Orbicularis Sling as an Adjuvant to Improve the Aesthetic Outcome of Blepharoplasty

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ABSTRACT

Blepharoplasty is one of the commonly performed aesthetic facial procedures with a marked effect on countering facial aging. However, lower blepharoplasty can be jeopardized by unfavorable aesthetic complications mainly sclera like show and lower eyelid ectropion. In this study that was carried out at Kasr alainy hospital on 30 patients, the effect of the orbicularis sling on reducing the incidence of scleral show was studied. During routine blepharoplasty, a strip of orbicularis was dissected from the skin flap and sutured to the lateral orbital wall at the level of the lateral canthus or slightly higher by two anchoring stitches to the underlying periosteum. Follow up of these cases over a period up to one year revealed the absence of scleral show in all cases with the restoration of a natural attractive sweep in the lower lid. Patient satisfaction was very high with only 2 cases of palpable knot that had to be excised after 4 months under local anesthesia with no effect on the aesthetic outcome. Orbicularis sling is a simple valuable adjunct in lower blepharoplasty that markedly reduces the incidence of scleral show.
Key words: *Blepharoplasty, Orbicularis sling, Periorbital Rejuvenation.*

INTRODUCTION

Blepharoplasty has recently become a very popular surgery for restoration of a youthful look. Surgical approaches for the cosmetic improvement of the aging periorbital region continue to evolve [1]. A combination of factors has added to improved methods that relate to a higher level of understanding of facial aging. These methods have been supported by information gained from both histologic and gross anatomy dissections as well as observations made through imaging and photography [2]. In the recent years the scope of blepharoplasty has focused on periorbital rejuvenation rather than lid beautification. More issues have been addressed during surgery like lacrimal gland herniation, brow drooping and glabellar lines [3]. Upper eyelid rejuvenation surgery may be accompanied with adjuvant procedures that are accessible through the same blepharoplasty incision like internal brow fat injection and elevation, glabellar myectomy and lacrimal gland repositioning in order to achieve the best results possible and improving the position of the brow over the supero-lateral orbital rim. Moreover the endoscopic forehead brow lift has been used to correct the brow position [4]. This work aimed at studying the effect of the orbicularis sling on reducing the incidence of scleral show after conventional blepharoplasty.

PATIENTS AND METHODS

This prospective study was conducted from January 2013 to June 2014 at Kasr Alainy hospitals, Cairo University. It included thirty patients requesting blepharoplasty.

All patients underwent preoperative evaluation in the form of history taking, thorough physical examination, routine laboratory investigations, photographic evaluation and documentation. Patients on anti-coagulation/antiplatelet therapy were instructed to stop it 2 weeks prior to operation. All patients had informed consent about the procedure, the risks and the possible complications. All patients were offered orbicularis sling as an adjuvant procedure through the lower blepharoplasty incision.

On the day of the surgery, the patient was marked in the sitting position using a waterproof skin marker. The incision line is drawn 2mm below the eyelashes, medially it stops short of the inferior punctum and laterally the incision extent is limited to just at or slightly beyond the lateral canthus directed downwards along the crow's feet.

All patients were done with the patient in supine position using either hypotensive general anesthesia or local anesthesia with sedation. The

first step entails injection of local anesthesia (lidocaine 1% + adrenaline 1:200000) in both lower lids. Subciliary incision was done 2 mm from the lid margin to stop before the punctum. Exposure of the lower pads of fat through the orbital septum and excision / redraping of the fat pads as the standard blepharoplasty procedure according to the patient condition as planned pre-operatively. We dissect a muscle flap from the skin with a width of around 3 mm and hinge it to the lateral orbital wall by 2 anchoring inverted non absorbable sutures. Then we redrape the skin with excision of any redundancy. The flap is now allowed to fall back into its normal anatomic position and its surface smoothed in an upward direction with a moist cotton-tipped applicator. Removal of excess lower lid skin and muscle follows, after creating several cuts through the skin to guide the sitting of the horizontal excision. Finally closure of the wound in layers with 5/0 monocryl and the skin with 6/0 Prolene was done. Steri-strip taping to further reduce tension on the healing lower lid is applied.

Post-operative care was extremely meticulous. Bed rest with the head elevated at least 45 degrees. Compresses using ice cold saline or ice packs for 15 minutes per hour in the first 48 hours. A combination antibiotic/steroid eye drops are used 2-3 times daily for 7 days combined with oral antibiotic and anti-inflammatory. The patient is instructed to report even minor pain which is aggressively investigated to rule out corneal abrasions or intraorbital bleeding. Sutures were removed on the seventh postoperative day.

Follow-up visits were instructed starting 48 hours after surgery, then 10 days later and every 2 months for 2 years. The outcome was assessed by preoperative photographs, and after postoperative 1, 4, and 6 weeks as well as with patient's satisfaction. All 30 patients were surveyed postoperatively for the perception of the improvement in the aesthetic outcome and were graded as follows: 1) Unsatisfied, 2) Neutral, 3) Satisfied, 4) Moderately satisfied and 5) Very satisfied.

RESULTS

Thirty patients presented with blepharochalasis. Twenty five (83.3%) of them were females, while males were 5 (16.7 %) only. The mean age of our patients was 50.7 years, with a minimum of 38 and a maximum of 70. Most of the patients had more than one complaint; however the main complaint of the patients was sagging eyelids and redundant skin. Lower blepharoplasty was done for all (100%) patients with orbicularis sling as an adjuvant procedure (figure 1, 2, 3 & 4).

Figure 1: A 55 years old female underwent upper and lower blepharoplasty with orbicularis muscle redrapping. A) Before and B) after surgery

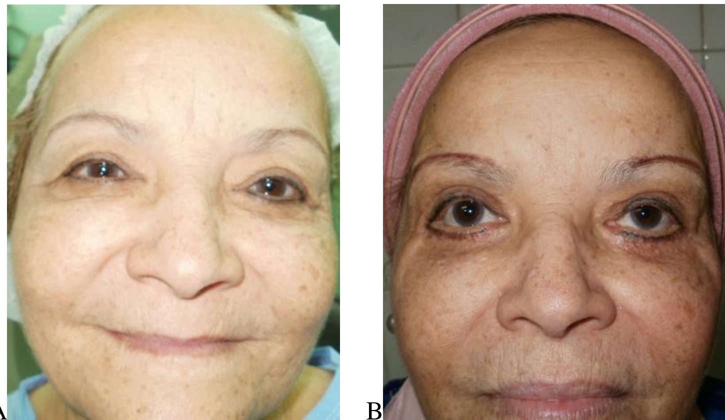

Figure 2: A 68 years old female, who underwent upper and lower blepharoplasty,with lacrimal gland suspension and orbicularis muscle redrapping. A) Before and B) after surgery

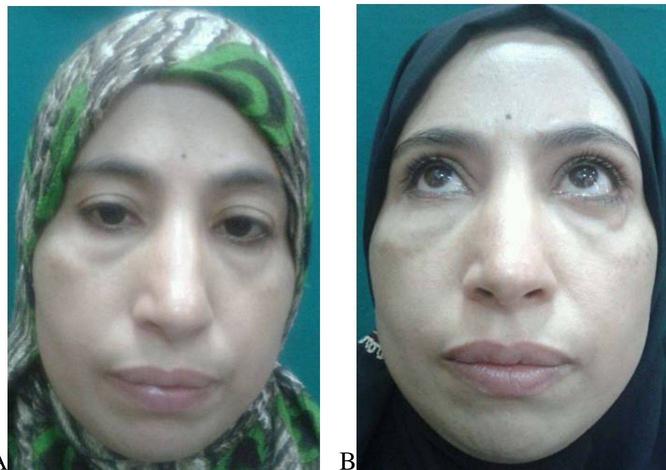

Figure 3: A 38 years female underwent upper and lower blepharoplasty with orbicularis muscle redrapping. A) Before and B) after surgery

Figure 4: A 52 years old female,who underwent upper and lower blepharoplasty with lacrimal gland suspension. A) Before and B) after surgery

Operative time ranged between 50 – 60 minutes with a mean of 55 minutes. In this study there were no major complications. Delayed disappearance of subcutaneous peticheal hemorrhage was encountered in five (16.7%) cases. One (3.3 %) case of inclusion dermoid was seen at the sites of the lower lid sutures one month after surgery and was excised under local anesthesia. Post-operative bruising occurred in 4 (13.3 %) cases. Palpable knot was recorded in 3 (10 %) cases and in one (3.3 %) case it had to be removed under local anesthesia.

Perception of the improvement in the aesthetic outcome was done for all 30 patients postoperatively and was graded. All cases were satisfied with the aesthetic outcome apart from one (3.3 %) patient which was unhappy with the outcome and redo lower blepharoplasty was done to excise excess skin. This patient was subjected to multiple laser resurfacing sessions prior to surgery.

DISCUSSION

Facial aging has a dramatic effect on changing the outlook and facial expression. The periorbital area carries a major brunt of aging with peri-orbital fat herniation, skin laxity and an overall tired and sleepy look. In extreme cases, skin laxity can have an effect on the visual field [5]. Blepharoplasty is one of the procedures that have a dramatic effect on restoring facial features. It improves eye opening, erases the tired look and gives a more youthful outlook by taking away or redrapping peri-orbital fat [1].

However, there is no surgery without complications! Perhaps, the most dreaded aesthetic complication that can irritate the plastic surgeon is the incidence of scleral show where a rim of sclera becomes visible in the lower lid [6]. The aetiology of this complication can be explained by excess fat or skin removal or by progressive fibrosis in the lower lid scar. In severe cases this may lead to cicatricial ectropion, a serious complication demanding urgent intervention to protect the eye. In an attempt to reduce the incidence of scleral show after blepharoplasty, multiple techniques evolved. Canthopexy or canthoplasty can help with redraping of the lower lid on the eye with an excellent outcome. The technique requires more dissection and is technically more demanding [7].

However, taking a sling of orbicularis muscle from the skin muscle flap of a routine lower blepharoplasty incision can have a similar, yet simpler effect. A 3 mm wide muscle flap is dissected from the skin after excising the planned excess and anchored to the lateral orbital periosteum with 2 no absorbable inverted stitches at the level of the lateral can thus or a maximum of 1 mm above it to avoid the Chinese look. The second stitch is essential to reduce tension on the first one and avoid bow stringing effect. In this study, the orbicularis sling was performed on 30 cases. Palpable stitches were noticed in the earliest cases and resorting to inverted stitches eliminated this complication. The early cases were dealt with by excision of the knots after 4 months when it was judged that fibrosis will hold the muscle flap in place. The aesthetic outcome was acceptable in all cases to the patient and when shown to an independent plastic surgeon for assessment with a gentle sweep recognized in the lower lid of all cases. There was no scleral show as compared to cases where the sling was not done. The procedure increased the operative time by no more than ten minutes and maturing it was very quick with only the site of the stitch requiring special care for symmetry.

CONCLUSION

In conclusion, the orbicularis sling is a simple adjunct to lower Blepharoplasty in cases where scleral show is suspected. It is easy to perform and does not increase the operative time. It has no serious complication and is associated with marked patient satisfaction on long term follow up.

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