CASE REPORT

TRAUMATIC DESCMET'S MEMBRANE TEAR

Tanvi Khanna¹, Mary Thomas², Vishnu Deepthi N³

HOW TO CITE THIS ARTICLE:

Tanvi Khanna, Mary Thomas, Vishnu Deepthi N. "Traumatic Descemet's Membrane Tear". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 15, April 14; Page: 3983-3985, DOI: 10.14260/jemds/2014/2387

ABSTRACT: A thirteen year old boy presented with defective vision in his left eye since childhood. His mother gave a history of complicated delivery involving forceps. He had a visual acuity of 6/60 in his left eye improving to 6/18 with correction. On examination he had multiple vertical descemet's membrane tears. His anterior segment OCT showed areas of focal hyperplasia involving the posterior corneal surface projecting into the anterior chamber. A diagnosis of traumatic descemet's membrane tear due to birth trauma was made. The patient was subsequently fitted with rigid gas permeable lenses with which he improved to 6/18.

KEYWORDS: Birth injury, vertical Descemet's tears.

INTRODUCTION: Corneal trauma is usually mono ocular and affected individuals are therefore not characterized as completely blind but visually disabled.¹ Traumatic Descemet's membrane tears are rare and occur most commonly due to birth injuries.² These patients usually present years after the actual traumatic event has taken place. We report a case of traumatic descemet's membrane tear in a thirteen year old boy due to birth injury.

Injuries to Descemet's membrane do not heal over and are usually visible by the aid of the slit-lamp. In some of the cases reported, and in the very few examined under the microscope, the entire membrane has been stripped from the substantia propria and has never become reattached. As this highly elastic membrane is stripped from its position, longitudinal tears separate it into several flat strips, each of which retains its terminal attachments near the periphery of the cornea. There is always a tendency for the free edge to curl up in ordinary descemet's tears. Such injuries in the populace of developing countries can be easily preventable provided the right medical and surgical care is instituted.

CASE REPORT: A thirteen year old boy accompanied by his parents came to our hospital with complaints of diminished vision in the left eye since birth that has been painless and non-progressive.

His mother gave a history of prolonged labor which culminated in a forceps delivery. She also gave a history of lid swelling in the left eye after birth which subsided a few days later. There were no other accompanying symptoms and no subsequent history suggestive of inflammation or any systemic etiology.

On examination, Visual acuity in the right eye was 6/9 which improved to 6/6 with -0.50Dsph while the visual acuity in left eye was 6/60 which improved to 6/18 with +5.00Dcyl at 100°. Slit lamp examination of the right eye was normal and the left eye showed multiple vertical scars in the descemet's membrane (fig. 1). Intraocular pressure (IOP) was normal in both eyes. Fundus examination of the right eye was normal and the left eye showed astigmatic disc with normal macula. Keratometry reading of the right eye was 43D in both vertical and horizontal meridian and in the left eye was 47D in the vertical meridian and 42D in the horizontal meridian.

CASE REPORT

The patient was subjected to anterior segment OCT(Optical Coherence Tomography), which showed areas of discontinuity on the posterior corneal surface along with focal hyperplasia involving the descemet's membrane of his left eye (fig. 2), and the right eye was normal. A diagnosis of corneal scarring due to birth trauma was made and the patient was subsequently fitted with rigid gas permeable lenses following which his visual acuity improved to 6/18.

DISCUSSION: Corneal injuries during birth occur mostly due to placement of forceps blade across the orbit, which result in blunt trauma to the globe as a result of compression of the globe between the end of one maladjusted forceps blade and the roof of the orbit. These injuries can also be caused by a deformed pelvis with a prominent sacral promontory. Left eye seems to be more commonly affected than the right because neonates usually present in the left occipito–anterior position.

An acute distension of the globe along with a sudden rise in IOP may exceed the elasticity of the descemet's membrane producing tears which are typically unilateral, central and line up in a vertical or oblique pattern. Birth trauma produces diffuse epithelial and stromal edema in the immediate post-partum period which gradually resolves.^{3,4}

The young endothelium resurfaces the posterior cornea synthesizing a new thick basement membrane which accentuates the edges of the tear and fills in the dehiscence. Hyper production of descemet's membrane at the edges of the hiatus followed by subsequent endothelial migration over the exposed corneal stroma leads to endothelial protrusions.^{5,6} The basement membrane takes on a beaten metal appearance. Soft tissue injuries such as periorbital edema and ecchymosis as well as intra retinal hemorrhages may accompany the trauma.^{7,8}

Corneal healing is accompanied by a high residual astigmatism with a steep meridian that usually parallels the descemet's rupture. Spectacle correction or rigid gas permeable lenses along with amblyopia treatment is indicated immediately after diagnosis. A differential diagnosis should include congenital glaucoma which is usually accompanied by horizontally placed striae, Posterior keratoconus, Hassall-Henle warts.

REFERENCES:

1. John P Whitcher, M Srinivasan, Madan P Upadhyay. Corneal blindness: a global perspective, Bulletin of the World Health Organization, 2001, 79: 214-221.
2. Aurora AL. Corneal blindness-A review. Indian J Ophthalmol 1979;27:1-14.9
3. Sindal DK, Bhat RB, Shaligram CJ. Birth injury (A case report). Indian J Ophthalmol 1979;27:31-2.
4. Linda K. Angell, Richard M. Robb, Frank G. Berson. Visual Prognosis in Patients With Ruptures in Descemet's Membrane due to Forceps Injuries Arch Ophthalmol. 1981;99(12):2137-2139.
5. Ralph I. Lloyd. Birth Injuries of the Cornea and Allied Conditions. Trans Am Ophthalmol Soc. 1937; 35: 212–220.
6. Jay H Krachmer, Mark J Mannis, Edward J Holland. Corneal Reaction to Injury, chapter 8 Elsevier/Mosby, 2005 section 2: 118-129.
7. Charles A. Perera. Birth Injury of the Cornea with "Glass Membrane" In the Anterior Chamber Arch Ophthal. 1941;25(1):75-77.9
8. Agrawal PK. The pathology of cornea (A histopathological study). Indian J Ophthalmol 1983; 31:662-5.

CASE REPORT

**Fig. 1 :Multiple vertical scars
in the descemets membrane**

**Fig. 2: Focal hyperplasia involving
the descemet's membrane**

AUTHORS:

1. Tanvi Khanna
2. Mary Thomas
3. Vishnu Deepthi N.

PARTICULARS OF CONTRIBUTORS:

1. MS, Department of Ophthalmology, Sri Ramachandra University, Porur.
2. Associate Professor, Department of Ophthalmology, Sri Ramachandra University, Porur.
3. MS, Department of Ophthalmology, Sri Ramachandra University, Porur.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Tanvi Khanna,
#2/30, Sarva Priya Vihar,
New Delhi – 110016.
E-mail: drtanvi55@yahoo.com

Date of Submission: 07/03/2014.
Date of Peer Review: 08/03/2014.
Date of Acceptance: 19/03/2014.
Date of Publishing: 10/04/2014.