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WITH REPORT OF TWO CASES.

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In the condition known and described as ptosis the elevator muscle of the superior eyelid, the levator palpebræ, is absent, deficient, or disabled. This muscle arises from the under surface of the lesser wing of the sphenoid near the apex of the orbit, and is inserted into the anterior surface of the superior tarsus. In elevating the lid it holds the tarsus firmly against the globe, and draws the superior border under the orbital arch, producing the oculo-orbital fold in the integument.

In congenital ptosis the levator palpebræ is absent, and the opposing muscle, the orbicularis palpebrarum, is unrestricted in its action; this, together with the slight influence of gravity, depresses the superior lid and narrows the palpebral commissure so as to interfere with or altogether exclude the light from the pupil. The oculo-orbital sulcus is obliterated, giving the face an inane and inexpressibly stupid aspect. Epicanthus and flattening of the nose are

frequently associated with congenital ptosis. In order to see anything, even objects on or below the horizontal meridian, the patient is compelled to throw the head backward, and distort the face by tension of the orbicularis oris and zygomatic muscles in his efforts to widen the palpebral commissure by depressing the inferior lid, presenting a position and a physiognomy that are pitiable and distressing in the extreme.

Fig. 1.

I am not sufficiently versed in the ætiology and classification of malformations and deformities to say whether the condition is due to an arrest of development, to maternal impression, to some pathological condition of embryonic life, or to some atavistic or degenerative process.

In the two cases I have reported it seems to have been hereditary. The boys are brothers; the father and grand father were afflicted in the same way. It is rather rare. Only three cases have come under my observation in six years of ophthalmic practice. All my cases have been bilateral. For the correction or relief of this deformity several operations have been devised by different men. Among the most prominent may be mentioned those of Snellen, Eversbuch, Panas, and Mules, a detailed description of which is not necessary further than to say that they all involve the same principle, that of making the occipito-frontalis muscles assume the duties and functions of missing levator palpebræ.

In May, 1892, I exhibited before the Louisville Clinical Society a case on which I had operated by Panas's method. In commenting on the case and the

operation at that time, I said (*American Journal of Ophthalmology*, August, 1892):

"She has, as you see, pretty good control of the upper lid by the action of the occipito-frontalis, and no longer distorts the face in her efforts to depress the inferior lid. She has been in school for the past year and has no trouble in keeping up with her classes.

"The only disfigurement from the rather extensive operation is the small pit under the brow where the slip of integument was passed through. A few hairs persistently grow from this opening. This is the only case in which I have attempted this operation—in fact, the only time I have ever seen it performed. While the result has not been perfect so far as correcting the deformity is concerned, the improvement has been so marked as to lead me to regard this as the most rational and the most successful of the various operations that have yet been devised for the relief of this peculiar and distressing deformity."

When the cases that I now wish to report came under my care, I attempted to relieve them by the same operation, but with indifferent results. I found both patients bad subjects for plastic surgery, on account of an apparent predisposition to eczema. In spite of every precaution the skin around the edges of the wounds would become eczematous, and later the stitches would suppurate, which, of course, loosened the flap and destroyed the effect of the operation and left some cicatrices which are still plainly apparent. While some improvement followed the operation, as must necessarily be the case in any procedure that would produce vertical cicatrices of the superior lid, the result was so far from satisfactory that I decided to operate a second time by a new method, or, more correctly speaking, by a radical modification of Mules's method. With the patient anæsthetized I made an incision three eighths of an inch long in the free margin of the lid and about a sixteenth of an inch in depth, the site of the incision being midway between the outer and inner canthus. I then made a second incision three fourths of an inch in length above the brow, extending through the integument and

occipito-frontalis muscle (the most prominent part of the occipito-frontalis having been determined and marked prior to the anæsthesia). Then, taking a flat needle with a long, flexible shank with the eye very near the point, carrying about six inches of No. 30 silver wire, I passed it into the lid at the inner extremity of the marginal incision, passing upward be-

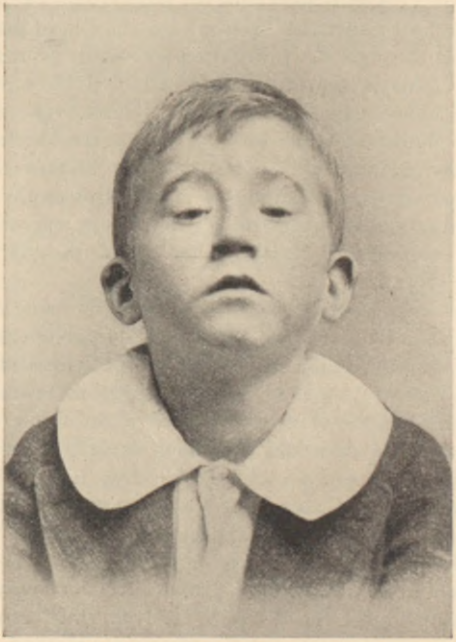

Fig. 2.—Case I, before operation.

tween the orbicularis muscle and the tarsus, under the brow, and coming out at the inner extremity of the incision above the brow. The needle was withdrawn, leaving the wire in position; the other end of the wire was passed through the eye of the needle and carried into the outer extremity of the marginal incision and brought out at the outer extremity of

the superior incision, and the needle withdrawn as in the first instance. The loop of wire was drawn into the marginal incision and the wound closed with four or five firm sutures. The ends of the wire were then passed through a perforated shot and traction made until the desired elevation of the lid was

FIG. 3.—Case I, after operation.

secured. The shot was then pressed with pliers and the excess of wire clipped off, leaving a quarter of an inch on each side of the shot. The incision was closed with silk sutures. Afterward the superior incisions were dressed with iodoform gauze; the marginal incisions were left without dressing

Both eyes of each patient were operated upon under one anæsthesia. The sutures were removed from both superior and marginal incisions forty-eight hours after operation. The results in the four operations have all been successful far beyond my expectations, as you can see from the photographs taken before and after the operation.

FIG. 4.—Case II, before operation.

Dr. Mules was the first to suggest the permanent wire suture. His operation was described to the International Congress of Ophthalmology at Edinburgh in August, 1894. In May, 1895, he gave the results of his further experience

before the London Ophthalmic Society, with the following description (*Lancet*, May 11, 1895):

"Two needles with eyes near their points were passed deeply through the frontalis tendon over the eyebrow, and their points brought out at the margin of the lid behind the

FIG. 5.—Case II, after operation.

lashes, taking up a substantial part of the tarsal cartilage on their way. A piece of silver wire was threaded through each needle, which was then withdrawn, leaving the loop of wire passing from the brow to the edge of the lid and back to the brow again. This was then tightened until the lid was suffi-

ciently raised, the edge of the lid being slightly grooved by an incision to allow the wire to sink into the substance of the lid. One end of the wire was then passed under the skin and made to emerge by the side of the other end of the wire. The two ends of the wire were then twisted on each other until the lid was raised permanently, the ends were cut off, and the wire allowed to sink below the level of the skin. The skin at this point and at the lid margin healed over the wire, which remained permanently fixed in the substance of the lid. From further experience it was found that the wire remained in position without causing irritation; the lids could be closed, and remain closed during sleep. All kinds of wire had been tried, but it had been found that silver wire was the most satisfactory. It was necessary to note at the time of the operation the situation of the twisted end of the wire in case it became necessary to remove the suture afterward."

The points of superiority of the operation as devised by me are that the incisions make it possible to bury the wire from the start without waiting for it to "sink below the skin" of its own accord. With the incisions the recovery from the operation is practically complete in forty-eight hours. The introduction of the needle at the lid margin instead of above the brow removes the possible danger of passing through the lid and puncturing the sclera, and secures a better position for the suture. With the perforated shot the degree of elevation of the lid is quickly, easily, and accurately controlled without endangering the integrity of the wire by twisting. Then, if at any time after the operation it is desirable to modify its effects, it is only necessary to cut down upon the shot, which can readily be felt beneath the skin, and diminish or increase the effect by altering the length of the wire loop.

In all four of the operations I used the No. 1 shot, and had the perforation made barely large enough to admit the two wires.

As to the permanency of their result, the only thing that could unfavorably influence it would be the migration of the suture. The size and shape of this, together with the imbedding of the shot, make this so remote a probability as to practically eliminate it from consideration.

My course in advocating early operative interference in the cases has been criticised as being at variance with the time-honored procrastination policy of the authorities, but the results obtained in all three, more especially in the last two cases, as reported by me, certainly demonstrate the correctness of my position.

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