

**Figure 1.** Pre-operative photos of 54 year old female who underwent upper and lower lid blepharoplasty followed by periorbital phenol-croton oil peel.



**Figure 2.** Post-operative photos of 54 year old female one month after phenol-croton oil peel and twelve months after bilateral upper and lower lid blepharoplasty.

**CONCLUSION:** Judicious use of dilute concentrations of phenol-croton oil in the periorbital region can be successfully performed with minimal to no complications. It can be applied as a stand-alone procedure, or as a complement to blepharoplasty surgery. When these techniques are combined there is significant improvement in upper and lower lid laxity, hyperpigmentation, and reduction of fine rhytids. It is a cost effective treatment with long-lasting results.

## What's New in the Treatment of Poor Levator Function with Severe Blepharoptosis

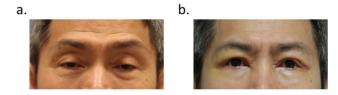
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INTRODUCTION: Frontalis suspension is a surgical procedure for patients with poor levator aponeurosis function and severe blepharoptosis. However, there are drawbacks for such operation. Conventional prognosis evaluation mostly depends on clinical observations and lacks quantitative analysis tool for assessment of eyelid muscle controlling. We examined the potential of using assessments of temporal correlation¹ and complexity² in surface electromyography (SEMG) as a quantitative description for the change of muscle controlling after operation. Accordingly, we designed a comprehensive clinical study to evaluate a new method for correcting poor levator function with severe blepharoptosis.

**MATERIALS AND METHODS:** Medical records were reviewed for 12 severe blepharoptosis patients (5 unilateral, 7 bilateral) with poor levator function receiving transconjunctival operation at Mackay Memorial Hospital in Taipei between

December 1, 2011 and December 30, 2013. Among the 12 patients, all the levator aponeurosis and levator sheath were dissected, shortened and advanced to the upper of the tarsal plate, while the orbicularis oculi muscle were left intact. Outcome measures include margin reflex distance-1, length of excised levator aponeurosis and levator sheath for ptosis correction and eyelid symmetry (Figure 1).

**RESULTS:** Complete or near-complete correction of ptosis (degree of ptosis, <1mm) was achieved in 16 eyelids (84.2%) and mild residual ptosis (degree of ptosis, 1 to 2 mm) was observed in 2 eyelids (10.5%) in postoperative follow-up after 6 months. The preoperative MRD1 ranged from -5 to 2mm with a mean of -1.4 mm while the postoperative MRD1 ranged between 2.5mm and 5.5 mm with a mean of 3.6 mm. The most common complication was under correction (21.1%) and was successfully recovered after reoperation in all four cases. Immediate post-operative Lagophthalmos was transient in all cases and were recovered to normal within 3 weeks.<sup>3</sup>



**Figure 1.** (a) The pre-operative photo of a 52-year-old men and (b) the 4-weeks post ptosis correction photo showed a significant improvement of the clinical outcome.

**CONCLUSION:** The transconjunctival incision based two-levator-tissues (levator aponeurosis and levator sheath) procedures provides significant advantages over traditional approaches in the treatment of patients of poor levator function with severe blepharoptosis. Such operation was done in a physiological superior-posterior direction and would not violet the integrity of orbicularis oculi as traditional procedures did. Thus it would encourage faster post-operative recovery and overall clinical outcome.

## REFERENCES:

- 1. Peng C-K, Buldyrev SV, Havlin S, Simons M, Stanley HE, Goldberger AL. (1994) Mosaic organization of DNA nucleotides. *Phys Rev E*. 49(2):1685-1689.
- 2. Costa M, Goldberger AL, Peng CK. (2005) Multiscale entropy analysis of biological signals. *Phys Rev E*. 71(2):021906.
- 3. Lai CS, Chang KP, Lee SS, Hsieh TY, Lai HT, Huang YH, Lai YW. (2013) The role of frontalis orbicularis oculi muscle flap for correction of blepharoptosis with poor levator function. *Ann Plast Surg.* 71: S29-S36.