

CASE REPORT

Frontalis Brow Suspension for Congenital Ptosis using Silicon Dacrocystorhinostomy Tube with Three Months Follow up

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ABSTRACT:

Primary congenital ptosis usually presents at the time of birth and is due to poor development of levator muscles. The frontalis brow suspension technique is being used for patients with severe congenital ptosis and a levator function of 4 mm or less. Oculoplastic surgeons have been using different artificial materials not only to avoid an accessory wound and bleeding, but also to shorten the surgical time. Several artificial materials (e.g., nylon suture, silicone rods) have been used for congenital ptosis surgery. In this case report we have used silicon dacrocystorhinostomy (DCR) tube for frontalis brow suspension. This synthetic tube is readily available as well as cost effective with promising results post operatively for congenital ptosis correction with Frontalis Brow Suspension Technique.

Keywords: Congenital ptosis, Frontalis brow suspension, Silicon tube

INTRODUCTION:

The frontalis brow suspension technique is being used for patients with severe congenital ptosis and a levator function of 4 mm or less.¹ Different types of material are being used for sling including expanded polytetrafluoroethylene (Gore-Tex®),² fascia lata,³ synthetic visitec frontalis suspension set and polytetrafluoroethylene.⁴ All these materials have proved effective in correction of ptosis with frontalis brow suspension technique. Among these, synthetic materials are most easily available, but are not very cost effective. Different Oculoplastic surgeons have been using different artificial materials not only to avoid an accessory wound and bleeding, but also to shorten the surgical time. Several artificial materials (eg, nylon suture, silicone rods) have been used for congenital ptosis surgery.^{5,6,7} In our procedure we have used silicon dacrocystorhinostomy (DCR) tube for frontalis brow suspension which is readily available as well as cost effective with

promising results.

CASE REPORT:

A 03 years old baby girl was brought to outpatient eye department of PNS SHIFA Hospital by mother with complaints of drooping of both upper eye lids since birth and abnormal head posture. On examination, cycloplegic refraction was normal for age and there was congenital severe bilateral Ptosis with compensatory chin elevation and poor levator function. Rest of eye and systemic examination did not reveal any abnormality. Parents were counseled about procedure and patient was planned for bilateral frontalis brow suspension procedure with synthetic silicon dacrocystorhinostomy (DCR) tube under general anesthesia. (Figure 1a)

Figure: 1a
Bilateral severe congenital ptosis with chin elevation



Patient was operated for congenital Ptosis with frontalis brow suspension technique. Incision site were marked after cleaning with pyodine and lignocaine with adrenaline was injected to reduce the bleeding. After incision aneurysm needle was used to pass silicon dacrocystorhinostomy (DCR) tube subcutaneously horizontally using the metal probes attached with the tube (Figure 1b).

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Figure: 1b
Dacrocystorhinostomy (DCR) tube passing subcutaneously horizontally using the metal probes attached with the tube



The tube was anchored to tarsal plate with 5 '0' ethibond suture and skin incisions were closed using vicryl 6.0 suture (Figure 2a).

Figure: 2a
Anchoring tube with tarsal plate using ethibond suture.



Silicon dacrocystorhinostomy(DCR) tube was easily incorporated inside eye of aneurysm needle after detaching the metal probes for easy passing tube superiorly above brow (Figure 2b).

Figure: 2b
Assisted passing of tube using eye of aneurysm needle



After securing haemostasis silicon dacrocystorhinostomy (DCR) tube was tied and secured in place with ethibond suture after optimal required ptosis correction and skin incisions were closed with 6.0 Vicryl suture. Both eyes were padded with eye ointment (Figure 3a).

Figure: 3a
Tube tied up with optimal upper eye lid adjustment



Eye pads were removed in evening after 12 hrs and post operatively upper eye lid position were satisfactory in both eyes. Patient was again seen after 3 days for any corneal exposure and is being followed up since 03 month post operatively on monthly basis (Figure 3b).

Figure: 3b
Post op recovery



Frontalis brow suspension technique using silicon dacrocystorhinostomy(DCR) tube has shown very promising results in children with congenital Ptosis. Post operatively there is less lagophthalmos and inflammation as compared to other material being used. Future prospects in using silicon dacrocystorhinostomy (DCR) tube in adults are also being under consideration .

DISCUSSION:

Congenital ptosis, or dysmyogenic ptosis, is the most common ptosis seen in childhood. It comprises of a

group of diseases in which the ptosis is due to a developmental dystrophy of the levator muscle characterized by fibrosis and deficiency of striated muscle fibers. Most cases of congenital ptosis are idiopathic. However, congenital ptosis may occur through autosomal dominant inheritance. Common familial occurrences suggest that genetic or chromosomal defects are likely. There is no known racial or gender preference, and roughly 75% of cases are unilateral.⁸ The condition may be associated with anisometropia, astigmatism, strabismus or amblyopia. Incidence of amblyopia was measured to be 20%, of which 3% was attributable to the ptotic occlusion of the pupil.

Congenital ptosis is classified as mild (2-mm ptosis), moderate (3-mm ptosis) and severe (4-mm ptosis). Levator function is classified as excellent (13 to 15 mm), very good (10 to 13 mm), good (8 to 10 mm), fair (5 to 7 mm) (Figure 1) or poor (4 mm or less). These two measurements are used to determine which surgical approach to take, with levator function being the more important of the two.⁹ The frontalis brow suspension technique is usually used for patients with severe congenital ptosis and a levator function of 4 mm or less.¹⁰

Both oculoplastic surgeons and plastic surgeons perform frontalis suspension surgeries. Plastic surgeons prefer to use autologous material, (fascia lata, fascia temporalis) and sometimes fabricate harvested fascia into slings. Different oculoplastic surgeons have been using different artificial materials not only to avoid an accessory wound and bleeding, but also to shorten the surgical time. Several artificial materials (nylon suture, silicone rods) have been used for congenital ptosis surgery.^{5,6,7} Most readily available and easy to use is synthetic visitec frontalis suspension set as it has needles attached at two ends of silicon tube for easy procedure. The only drawback is that it is very expensive and all patients in our set up cannot afford it. Keeping in view this silicon dacrocystorhinostomy (DCR) tube was used for sling in correction of severe congenital ptosis in children. It is cost effective and easily available locally also. Only disadvantage is that metallic probes attached to it are blunt and aneurysm needle has to be used for assistance in passing sling. Results are promising and post-operative recovery is smooth with less lagophthalmos, swelling and inflammation.

In most of studies and case series present in literature commercially available silicon visitec frontalis suspension set was used where as in our case silicon DCR tube has given similar results post operatively. In study conducted by Ali Z, DCR tube was used for ptosis surgery but

surgeons performed surgery in two steps and finalized the lid position on first post op day¹¹ where as in our case surgery was finalized in single setting which is more assuring and comfortable for children. Moreover in our study metal probes attached with DCR tube were used to pass horizontally rather than using aneurysm needle which make surgery easy and cost effective with better cosmetic results.

CONCLUSION:

Frontalis brow suspension using silicon dacrocystorhinostomy (DCR) tube for treatment of severe congenital ptosis in children is new approach with promising results. It is cost effective and easily available synthetic material which can replace the existing synthetic materials being used by oculoplastic surgeons. Future aspects in its use in young children and adults are to be explored further.

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