

Spontaneous Closure of Traumatic Macular Hole in Young Adult: A Case Report

Yash Pathak¹, Jayesh Vira¹, S .Visalakshi¹, Sudha . N¹

¹(Sankara Eye Hospital , Krishnankovil , Tamil Nadu , India)

Abstract:

Background: Traumatic macular hole (TMH) can occur immediately after the ocular trauma or a few weeks later. TMH could result from a rupture of the fovea due to impact of the injury in early onset cases and in late onset could be due to deroofting of the cysts in chronic cystoid macular oedema. Spontaneous closure of macular hole is rare but it has been reported in young adults with small macular hole. It is associated with good visual prognosis. Optical coherence tomography (OCT) plays an essential role in patient management. We report a case of 26 year old male with TMH managed conservatively with monitoring on serial OCT scans.

Conclusion: Serial clinical visits with OCT examination can help to monitor the disease and timely surgical intervention when required. Three months of observation can be considered before deciding the surgical management for TMH.

Keywords: Traumatic macular hole, OCT , Spontaneous closure

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I. Introduction

Traumatic macular hole (TMH) can occur immediately after blunt or penetrating ocular trauma or a few days or a weeks later. It generally affects young men. The exact pathogenesis of a full-thickness macular hole following trauma is uncertain. It could result from a rupture of the fovea due to the impact of the injury in early onset TMH or in late onset TMH it could be due to de-roofing of the intra-retinal cysts secondary to chronic cystoid macular oedema.[1] Incidence of TMH in close globe injury is 1.4% and in open globe injury is 0.15%.[2]

Due to the low incidence of TMH, currently, there are no standard clinical guidelines for the clinical characteristics, treatment, and prognosis of TMH.

The rate of spontaneous closure of TMH is reported to range from 10% to 67% [3].

Spontaneous closure has been reported to occur for small traumatic macular holes in young patients.[1,4]

II. Case Report

A 26 year old male patient presented to the ophthalmology OPD with chief complaints of redness , watering , pain in Left eye since two days following a fall while running on the ground .The patient had no complaints of diminution of vision , loss of consciousness , epistaxis or vomiting.

On examination, the best corrected visual acuity was 6/6 in right eye (RE) and 6/24 in left eye (LE). Intraocular pressure was 14mmHg in both eyes by non contact tonometer (NCT).

Anterior Segment Examination of the right eye was normal. On examination of LE, a 3mm lacerated wound was seen on lower eyelid, Subconjunctival haemorrhage in nasal bulbar conjunctiva was present. Traumatic mydriasis was present. Mild pigment dispersion was seen in the anterior chamber. No signs suggestive of corneal tear or phacodonesis were seen .

Posterior Segment Examination of RE was normal. In LE, a traumatic macular hole without retinal oedema was seen. There was no vitreous haemorrhage. No traumatic retinal holes, dialysis or detachment was seen in peripheral fundus examination.

Patient was advised for an OCT scan of the LE, centred on the fovea.

OCT on first visit: Optical Coherence tomography confirmed the diagnosis of traumatic macular hole (FIGURE 1). The patient was advised to instil Prednisolone 1% eye drop in tapering dose , Nepafenac 0.1% eye drop 3 times in a day .The patient was called for review after one week.

Figure 1

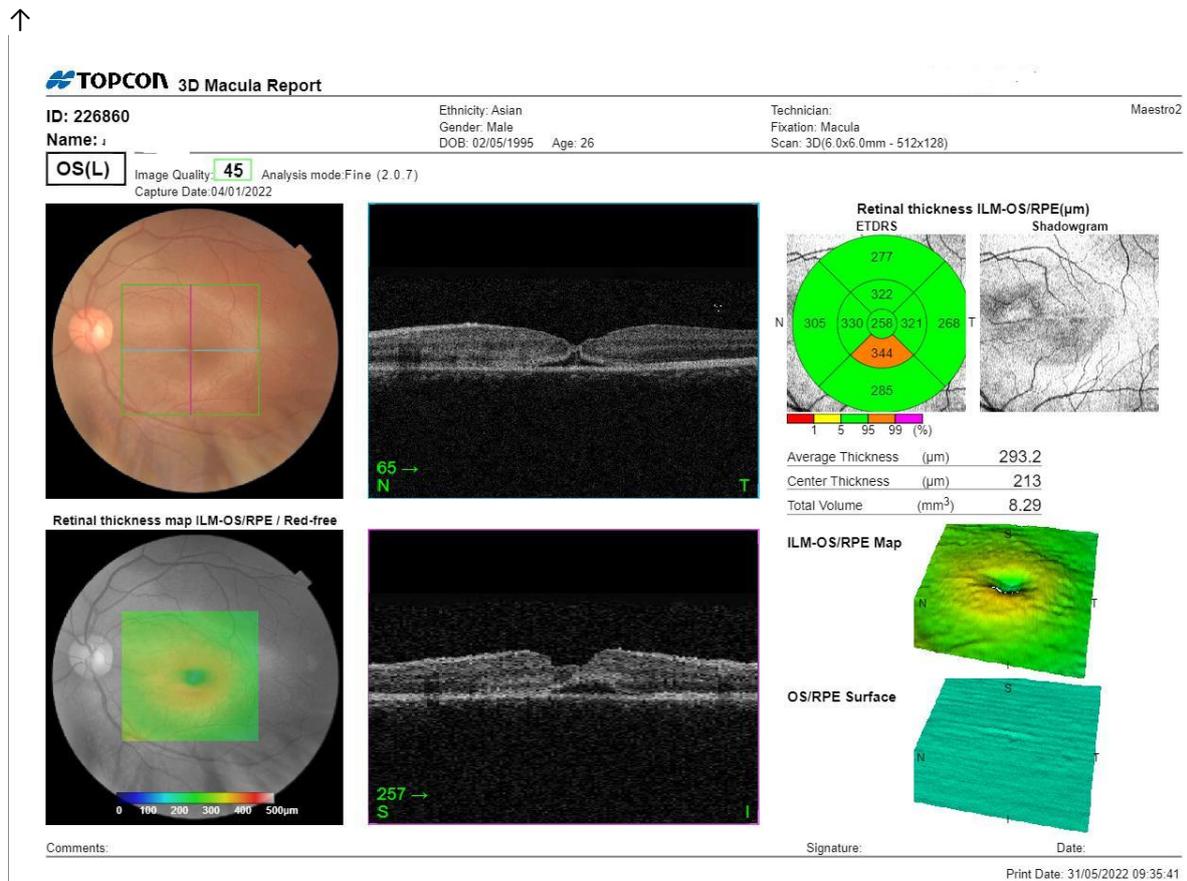


FIGURE 1: OCT of the Left Eye showing disruption of the EZ, ELM and ILM(yellow arrow) at the fovea. The central sub-foveal retinal thickness is 258 microns.

The patient did not show signs of visual deterioration at one week follow up. He was advised to continue the same treatment and review after three weeks.

At 1 month follow-up, BCVA of patient was 6/6 in RE and 6/12 in LE. Intra ocular pressure was 14mmHg in RE and 16mmHg in LE. On slit lamp examination RE was normal and in LE the lower lid laceration had healed with minimal scarring. Pupillary reaction was sluggish. Pigment dispersion was present in the anterior chamber. On fundus examination ,macular thinning was seen. Peripheral retinal examination was normal. OCT confirmed spontaneous closure of TMH with associated retinal thinning (FIGURE 2).

Figure 2:



FIGURE 2: OCT of Left Eye showing continuation of the inner retinal layers with disorganization of the outer retinal layers and closure of macular hole. The central sub-foveal retinal thickness is 185 microns.

On follow up visit at three months, BCVA was 6/6 in RE and 6/9P in LE . Intraocular pressure was 16mmHg in both eyes by noncontact Tonometry.

On slit lamp examination RE was normal . In LE pigment deposition was present over the anterior lens capsule. Fundoscopy revealed macular thinning with no macular hole in LE. Fundus examination in RE was normal.

III. Discussion

Traumatic macular hole may develop immediately following ocular trauma as reported in this case or several days or weeks after the injury .

Spontaneous closure is rare but it has been reported in young adults with small macular hole and also it is associated with good visual prognosis.

Faghihi et al [2] reported spontaneous closure in 6 cases after 1 to 6 months of follow-up in TMH cases

Miller et al. [4] advised 2- to 3-months of observation after Traumatic macular hole.

Chen et al. [5] reported a 37.0% rate of spontaneous closure and found that those macular holes that closed spontaneously had a small minimum diameter and fewer intraretinal cysts.

Extended observation beyond three months can decrease the chances of successful hole closure post vitrectomy .Therefore, the experience of spontaneous closure of TMH suggests that a period of observation before surgical intervention may be recommended for the management of TMH.

IV. Conclusion

Spontaneous closure is rare but it has been reported in young adults with small macular hole and also it is associated with good visual prognosis as in our case.

Serial clinical visits with OCT examination can help to monitor for chance of spontaneous closure of small macular hole and avoid surgical intervention.

Regular dilated fundus examination must also be performed to monitor development of peripheral retinal breaks and their management in the form of prophylactic barrage laser or retinal detachment surgery should be performed on a case to case basis.

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