

**MONOTRIANGULAR VERSUS BITRIANGULAR
FASCIA LATA FRONTALIS SLING FOR
TREATING CONGENITAL PTOSIS**

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Table of Contents

Table of Contents

Abstract

Introduction 1

Aim of work 3

Review of literature

Chapter 1:Applied anatomy of the Eye Lid 4

Chapter 2:Physiology of Lid Movement 16

Chapter 3:Classification of Ptosis 18

Chapter 4:Evaluation of a Ptosis patient 30

Chapter 5:Management of Ptosis..... 34

Chapter 6:Frontalis sling procedures 39

Patients and Methods

Pre operative evaluation 52

Surgical technique 52

Post operative care &follow up 56

Statistical analysis..... 57

Results

Patient Demographics 60

Changes in the Palpebral fissure width (PFW) 61

Changes in the Marginal reflex distance (MRD)..... 62

Cosmetic outcome 63

Operative time..... 64

Complications 65

Discussion.....69

References 74

Arabic Summary

List of Abbreviations

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CEDE: Corneal epithelial defect

CPEO: Chronic progressive external ophthalmoplegia

EMG: Electromyography

GBS: Guillian-Barre syndrome

MH: Malignant hyperthermia

MRD: Marginal reflex distance

MRD1: is the distance from the central pupillary light reflex to the upper eyelid.

MRD2: is the distance from the central pupillary light reflex to the lower eyelid.

MG: Myasthenia Gravis

PEE: Punctate epithelial erosion

PFW: Palpebral fissure width

SOOF: Suborbicularis oculi fat

List of Figures

List of Figures

Figure 1: A diagram illustrating the orbital and palpebral portions of the Orbicularis Oculi muscle.....	7
Figure 2: A diagram illustrating the distribution of the preaponeurotic fat pads in the upper and lower lids.....	9
Figure 3: Cross section in the upper eyelid showing relations of the levator muscle.....	11
Figure 4: A diagram illustrating the lower eyelid retractors.....	14
Figure 5: Involutional aponeurotic ptosis with high lid crease and a thin lid.....	21
Figure 6: Ice pack test: note the improvement in left eye ptosis after application of ice for two minutes. The ptosis improved by 2 mm.....	22
Figure 7: Severe Ptosis in a 58 year old female with CPEO.....	23
Figure 8: Ptosis in a patient with myotonic dystrophy.....	24
Figure 9: A: Complete right upper lid Ptosis in primary position and B: complete limitation of adduction of the right eye on left gaze.....	25
Figure 10: syndrome Right mild Ptosis and miosis in a 32 year old female with acquired Horner	27
Figure 11: Jaw-winking Ptosis. There is improvement of left Ptosis after opening of the mouth.....	28
Figure 12: Left mechanical Ptosis in a patient with neurofibromatosis.....	29
Figure 13: Degrees of ptosis.....	31
Figure 14: Levator excursion test.....	32
Figure 15: Crutch glassaes holding up the upper eyelid.....	34
Figure 16: Drawing illustrating the tape creating an artificial fold.....	35
Figure 17: A diagram showing different sling configurations.....	45
Figure 18: A photograph showing the open sky technique of frontalis suspension.....	46

List of Figures

Figure 19: A photograph showing a modified direct tarsal fixation method of frontalis suspension.....	46
Figure 20: (Left) A photograph of the fascia lata stripper. (Right) The proximal end of the dissected fascia lata strip is engaged into the stripper.....	53
Figure 21: Schematic presentation of sling in Group A, bitriangular method.....	54
Figure 22: Schematic presentation of sling in Group B, monotriangular method.....	55
Figure 23: Sex distribution among patients of both groups A and B.....	60
Figure 24: Age distribution among patients of both groups A and B.....	60
Figure 25: Mean improvement in palpebral fissure width (PFW) in groups A & B following surgery.....	61
Figure 26: Mean improvement in margin reflex distance (MRD) in groups A & B following surgery.....	62
Figure 27: Patients attaining excellent cosmetic outcome (grade 3) in both groups A & B regarding 3 parameters: lid crease appearance, lid height symmetry and lid contour.....	63
Figure 28: Comparison between the mean operative time in both groups A & B.....	65
Figure 29: Short-term complications in both groups A and B.....	67
Figure 30: Long-term complications in both groups A and B.....	67
Figure 31: Preoperative (left) and 6-month postoperative (right) photographs of 2 patients from group A (bitriangular method).....	68
Figure 32: Preoperative (left) and 6-month postoperative (right) photographs of 2 patients from group B (monotriangular method).....	68

List of Tables

List of Tables

Table 1: Definition of Cosmetic Grading Scale.	56
Table 2: Summary of the surgical results and post-operative complications of group A.	58
Table 3: Summary of the surgical results and post-operative complications of group B.	59
Table 4: Mean change in PFW (palpebral fissure width) in groups A and B after surgery and its significance.....	61
Table 5: Mean change in MRD (Margin reflex distance) in groups A and B after surgery and its significance.....	62
Table 6: Mean postoperative grades for lid crease, lid height symmetry and lid contour for groups A and B and its significance.....	64
Table 7: Paired t test results for the difference in operative time for both techniques.	64
Table 8: Paired t test results for the difference in complication rate among both techniques.....	66

Abstract

Blepharoptosis surgery is one of the most common oculoplastic procedures performed in the pediatric age group. The aim of surgery is to clear the visual axis to reduce amblyopia and to correct any anomalous head posture adopted by the patient. Another important goal is to improve appearance by producing symmetric eyelid creases and contours.

This study was conducted on 30 eyelids of 20 patients suffering from congenital ptosis with poor levator function. Patients were allocated to 1 of 2 surgical groups. Group A underwent fascia lata suspension using the bitriangular sling configuration while group B was treated using the monotriangular sling configuration. Harvesting of fascia lata was conducted using a fascia lata stripper.

We found that the sling configuration (mono or bitriangular) did not alter the surgical outcome. Results and complications of the monotriangular and bitriangular methods were similar. In the monotriangular method, the operation was shorter and easier, less sling material (fascia lata) was needed, and fewer eyelid skin wounds were produced. Theoretically, the chance of intraoperative complications such as eyelid hematoma and damage to ocular soft tissues is less.

Introduction

Blepharoptosis surgery is one of the most common oculoplastic procedures performed in the pediatric age group. The aim of surgery is to clear the visual axis to reduce amblyopia and to correct any anomalous head posture adopted by the patient. Another important goal is to improve appearance by producing symmetric eyelid creases and contours. (Landa et al., 2002)

The choice of surgical procedure depends on the function of the levator muscle. Frontalis suspension surgery, using an exogenous or autogenous material, is most often used as the procedure of choice for patients with severe congenital ptosis and poor levator function. (Brindley, 1997) However, super-maximum levator resection or Whitnall ligament sling have been used by some surgeons (Chen et al., 2004) and reverse use of protractor muscles (frontalis and orbicularis oculi) as retractors is recommended by others. (Tsai et al., 2000) (Goldey et al., 2000)

Different materials have been used for eyelid slings, the most popular exogenous ones are silicone rod (Carter et al., 1996) Mersilene mesh (Ethicon, Blue Ash, OH, U.S.A.) (Kemp et al., 2001) Supramid (S. Jackson, Alexandria, VA, U.S.A.) (Katowitz et al., 1979) and Gore-Tex (W.L. Gore and Associates, Newark, DE, U.S.A.). (Tyers and Collin, 2001) The endogenous materials commonly used are fresh or preserved fascia lata. Others include temporalis fascia, palmaris longus tendon, plantaris tendon and umbilical vein. (Esmaeli et al., 1998)

For many years now, autogenous fascia lata is considered the best material for this operation. (Dresner, 2001) This may be explained by its

low rate of complications and long term viability and compatibility.
(Wheatcroft et al., 1997)

There is no general agreement on sling configuration: single, double rhomboid (Goldberger et al., 1991), pentagonal (Ben Simon et al., 2005), or triangular methods (Antoszyk et al., 1993) can be used. Some believe that the monotriangular method is best for peaked brows and the pentagon or rhomboid type is preferred for diffuse, elevated brows. (Custer et al., 2001) Others recommend monotriangular (modified Fox method) for children and bitriangular (modified Crawford method) for adults. (Ben Simon et al., 2005)

Aim of Work

This study is designed as a prospective clinical trial to compare two methods of upper eyelid sling placement with autogenous fascia lata in the treatment of congenital upper eyelid ptosis with poor levator function. Effectiveness of both techniques will be assessed using the following parameters:

- Change in palpebral fissure width and upper eye lid margin reflex distance (MRD).
- Symmetric eyelid height, eyelid crease appearance and the overall lid contour.
- Operative time.
- Short term complications including: corneal epithelial defects, entropion, lash ptosis, lagophthalmos and wound dehiscence.
- Long term complications including: under correction, fascial knot exposure and suture abscess.

Moreover, Complications related to the harvesting site & gait difficulty will be monitored.

Review of Literature

Chapter I. Applied Anatomy of the Eye Lid

The eyelids are complex specialized facial adaptations designed to protect, moisten, and clean the ocular surfaces. These superficial components are modified by structures arising from within the orbit, adding complexity to the function and anatomy. Consideration of eyelid anatomy as a superficial component with deep modifiers clarifies the relationships to the surrounding face. (Nesi et al., 1998)

For the purpose of oculoplastic surgery; the eyelids can be divided into the following structures:

- 1-Skin and subcutaneous areolar tissue;
- 2-Orbicularis Oculi muscle and submuscular fascia;
- 3- The Orbital Septum;
- 4- Preaponeurotic fat;
- 5-Eyelid retractors;
- 6-The Tarsal plates; and
- 7-The conjunctiva.