

## Ptosis Spectacle



*The condition of Ptosis is discussed with its classification and management by surgery, scleral contact lenses and ptosis crutch. The method of the making of the ptosis spectacle - using a nylon thread support that is effective, comfortable, and reasonably inconspicuous – is explained.*

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Ptosis is a drooping of the upper lid, which is usually due to weakness, deficient development or absence of the levator palpebrae superioris muscle. The normal upper lid rests approximately 2 mm below the upper limbus when the eye is looking straight ahead. The lower lid normally rests 1 mm above the lower limbus. The palpebral fissure for adult males is between 7 and 10 mm and for females it is 8 to 12 mm. According to Coles<sup>1</sup>, ptosis (bilateral or unilateral) may be (i) congenital when it is present at birth, or (ii) acquired when it develops after birth.

Acquired ptosis may be a) senile or age related, b) a result of oculomotor (third nerve) palsy, c) due to intracranial tumour, or d) a result of trauma, as in intraocular surgery, e.g., after cataract surgery. Pseudoptosis can be simulated in a small globe due to injury or inflammation resulting in an abnormal shape, as in pthisis bulbi.

The patient complains of the cosmetic effect of the drooping of the upper lid, and in more marked cases there may be interference with vision. In congenital cases this interference may be sufficient to cause amblyopia.

Lyle and Cross<sup>2</sup> suggest the following line of treatment. In cases of congenital origin, if the deformity is not of gross degree and there is no interference with vision which might lead to amblyopia, surgical treatment may be postponed until the child attains the age of four or five years; otherwise the operation may be needed even for cosmetic reasons. When the condition is acquired treatment depends upon the cause which must be investigated. In cases of paralysis of the oculomotor nerve, however, the drooping eyelid may serve the useful function of preventing double vision, and if there is useful vision in the eye the possibility of correcting diplopia should be considered before the eyelid is returned to its normal position. Also, surgical correction by fixing the eyelid at a higher level should not be so great that the eye cannot be closed.

DeSouza et al<sup>3</sup> describe an infant having congenital bilateral ptosis and the remarkable ability to lift the eyelid with the hand in order to see! (Figure 1).

But, in cases where surgery is not preferred or indicated and in elderly patients, a prosthetic device such as a ptosis props fixed to the back of the spectacle frame



Figure 1: This photograph, of the infant having congenital bilateral ptosis due to Mobius's syndrome, taken at the age of 7 months, illustrates her remarkable ability to lift the eyelid in order to see, a skill that was repeatedly demonstrated from 6 months of age.

(or ptosis crutch or a ptosis spectacle) is often of great value.

Till recently, in India, a small semi-circular piece cut from the periphery of an old gramophone record used to be glued to the inside of the upper portion of a plastic spectacle frame to lift and support the drooping upper lid. But, the device was not cosmetically appealing and was also not comfortable.

Moss<sup>4</sup> reports on the method of relieving ptosis with the use of a scleral contact lens. Either the superior flange of the shell is built up by increasing the mass, which will move the upper lid and improve ptosis, or a shelf is placed across the upper section of the scleral lens to support the upper lid. But this approach results in lack of blinking. Moss<sup>4</sup> also details the making of an improved crutch by utilizing steel orthodontic round wire of spring tempered quality and fixing it to the bridge of a modern plastic spectacle frame to improve cosmesis and give greater movement to the upper lid. The procedure is, however, cumbersome and needs precision.

Let's now consider a comparatively easier method of making a ptosis spectacle by fixing support<sup>5</sup> (made of so-to-say non-conspicuous nylon thread that is sturdy and comfortable, too) to a plastic frame. A hole, slightly smaller than the thickness (diameter) of the support, is drilled at the bridge on the front side of the frame. One end of the support is thinned with a surgical knife or razor blade and the cord (nylon thread) pushed on the inside of the frame. Another hole is drilled at the temple on the inside of the frame out of which the free end of the cord is pulled out. The nasal end of the cord is pressed with a plier so as to flatten it to pre-



Figure 2: Ptosis spectacle (frame fitted with support)

vent it from coming out of the hole at the bridge. Easy adjustment can be made by pulling the support from the front at the temporal end with a pair of pliers until the required depth is achieved (Figure 2). The support will then fit the contours of the upper lid. Care needs to be taken not to over-correct the drooping upper lid elevation, so as to avoid secondary mechanical effects on ocular surface/adnexa due to the support.

Step-wise revision of the fixing of the ptosis support.<sup>7</sup>

- ① Drill two holes with a smaller diameter than the nylon cord through the temporal and nasal ends of the eyewire.
- ② Taper the ends of the cord and thread through the holes from the proximal side.
- ③ With a pair of pliers, pull the cord through frame at the bridge and cut off the cord level with the frame (the fact that the hole is smaller than the cord will make it a secure fit).
- ④ Fit the frame on the patient and pull the cord through until the support is in the correct position, then cut off surplus cord.

The prosthetic device can correct almost all types of ptosis. The cosmetic improvement is startling, the emotional impact is rewarding, and there may well be the possibility of prolonged functional improvement in the condition because of mechanical stimulation<sup>6</sup>.

## REFERENCES

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