

Traumatic 6th Nerve Palsy Managed with Medial Rectus Recession with Hangback Sutures and Hummelsheim Procedure

Akash P. Shah, Abhay A. Lune, Parikshit Gogate, Sudeep N. Pujari

Department of Ophthalmology, Dr. D.Y. Patil Medical College and Research Centre, Pimpri, Pune, Maharashtra, India

ABSTRACT

Traumatic paralytic esotropia due to 6th nerve palsy is not uncommon but difficult to manage. We reported a case of 38-year-old male who sustained head injury in road traffic accident 15 years ago and inward deviation of his left eye. His vision in right eye was 20/20 and counting fingers at one foot in the left eye. He had >70 prism diopters esotropia in the left eye with restriction of movements in all directions of gaze except adduction. His forced duction test was positive. Examinations of the anterior and posterior segments of both eyes were within normal limits. Magnetic resonance imaging suggested old traumatic insult in the left eye. Diagnosis of left eye traumatic 6th nerve palsy with medial rectus contracture was made. Left medial rectus recession with hangback sutures and Hummelsheim procedure were performed. Postoperatively, the patient's vision in the left eye had improved to 20/80 the esotropia had reduced to 15 prism diopters (delta).

Keywords: Abducent nerve, esotropia, trauma

INTRODUCTION

Traumatic paralytic esotropia due to abducent nerve palsy is not uncommon but difficult to manage. It has less complex presentations having only the lateral rectus muscle affected with deviation in only horizontal plane and no torsional deviation exists. Long standing cases are associated with medial rectus contracture of the ipsilateral eye due to unopposed action.

CASE REPORT

We report a case of 38-year-old male with head injury in road traffic accident 15 years ago, complicated with esotropia of the left eye. His vision in right eye was 20/20 and counting fingers at 1 foot in the left eye due to severe esotropia. He had >70 prism diopters (delta) esotropia

in left eye in primary gaze [Figure 1]. All movements of left eye were restricted in all directions of gaze except adduction in which there was over action of medial rectus [Figure 1]. His forced duction test was positive. Examination of the anterior and posterior segments of the eye revealed no abnormalities. His magnetic resonance imaging showed left temporo-occipital gliosis with overlying fracture representing sequelae of an old traumatic insult. With all the above findings, diagnosis of left traumatic 6th cranial nerve palsy with medial rectus contraction was made. A decision to perform >5mm left medial rectus recession with hangback sutures and transposition of left vertical muscles to the insertion of the paralyzed lateral rectus muscle, was made. Procedure: Left eye local peribulbar block was done using 2.5 ml lignocaine (2%) and 2.5 ml bupivacaine (0.5%). Conjunctival periotomy was done. Medial rectus was identified and separated from surrounding tissues. 6 mm medial rectus recession was done using hangback sutures, and Hummelsheim procedure was done in which superior and inferior rectus tendons were vertically split into temporal two-thirds and nasal one-third. The temporal fractions were transposed to lateral rectus tendon insertion taking care not to damage anterior ciliary vessels [Figure 2].

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Address for correspondence

Dr. Akash P. Shah, Department of Ophthalmology, OPD-5, Dr. D.Y. Patil Medical College and Research Centre, Sant Tukaram Nagar, Pimpri, Pune - 411 018, Maharashtra, India. E-mail: shahakashp@yahoo.co

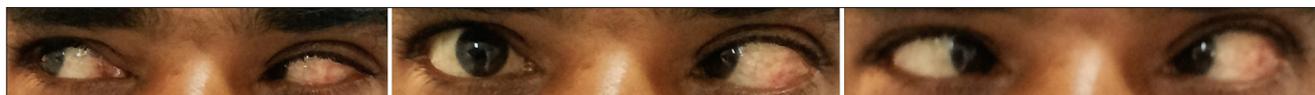


Figure 1: Preoperative photograph showing >70 delta esotropia in primary gaze and restriction of left eye abduction and over action of medial rectus in adduction

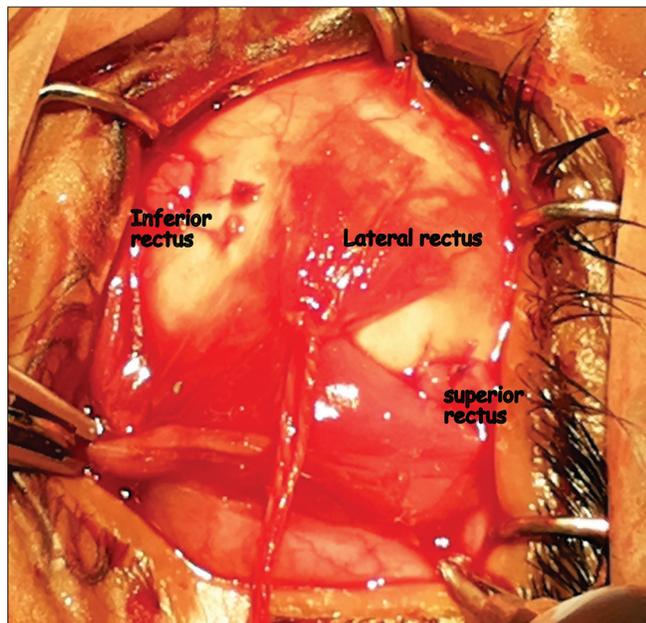


Figure 2: Hummelsheim procedure showing transposition of superior and inferior rectus lateral 2/3 near lateral rectus tendon insertion



Figure 3: Day 5 postoperative photograph showing residual 15 delta esotropia in primary gaze

RESULT

Postoperatively 20/80 vision was achieved in the left eye with 15 delta residual esotropia on the 5th day [Figure 3]. No postoperative diplopia was present.

DISCUSSION

Surgical treatment of sixth nerve palsy should be deferred whenever a chance for natural improvement

exists. At least 6 months waiting period is advised after onset. Lateral rectus resection was not a good option here as the muscle is already paralyzed. The original Hummelsheim procedure involves longitudinally splitting of the superior and inferior rectus muscles and transposing each lateral half to the insertion of the paretic lateral rectus muscle.^[1] It transfers more force. The vertical rectus muscle transposition technique is a safe and successful method of treatment in abducens nerve palsy. Its use together with additional procedures and modifications allows one to achieve orthophoria, improvement of abduction, and larger field of binocular single vision.^[2] The augmented Hummelsheim procedure combined with medial rectus muscle recession reduced mean primary position esotropia and improved abduction in patients with complete abducens nerve palsy.^[3] In Jensen's procedure reunion is done between superior and lateral rectus and inferior and lateral rectus.^[4] Here, we have done Hummelsheim procedure with medial rectus recession with hangback sutures due to medial rectus contracture. It was found to be very effective.

REFERENCES

1. Hummelsheim E. Weitere Erfahrungen mit partieller Sehnenüberpflanzung an den Augenmuskeln. Arch Augenheilkd 1908-1909;62:71-4.
2. Nowakowska O, Loba P, Broniarczyk-Loba A. The efficacy of vertical rectus transposition and its modalities in patients with abducens nerve palsy. Eur J Ophthalmol 2011;21:223-7.
3. Couser NL, Lenhart PD, Hutchinson AK. Augmented Hummelsheim procedure to treat complete abducens nerve palsy. J AAPOS 2012;16:331-5.
4. Jensen CD. Rectus muscle union: A new operation for paralysis of the rectus muscles. Trans Pacific Coast Ophthalmol Soc 1964;45:359-87.

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