

# Comparison of Single Rhomboid vs Double Rhomboid Silicon Band Frontalis Suspension in Terms of Upper Lid Contour in Ptosis Surgery

MUHAMMAD ZAFAR ULLAH, MAJID HUSSAIN, M AJMAL CHAUDARY, MUHAMMAD IMRAN

## ABSTRACT

**Aim:** To compare the effect of single rhomboid and double rhomboid frontalis suspension using 2 mm silicon band on upper lid contour in ptosis surgery.

**Methods:** This randomized control study was conducted at the Department of Ophthalmology, Nishtar Hospital, Multan from March 2011 to March 2014. A total of 40 patients with unilateral ptosis were included in the study. Patients were divided into two groups A and B. Patients of group-A were operated by single rhomboid method and group-B were operated by double rhomboid method.

**Results:** Overall 39 patients came for follow up. 19 patients in group-A came for follow up while one patient lost to follow, however all 20 patients of group-B came for follow up. 12 patients out of 19 in group-A showed lid contour symmetry while 3 out of 20 in group-B showed upper lid asymmetry.

**Conclusion:** In this study we found that single rhomboid ptosis surgery has 4.2 times more relative risk for asymmetry of upper lid contour than double rhomboid silicon band frontalis suspension.

**Keywords:** Single rhomboid, ptosis, symmetry.

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## INTRODUCTION

Ptosis surgery is one of the most common procedures in oculoplastic, the aim of which is to clear the visual axis to reduce the chance of amblyopia in children and to improve the superior visual field in adults. Secondary and most important goal of ptosis surgery in adult especially in females is restoration of cosmetics regarding upper lid crease, symmetry and lid margin contour<sup>1</sup>. Different surgical procedures and material has been used for this procedure. Choice of surgical procedure depends upon the function of levator muscles and severity of ptosis. Poor levator function i.e., < 4 mm and severe ptosis i.e., > 4 mm are being treated by classical approach to sling upper lid with frontalis muscles. Other options for less severe ptosis having better levator function include levator resection and conjunctival muller resection<sup>2</sup>.

Material used for this slinging procedure may be autogenous material or exogenous one. Autogenous materials are preserved fascia lata, fresh fascia lata<sup>3</sup>, preserved temporalis and fresh temporalis<sup>4</sup>. Exogenous materials used for this surgery are silicon band<sup>5, 6</sup> and mersilene mesh etc<sup>7, 8, 9, 10, 11</sup>. It has been found that exogenous material has better outcome in terms of stability and placement than autogenous ones<sup>12, 13</sup>. It also prevents from second surgical trauma. It has also been found that silicon band has more tensile strength and is good option than mersilene mesh<sup>14</sup>.

## MATERIAL AND METHODS

This randomized control study was conducted at the Department of Ophthalmology, Nishtar Hospital, Multan from March 2011 to March 2014. A total of 40 patients with unilateral ptosis were included in the study. Patients were divided into two groups A and B. Patients of group-A were operated by single rhomboid method and group-B were operated by double rhomboid method. In Group-A two 3 mm incisions were made above the brow, parallel to medial and lateral canthus. Silicon band was passed from lateral to medial side, two more 3 mm incision were made on upper lid 3 mm from lid margin (10 mm apart from centre of upper lid on either side). Silicon band was passed from upper medial to lower then to lateral lid incision then to upper brow incision after that it sleeved with other end and buried deeper in soft tissue. In group-B three 3 mm incisions were made above the brow, two parallel to medial and lateral canthus and 3<sup>rd</sup> in the centre of two. Similarly, 3 mm incisions were made on the upper lid, 3 mm from the margin. One incision was made in the centre and remaining two on either sides 5 mm apart from the central. Two silicon bands were used. One from upper lateral and incision to central then to lower central then to lower lateral then back to upper lateral and then was sleeved after proper adjustment. After that it was buried in soft tissue with re-adjustable stitch underneath. Second silicon band was passed from upper medial incision to lower medial then to lower central then to upper central then back to upper medial then was sleeved and buried in soft tissue.

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Department of Ophthalmology, Nishtar Medical College, Multan  
Correspondence to Dr Muhammad Zafar Ullah, 19- Nishtar Estate near  
MINAR, Multan. Cell: 0333-6100722

## RESULTS

Both groups were followed up after 6 months, carefully and any sort of lid notching (medial, central, lateral) or relative straightening of lid contour as compared to other eye was considered abnormal and included in group of lid flattening. In group-A, 19 patients came for follow up; in 63% (12/19) some degree of lid contour asymmetry was observed. Out of these 12 patients, 2 patients showed lateral angulations, 4 patients showed medial angulations and 6 patients showed flattening of lid margin contour as compared to other eye. In group-B, 20 patients came for follow up, only 15% of patients (3/20) showed any lid contour abnormality. All of 3 got mild degree of central notching as compared to normal. All the patients definitely improved cosmetically as there was elevation of the lid in all patients. However the contour of lid margin was definitely better in group B.

Table 1: Lid Deformity after surgery

Group	Lid abnormality	No lid abnormality	Total No. followed
A	12	07	18
B	03	17	20

Table-2: Percentage of Lid deformity

Group	n	%age
A	12	63
B	03	15

## DISCUSSION

The type of ptosis surgery is related to the function of levator palpebrle superiosis. When LPS function is less than 4 mm, then the procedure of choice is frontalis sling procedure<sup>15</sup>.

Ptosis surgery is a challenging area in oculoplastic, the aim of which is to clear the visual axis, reducing chances of amblyopia and improvement in visual field. Secondary and most important goal of ptosis surgery in adult especially females, is restoration of cosmetics regarding upper lid crease, symmetry and lid margin contour. Silicon band suspension of frontalis muscle has been found a good treatment option for surgery in severe ptosis as it has a good tensile strength to support upper lid and good elasticity for lid closure due to effect of orbicularis muscle. In a study it is found that double rhomboid a good technique and has better out come for better upper lid support<sup>16</sup>.

In our surgical procedure, we have used graefe's knife, modified to bear a hole at its tip. While in the literature, most of surgeons has not described the instrument to make the track while some mention a needle. The width of the graefe's knife is more and it produces more surgical trauma so in the initial days of postoperative period, there is more oedema so there is fibrosis along the track but I think it may be a factor in permanent correction of the ptosis and may in the long run be a factor for low recurrence rate.

We have found it quite beneficial as many times there is need of re-adjustment on the table. Leaving the ends of the band is also very beneficial. After so many periods we can adjust the band according to the required level. Making the double rhomboid needs fifteen minutes extra time but by this procedure the contour of the lid is more proper and is also adjustable.

By double rhomboid, the lid can be adjusted at three different points. So that the contour of the lid can be managed according to the desired shape and level. In single rhomboid, the elevation of the lid leads to straightening of the lid margin. In our procedure we removed the bandage after 48 hours. Because after this period most the oedema subsided. In 20% of the patients, there was need to readjust the level and shape by manipulating the sleeve.

## CONCLUSION

Single rhomboid ptosis surgery has 4.2 times more relative risk for asymmetry of upper lid contour than double rhomboid silicon band frontalis suspension.

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