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# Frontal suspension congenital ptosis on bilateral



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## ABSTRACT

**Introduction:** Ptosis is a drooping or inferodisplacement of the upper eyelid. The most common type of congenital ptosis results from a poorly developed levator muscle. Marked ptosis that obstruct vision must be corrected in infancy to prevent amblyopia. Correction of bilateral congenital ptosis with significant amblyopia was performed in this case. The choice of surgery technique is frontalis suspension.

**Method:** A case report of 12 years old boy with decrease of visual acuity since four years ago with dropping of both upper eyelid present at birth. Detail ophthalmology examination on both eyes show an amblyopia, margin reflex distance -1, levator function

is less than 4 mm, and postural change (chin lift). Correction of bilateral ptosis with frontalis suspension was performed and refraction measurement had done after correction.

**Result:** The frontalis suspension give a good result in cosmetic with margin reflex distance +5 and +4, sixth month after correction. However, amblyopia persist after correction of ptosis and patient use a spectacles corresponding with best refraction measurement.

**Discussion:** Correction bilateral congenital ptosis with visual axis occluded must be done in infancy to prevent amblyopia. Correction bilateral congenital ptosis with frontalis suspension give a good result in margin reflex distance and cosmetic.

**Keywords:** Congenital, ptosis, amblyopia

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## INTRODUCTION

Ptosis or blepharoptosis is a condition where upper eyelid decline from its normal position so that it covers some portion of pupil and therefore cause impaired vision.<sup>1,2</sup>

Ptosis can occur immediately after birth or during first year of life or it can also be obtained during next age development.<sup>3,4,5</sup> Seventy percent of ptosis congenital occur unilateral.

Most cases of ptosis congenital (PC) are idiopathic. The most common cause of congenital ptosis is developmental disorder of levator muscle tissue due to the presence of fibrous tissue.<sup>6,7</sup>

PC can deteriorate vision due to the eyelid that cover most or all of the visual axis. PC should be repaired as early as possible to prevent persistent amblyopia.<sup>8,9</sup>

Treatment of congenital ptosis (98 percent) must be done with surgery.<sup>10,11,12</sup> Selection of surgical technique will depend on several factors such as physician experience, targeted therapy, underlying disease, and the degree of ptosis caused by decreased levator function.<sup>5,12,13</sup>

This case report aims to show treatment of

bilateral congenital ptosis with frontal suspension. As was stated before, unilateral congenital ptosis are much more common than bilateral congenital ptosis. In this case bilateral congenital ptosis had already developed into amblyopia and frontal suspension used cant revert back this condition.

## CASE REPORT

A male 12 years old patient complaints lowering of both eyelids since birth. This condition is accompanied by blurred vision felt since four years ago. No history of drug allergy. One of his grandfather experienced the same complaint. Patient went to an ophthalmologist before at the age of 8 years old but only given eye drops as treatment.

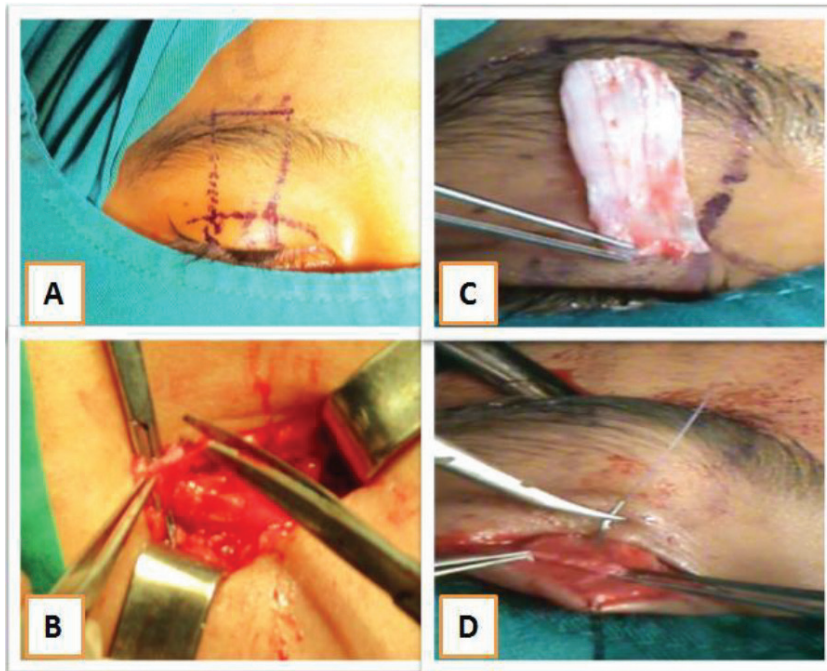
Patients have good condition and all vital signs within normal limits. From inspection : right eye visual acuity 6/12 pH 6/15 (C-1.00 x 40°). Left eye visual acuity 6/20 pH 6/15 (S-1.00 C-1.00 x90°). Both eyes have ptosis. Conjunctiva, cornea, anterior chamber, and iris all within normal limit. Isokor pupil with positive pupillary reflexes of both eyes. Lens and vitreous appear to be clear for both eyes.

Funduscopy examination of both eyes show

rounded, well defined, cup disc ratio of 0.3, arteriovenous ratio of 2/3, good retina, and positive macula reflex. Intraocular pressure using non-contact tonometry is 12.2/10.0. Good eyeball movement in all directions. Confrontations test show narrowed vision at superior direction for both eyes. Position of eyeball is symmetrical for both eyes.



**Figure 1.** An overview of the patient's eyes during initial examination (Courtesy: ROO, Division, 2015)



**Figure 2.** During Operation: A. Marking incision area; B. Taking femoral fascia lata; C. Comparing fascia lata to the area size of the marker; D. Suturing fascia to the eyelid and doing frontal suspension (Courtesy: Dewi Ratna Sari, 2015)

Test results for both eyelids : vertical palpebral fissures 3mm, horizontal palpebral fissures 30mm, levator action 0, margin limbal distance 0, margin reflect distance -1, no lid crease, lid lag is positive, positive bell's phenomenon. Patients examined in chin lift position. Dry eye examination of patient : normal tear meniscus, break-up time 30/28. Schirmer test 11mm/9mm

Patients were treated with frontal suspension surgery under general anesthesia. First, disinfection for both eyes and left femur area were done. After that we make graft from fascia lata. We mark femur +/- 5cm from condylus lateral with upward direction. Create a marker along 3-4cm at tense region. Skin incised to penetrate fat until white fascia lata layer were seen, mark 2x1,5cm of it then set it aside, we clamped and cut the fascia lata. We then sewed fascia with vicryl 3.0 followed by sewing of fat and subcutaneous layer. Then sewed skin with prolene 3.0.

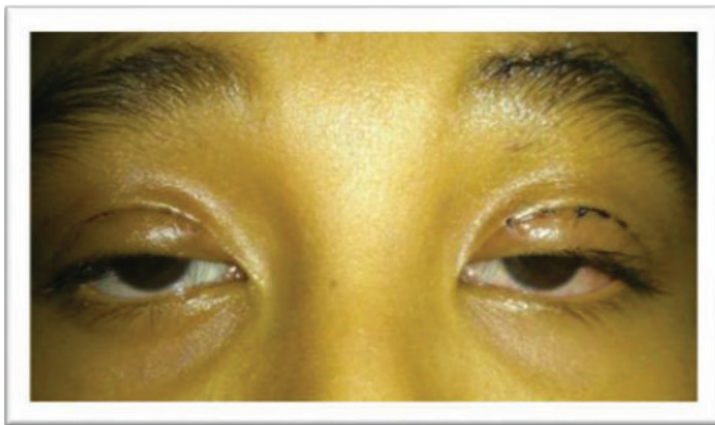
We continue to repair eyelid ptosis part of surgery, first we mark the skin crease of the lid margin with a distance of 6 mm in superior direction. Mark the width of the cornea at lid margin upwards above eyebrows approximately 2,5-3cm. Injection of pehacain and wait for 7 minutes. Starting incision of skin crease area until tarsus is seen then continued to suprasilia approximately 2,5-3cm. Creating tunnel toward skin crease until the other side. Put the fascia lata through the tunnel and fixated it into three places with U suture using 6.0 vicryl. We do hanging from tarsus with upward direction until lid margin reached limbus area, then fixated it into os.frontalis with vicryl 6.0. We sew lid crease in the central part With three stitches linked to tarsus and also sewed incision at suprasilia with prolene 6.0. Finish the operation with gentamicin eye ointment and wound dressing

One day after surgery patient complained of pain at his right eye. From examination right eye had lid hyperemia, edema, and suture. Other area of the eye are all within normal limits. Visual acuity OD is 6/20 pH 6/12 / 6/20 pH 6/15. Patient margin reflect distance is +1 for both eye. Dry eye examination for both eyes found normal tear meniscus. BUT 30/30. Schimmer test 10mm/9mm. Patients are allowed to go home with treatment of amoxicillin 3x500 mg tablets, paracetamol 3x500 mg tablets, gentamicin eyedrop 6x1 drops right eye, gentamicin eye ointment 3x1 right eye and lyteers eyedrop 1 drop per hour for both eye.

Two weeks and three weeks after surgery we do ptosis examination again. Patient had vertical palpebrae fissure of 6mm/5mm, horizontal palpebrae fissure of 30mm/30mm, margin reflect distance of 1.5mm/1.5mm, lidcrease of 6mm/6mm.



**Figure 3.** First day after operation  
(Courtesy: Dewi Ratna Sari, 2015)



**Figure 4.** Two weeks after surgery  
(Courtesy: ROO, Division, 2015)



**Figure 5.** Three weeks after surgery  
(Courtesy: ROO, Division, 2015)

We do aff hecting three weeks after surgery then told him to continue using gentamicin eye oinment and lyteers eye drop.

Six months after surgery the patient came back with no complaints. Good patient's general condition and vital signs within normal limits. All physical examination of both eye appear to be normal. Intraocculi pressure using a non-contact tonometry for both eyes is 13.0. Have good eyeball movement to all directions. Confrontation is good to all direction. Position of the eyeball appear to be symmetrical.

Further tests obtained vertical palpebral fissures 10mm/10mm, horizontal palpebral fissures 30mm/30mm, margins reflect distance 5mm/4mm, lid crease 6mm/6mm, and bell's phenomenon positive for both eyes. Dry eye patients examination : normal tear meniscus, break-up time 30/30, Schirmer 18mm/16mm.

Ocular Computed Tomography and fundusoscopic examination were also within normal limits. He was given appropriate spectacles measurement and suggested to come back one month later.

## DISCUSSION

In this case patient is a man with 12 years of age. Have experienced ptosis for both eyes since birth. The patient's parents say that patients often lifted her chin and raised his eyebrows at the sight. Alon et all stated that this is common action of ptosis patient that were done to try to be able to see better. Patient also complaint blurry eyes and embarrassed of his appearance.

Most of congenital ptosis are idiopathic. Scientists have found that this condition is passed by autosomal dominant genes associated with PTOS1, PTOS2, and ZFH-4.<sup>14,15</sup> Congenital ptosis is often followed by anisometropia, astigmatism, ocular torticollis, strabismus or amblyopia.<sup>16</sup> Eye examination in this case also found astigmatism, ocular torticollis and amblyopia.

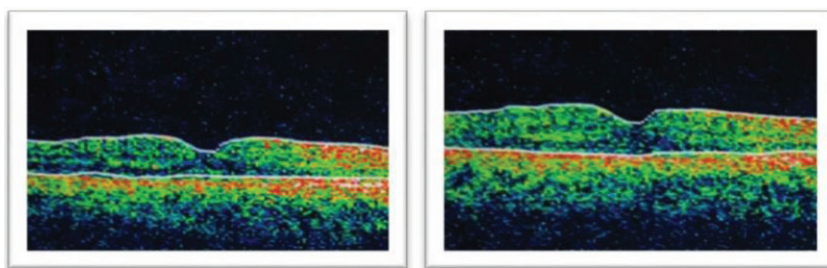
Surgery can be performed at any age in accordance with the severity of disease. Early intervention may be needed to hinder amblyopia or ocular torticollis condition, but if it is not urgent it can be postponed until age of 3 or 4 years old.<sup>17,18</sup> The surgical procedure for congenital ptosis include levator muscle resection to shorten levator complex and its aponeurosis through lid crease incision. This procedure is done if levator function is more than 4mm.<sup>19</sup> While frontal suspension is done when levator function is less than 4 mm.<sup>20,21</sup> This procedure uses material to connect eye lid to frontal muscle using autogenous fascia lata, preserved fascia lata, a non-absorbable yarn, or a silicon band.



**Figure 6.** Figure both eyes six months after surgery  
(Courtesy: Dewi Ratna Sari, 2016)



**Figure 7.** Overview fundus of both eyes of patients  
(Courtesy: Dewi Ratna Sari, 2016)



**Figure 8.** OCT picture of both eyes  
(Courtesy: Dewi Ratna Sari, 2016)

Materials often delivered successful operation is autogenous fascia lata due to low complication rate and lower inflammatory reaction compared to other material.<sup>11,21</sup> In this case, patient already experienced amblyopia and ocular torticollis. Levator function is less than 4 mm, so frontal suspension is used. Autogenous fascia lata taken from the femoral area were used to minimize complication.

During first few weeks after the surgery patient should be evaluated for signs of exposure keratopathy, infection, granuloma formation, and overcorrection-undercorrection.<sup>7,8,15</sup> Postoperative

evaluation in this case does not show any complication. Good cosmetic results will hinder patient from feeling ashamed complaint. Too bad amblyopia that had already developed cant be reverted back. To treat patient blurry vision we give patient best correction spectacles.

## CONCLUSION

Bilateral congenital ptosis is less common than unilateral. But can have a negative effect on vision for covering the visual axis of the eye and the risk of the occurrence of amblyopia and child developmental delays. General conditions and eye examination should be done in full as the basis for selecting actions and prognosis. Surgery to correct ptosis give good results in cosmetics and function, but congenital ptosis with amblyopia should be recognized as early as possible so that it can be repaired immediately so that amblyopia is not settled.

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