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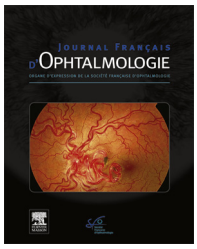

ORIGINAL ARTICLE

Repair of orbital implant exposure using Müller's muscle flap

Intérêt des lambeaux de muscle de Müller dans le traitement chirurgical des expositions de bille des cavités anophtalmes

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KEYWORDS
Socket;
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Summary
Introduction. — The purpose of this study is to analyse the 2-stage Müller's muscle flap technique for the treatment of orbital implant exposure and its results.
Materials and methods. — This retrospective study reviewed all patients undergoing surgery using this technique in our university hospital over a 14-year period (1999—2012) in terms of success (no re-exposure of the implant) or failure.
Results. — Nineteen patients were managed using this 2-stage procedure. Orbital implant exposure occurred 94.4 months (2—240) after implantation. The success rate was 68.4% (13/19) and failure rate 31.6% (6/19). Risk factors for exposure were enucleation for melanoma followed by radiation therapy, acrylic implant, and early exposure probably due to excessive suture tension.
Discussion. — Implant exposure is the most common complication after evisceration, enucleation or socket surgery. Several techniques to repair exposures have been described. Two-stage Müller's muscle flap is an interesting option, especially for patients presenting defects larger than 4 mm^2 and without previous radiation therapy treatment.
Conclusion. — The two-stage Müller's muscle flap procedure allows for an autologous vascularized pedicle flap from the ipsilateral upper eyelid. It is a reliable technique with a success rate of 68% in our study.
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MOTS CLÉS
Cavité ;
Bille ;
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Muscle de Müller ;
Lambeau

Résumé
Introduction. — L'objectif de cette étude est d'analyser la technique de réparation chirurgicale des expositions de bille orbitaire par un lambeau de muscle de Müller, en deux temps.
Patients et méthode. — Dans cette étude rétrospective, nous avons analysé les critères de réussite ou d'échec de tous les patients opérés selon cette technique dans notre hôpital universitaire depuis 14 ans (1999—2012).
Résultats. — Dix-neuf patients ont été opérés selon cette technique. L'exposition de la bille est survenue en moyenne 94,4 mois après l'implantation (2 à 240 mois). Le taux de succès était de 68,4 % (13/19) et le taux d'échec de 31,6 % (6/19). Des facteurs de risque d'exposition ont été mis en évidence : énucléation pour mélanome suivi de radiothérapie (2 cas), bille en acrylique (1 cas) et une exposition précoce probablement due à des sutures sous tension (1 cas).
Discussion. — L'exposition de bille est la complication la plus fréquente après éviscération, énucléation ou chirurgie de cavité. De nombreuses techniques de réparation ont été décrites. La technique du lambeau de muscle de Müller en deux temps est une alternative intéressante, en particulier pour des défects de plus de 4 mm^2 et en l'absence de radiothérapie préalable.
Conclusion. — La technique du lambeau de muscle de Müller en deux temps permet un traitement local de l'exposition de bille grâce à un lambeau autologue pédiculé provenant de la paupière supérieure homolatérale. C'est une technique fiable avec un taux de succès de plus de 68 % dans notre étude.
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Introduction

Implant exposure is one of the most frequent complications after evisceration, enucleation or secondary socket reconstruction when implants are used. Hydroxyapatite orbital implant is reported to have lower rates of complications than the other devices of orbital implants: 0 to 22% of exposures [1—3]. Exposed non-porous implants often extrude. Exposed porous implants have been reported to spontaneously heal but may require a surgical treatment for persistent and large exposures. Risks factors of exposure include superficial placement of the implant, lack of suture, too tight sutures of the Tenon fascia and conjunctiva, infection, antimetabolite use or radiation therapy [4].

In this study, we report our experience with a two-stage technique of Müller muscle and conjunctival flap for the treatment of orbital implant exposure defects, as first described by Rosen in 1998 [5]. Another quite similar technique was described by Martin in 1999 [6]. Potential risk factors of failure were also analysed.

Materials and methods

In this retrospective study, nineteen patients with acquired anophthalmic socket presenting with an exposure of the orbital implant were included. They were operated on between March 1999 and September 2012. Operations were carried out by three oculoplastic surgeons. A two-stage surgical technique was used.

The first stage was performed under general anesthesia. The margins of the conjunctiva and Tenon's capsule around the exposed area were freshened and lifted, in order to prepare a healthy and vascularized recipient bed (Fig. 1).

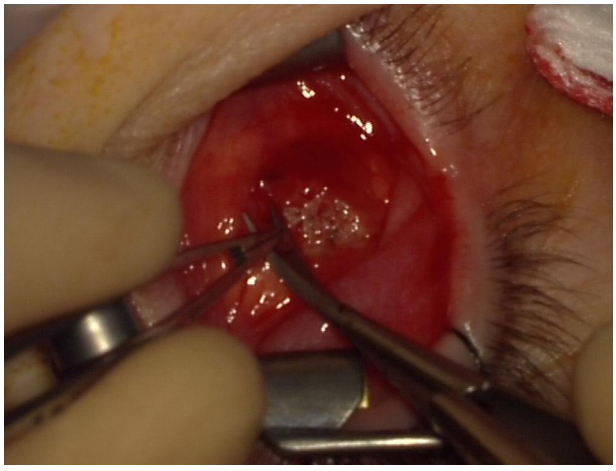

Figure 1. Lift of the conjunctival margins.

Then the implant was drilled or burred down on the exposed area with a continuous irrigation, in order to wash out necrotic tissues and to make the implant surface less convex (Fig. 2). Usually the exposed implant was vascularized till the depth of the sphere. The total area of exposed implant was measured to determine the Müller muscle flap's size. Two 3.0 silk traction sutures were placed through the central upper eyelid margin and the superior eyelid was everted over a Desmarres retractor. The upper tarsal border was identified. The required area of conjunctiva and Müller muscle to fill the defect was measured and marked. Using Vannas scissors and blunt dissection, the conjunctival and Müller muscle flap was dissected off the upper tarsal border. During Müller muscle dissection, care was taken to preserve the levator aponeurosis (Fig. 3). Hemostasis was obtained with

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