Research Paper

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Trying triangle in silicon sling suspension surgery in ptosis

Medical Science

KEYWORDS : Ptosis, Silicon sling, Tringular sling, Pentagonal sling

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ABSTRACT

Aim: To compare pentagonal pattern of silicon sling suspension with triangular pattern. Methods: 37 eyelids of 31 patients with ptosis, 6 patients operated bilaterally where18 eyelids undergone pentagonal pattern and 19 eyelids with triangular pattern. Successful surgical results were judged by lid level, lid symmetry and lid contour during the follow up period of 9 months. Result: No difference in functional success, ptosis recurrence, or change in MRD I was noticed in both the groups. No patient was seen with complications like exposure keratitis, granuloma formation. 4 eyelids, 2 in each group required re-surgery during the follow up period. Conclusion: The use of triangular pattern of silicone rod frontalis suspension surgery for ptosis repair is equally effective, with few complications, easily adjustable in case of recurrence or overcorrection and better cosmesis with triangular pattern.

Introduction :
Brow suspension is the procedure of choice for severe ptosis correction in patients with poor levator function. Different patterns have been used by different surgeons but most commonly utilized technique is a pentagon.[1] Triangular pattern is not popular among oculoplasty surgeons.

Purpose :
To compare pentagonal pattern of silicon sling suspension with triangular pattern.

Design of study :
prospective, non-randomized , comparative, interventional case series

Method:
37 (n) eyelids of 31 patients with 6 patients being operated bilaterally, 18 eyelids undergone pentagonal pattern and 19 eyelids with triangular pattern

Inclusion criterias: Moderate to severe, unilataral or bilateral ptosis, poor LPS (Levator Palpebrae Superioris) function, of any etiology [i.e. Congenital, traumatic, myogenic, neurogenic etc},undergoing surgery as a primery procedure, good bell's phenomenon, single surgeon

Examination of the ptosis2 : Head posture, frontalis overaction, palpabral aperture :straight gaze,:down gaze,lid fold,MRD 1 [margin reflex distance],LPS function ,amount of ptosis [mrd-3mm],synkinetic movements,bell's phenomenon,corneal sensation,tear film status,other lid anomalies,tests for myasthenia gravis 1) ice pack test 2)neostigmine test

Clinical outcome evaluation was done at immediate post operative day and monthly till 9 months

1) MRD 1 post operatively
2) The cosmetic results are rated as Good: MRD > or = 3 mm, Fair: MRD 2 - 2.9mm, Poor: MRD< 2 mm
3) The recurrence is defined as change of results from "good" to "fair" to "poor"
4) The cosmesis was judged on the basis of eyelid height asymmetry,lateral drooping of lid, lid crease asymmetry,incomplete lid crease,forehead scarring

Surgical technique:
0.9 mm silicon rod (Aurosling) was used in all patients .

- 2 stab incisions in lid 2 mm above lid margin
- 2 brow incisions down to the level of periosteum, just above brow hairs and in line with medial and lateral canthi for pentagonal group. Such incisions were not required in triangular group
- A forehead incision 1 cm above eyebrow ,down to the periosteum, midway between the two brow incisions
- Pocket is dissected superiorly beneath the frontalis muscle in forehead incision
- The sling [silican rod] is passed through all these incisions in PENTAGONAL & TRIANGULAR method drawing the two ends of sling out through the central incision.
- The eye lid skin incisions closed with 6-o vicryl passing through orbicularis to upper skin edge and tarsus in that order re-establishing thin skin crease
- the 2 ends of silicon rod passed through the sleeve and sleeve tucked into the forehead incision, then eyelid level adjusted and ends of silicon rod cut short and the rod and sleeve was placed in to the incision and closed with 6-0 vicryl.

Statistical analysis: The two groups PENTAGONAL & TRIANGULAR were compared with respect to post operative MRD & Recurrence were noted in both the groups.

The SPSS software analysis was used.

Results
Post operative MRD: Unpaired t test; Mann Whitney test was applied. P values were not significant.
P at 3 months 0.63
P at 6 months 0.54
P at 9 months 0.58

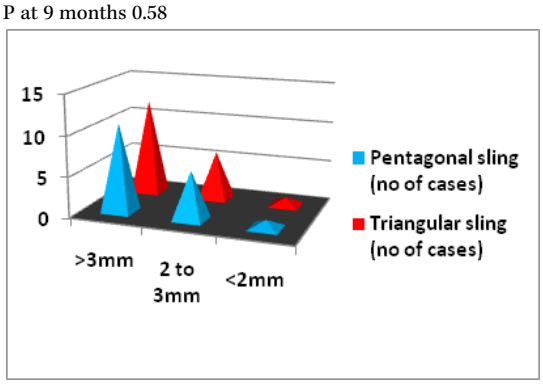

Chart No.1: Comparison of MRD in 2 groups at 3months

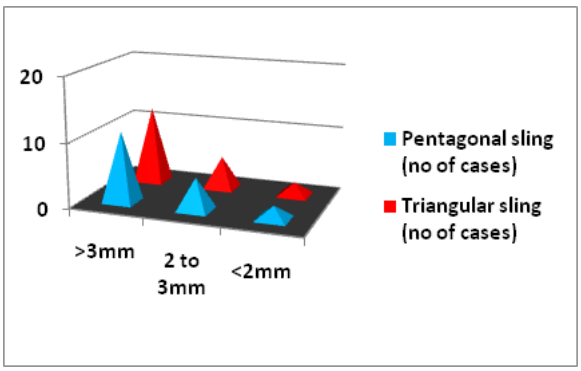

Chart No.2: Comparison of MRD in 2 groups at 6months

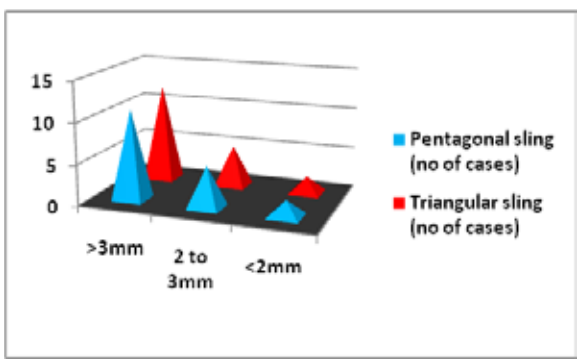

Chart No. 3: Comparison of MRD in 2 groups at 9months

Recurrence: There were 2 cases of recurrence 1 in each group. Chi square test was applied and it was Non-Significant.

No difference in functional success, ptosis recurrence, or change in MRD I was noticed in both the groups.

There was no difference with regard to cosmesis like eyelid height asymmetry, lateral drooping of lid, lid crease asymmetry, incomplete lid crease.

No patient was seen with complications like exposure keratitis, granuloma formation.

Discussion

Normally, upper lid covers about upper one-sixth of the cornea. Abnormal drooping of the upper eyelid is called ptosis2.

Surgical approaches9: There are various suture designs; a single triangle, double triangle, single rhomboid (Friedenwald-Guyton procedure), double rhomboid (Iliff procedure), double trapezoid (Wright procedure), single pentagon (Fox procedure), and double pentagon configurations (Crawford procedure).3,4,5

Postoperative sling slippage with early recurrence of ptosis may sometimes occur after ptosis repair, particularly when silicone or monofilament sutures are used.7 A wide skin incision with anchoring of the sling material to the tarsus is effective in preventing this complication. This procedure is also useful in creating an eyelid crease which is usually absent in children with congenital ptosis.8

Conclusion:

The use of triangular pattern of silicone rod frontalis suspension surgery for ptosis repair is equally effective, with few complications and easily adjustable in case of recurrence or overcorrection. Less scarring on fore head with notably less prominence on forehead gives better cosmesis with triangular pattern

Limitations

Small sample size & short follow up period were the main limitations of our study. Still Triangular pattern is worth to give a try!

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