Management of Senile Ptosis with Levator Muscle Resection Using the Putterman Clamp

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Summary: Putterman clamp, a muscle clamp, is commonly used in conjunctival müllerectomies. We report 3 cases of senile ptosis repaired with levator muscle resection using the Putterman clamp. The redundant levator aponeurosis was removed with electrocautery after clamping with the Putterman clamp. The levator muscle was refixed to the tarsus with three 4-0 Vicryl stitches after adjusting the height of the eyelid fissure. No intraoperative difficulties were encountered. Ecchymosis and edema were limited in the immediate postoperative period. No complications were noted during the follow-up. The benefits of using the Putterman clamp in levator muscle resection are illustrated in these cases. (Plast Reconstr Surg Glob Open 2016;4:e726; doi: 10.1097/GOX.0000000000000720; Published online 1 June 2016.)

The Putterman clamp is a muscle clamp frequently used for conjunctival müllerectomies in patients with mild ptosis. In patients with moderate ptosis and levator function more than 6mm, levator muscle resection is the surgical treatment of choice and is carried out by dissecting the aponeurosis and the levator muscle from the tarsus and Müller’s muscle. However, this surgery is associated with severe postoperative swelling after extensive surgical exploration. In this report, we describe 3 cases of senile ptosis treated with levator muscle resection using the Putterman clamp. This study received Institutional Review Board approval from the Ethics Committee at the Chang Gung Memorial Hospital, Taiwan.

CASE 1
An 87-year-old woman had senile ptosis. The preoperative eyelid fissures were 5/6 mm and margin reflex distance 1 (MRD-1) of 0/1 mm in the right and left eyes, respectively (Fig. 1). The preoperative evaluation of the levator muscle function was 10 mm in both eyes by using the method described by Berke, which was graded as good levator muscle function. The patient underwent levator muscle resection using the Putterman clamp (Fig. 2). Redundant skin and eyelid fat pads were resected. Limited ecchymosis and swelling of the eyelids were noted in the first week after the surgery (Fig. 3A). The eyelid fissure had improved to 7 mm and the MRD-1 to 2 mm in both eyes 3 months after the surgery (Fig. 3B).

CASE 2
A 61-year-old woman consulted for a blepharoplasty. Dermatochalasis and mild ptosis were noted preoperatively, together with an eyelid fissure of 6 mm and MRD-1 of 1 mm in both eyes. The levator muscle function was 13 mm bilaterally. Postoperatively, mild ecchymosis and edema of the eyelids were noted in the first week after the surgery (Fig. 3A). The eyelid fissure improved to 7.0/7.5 mm and the MRD-1 to 2.5/3.0 mm in the right and left eyes, respectively, 1 month after the surgery.

CASE 3
A 73-year-old woman with senile ptosis, more severe in the left eye, and asymmetrical eyelid fissures with supratarsal depression in the right eye. The preoperative eyelid fissure was 5.5/5.0 mm and the MRD-
The levator muscle function was 10 mm in both eyes. A week after surgery, there was minimal eyelid swelling. The eyelid fissure improved to 7.0/6.5 mm and the MRD-1 to 2.0/1.5 mm in the right and left eyes, respectively. An acceptable appearance was noted 2 months after the surgery. The eyelid fissure improved to 8.0 mm and the MRD-1 to 3.0 mm in both eyes.

DISCUSSION

The use of a clamp for the levator muscle during resection of the levator palpebrae was first reported in 1952. Berke6 reported the use of a ptosis clamp for clamping the levator muscle during the surgery. The clamp is still available nowadays as the Berke ptosis clamp. Keyhani7 used a ptosis clamp during anterior levator resection for congenital ptosis in 2007. The Putterman ptosis clamp has become popular in conjunctival müllerectomies in recent years. As a muscle clamp, we noted that its application in levator muscle resection is comparable with that in a müllerectomy.

These preliminary case reports describe the surgical technique and initial results of an approach to the treatment of ptosis. The surgical use of the Putterman ptosis clamp modifies levator muscle resection. Bleeding and swelling, both during and after the surgery, were decreased in comparison with conventional levator muscle resection techniques as judged by the surgeon. This could be related to the decreased time of tissue dissection and the extent of tissue trauma.

Theoretically, injury to the lacrimal gland might be of concern with the use of the Putterman ptosis clamp. However, by sparing the upper lateral area from inclusion in the clamp, we have not encountered this problem.

Levator muscle resection using the Putterman clamp is a good surgical method for an experienced surgeon. Recently, a prospective study held by Zigiotti et al8 reported the use of the Putterman clamp in elevator muscle anterior resection with a 92% success rate. They placed a continuous suture at the base of the clamp before removing the muscle. Our method is different as to control the height of eyelid fissure, we leave a 1-mm redundant central aponeurotic tissue. This allows the surgeon to adjust precisely the height during fixation of the levator muscle to the tarsus. Therefore, an ideal postoperative appearance could be achieved.

This modified levator muscle resection technique can produce a satisfactory postoperative appearance in patients with senile ptosis and is a useful adjunct in the armamentarium of treatment options.
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