figure 2). She underwent reconstruction of both LCs by lateral periosteal flaps.

Case 2

A 52-year-old woman presented to the clinic with complaints of reddened and irregular edge of the lateral eyelid. There was no history of inflammation or trauma to the eyelids.

On examination, the tarsal plate ended about 7 mm medial to the canthus in the upper lid and 9 mm medial to the canthus in the lower lid. The remaining tissue was reddened and fibrotic with tissue connecting the upper to the lower lid, with rounding of the LC corner (Figure 3). She underwent reconstruction of both LCs by lateral periosteal flaps (Figure 4).

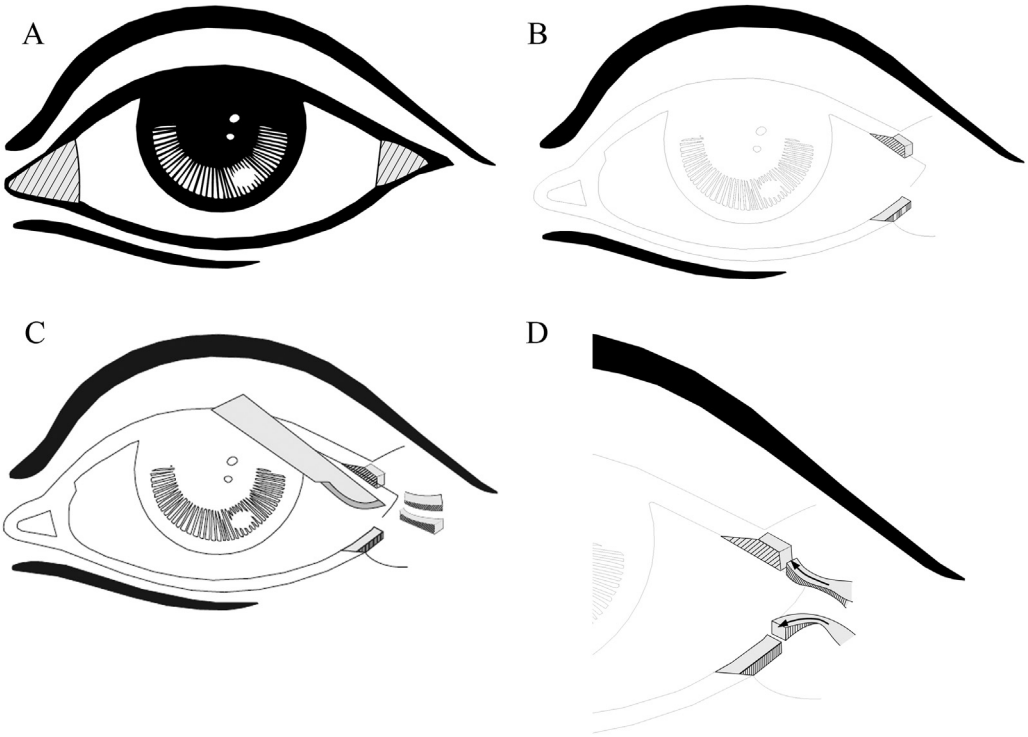

Figure 1 Diagram of the periosteal flap. A: The left eye and the lateral canthal web. B: Tarso-conjunctival temporal advancement flaps: Lateral canthotomy and cantholysis are performed by incising the inferior crus of the LC tendon from the lateral orbital rim. The eyelid is separated horizontally at the gray line into anterior and posterior lamellae, and tarso-conjunctival temporal advancement flaps were prepared on the upper and lower eyelids. C: The orbital rim is exposed, and the required periosteal flap is measured and marked. The periosteum was cut using a No. 15 Bard-Parker blade and released from the underlying bone by a Freer periosteal elevator. D: The edges of the periosteal flaps and the free tarso-conjunctival temporal advancement flaps are sutured by 5/0 polyglactin 910 (vicryl).