

A Report on Bilateral Macular Hole in a 63-Year-Old Nigerian Male: Is Blunt Trauma the Cause?

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1. Case Report

A 63-year-old male presented to a private eye clinic with 1 week history of blunt trauma on the right eye. He was hit with a tight fist on the right eye by a soldier. He complained of pain, redness and photophobia in the right eye. Unaided visual acuity (VA) was 6/24 in both eyes which was improved with pinhole to 6/9 in both eyes. The right eye was injected with ciliary flush. Other ocular findings were unremarkable. He was treated as a case of traumatic anterior uveitis with topical steroid. However, 2 months later patient presented with sudden onset painless blurred vision in the right eye, with associated distortion in shapes and sizes of objects, no flashes of light, no floaters. He is a known myope and hypertensive on drugs with controlled blood pressure. He is not a known diabetic. Unaided VA in the right eye was 6/60, which worsened with pinhole to counting fingers at 1 metre. Unaided VA on the left eye was 6/24 which improved with pinhole to 6/18. Anterior segment findings were unremarkable except for mild lens opacities in both eyes. Dilated funduscopy revealed stage 3 macular hole with background mild retinal edema. Left fundus was essentially normal. He was referred to a vitreoretinal surgeon for further evaluation and treatment. He presented to the vitreoretinal surgeon 2 months after the onset of symptoms who noted he had bilateral lens opacities, stage 4 macular hole in the right eye and impending macular hole stage 1b in the left eye. Optical Coherence Tomography (OCT) was done which confirmed this (FIG. 1). One month later, he had phacoemulsification + intraocular lens and macula hole surgery (inverted flap technique) in the right eye. The procedure was well tolerated, and postoperative findings revealed closed macula hole and flat retina in the right eye. Patient remained stable in his subsequent follow-up visits and no longer sees distorted images. His unaided VA post-operatively in the right eye were counting fingers at 3 metres after 3 weeks and 6/36 after 1 year with no improvement with pin hole while the VA in the left eye has remained the same.

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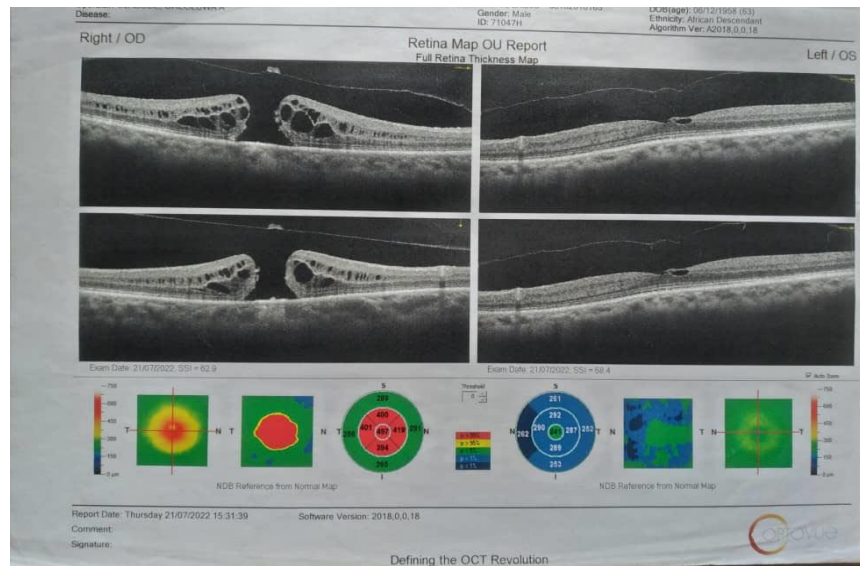


FIG. 1. OCT of the index patient showing full-thickness stage 4 macular hole in thr right eye and impending stage 1b macular hole on the left eye.

2. Discussion

Macular hole causes debilitating visual symptoms including decreased central vision, metamorphopsia and central scotoma. A macular hole is a full-thickness or partial-thickness defect in the macula region [1]. Its pathogenesis is mostly idiopathic but may result from trauma or other causes. A study by McCannel et al showed that 91.5% cases of macular holes were idiopathic while non-idiopathic causes accounted for 8.5% (8 eyes) [2]. Non-idiopathic macular holes were attributed to the following aetiologies: three occurred after retinal detachment repair, two secondary to trauma, one after macular translocation surgery and one after unspecified eye surgery [2]. The index patient developed full-thickness stage 4 macular hole on the right eye and impending macular hole stage 1b on the left eye although he had blunt trauma to the right eye only prior to the onset of symptoms. Thus, the cause of his macular hole could either be traumatic or idiopathic. Or it could be that he had idiopathic impending macular hole on the right eye as well before the trauma which was then worsened by the trauma.

Some holes can close spontaneously. Reported spontaneous closure rate of all idiopathic full-thickness macular hole range from 3% to 15% and no demographic subgroups are more likely to have closure [3]. Holes $\leq 250 \mu\text{m}$ have higher closure rates (22.2%) than those in the range of $>250 \mu\text{m}$ to $400\mu\text{m}$ (13.3%) and $\geq 400 \mu\text{m}$ (0%) [3]. The index patient had full-thickness stage 4 macular hole with reduced chances of spontaneous closure, thus necessitating the surgery. Surgery for macular hole has developed greatly over the years with improvement in the closure rate and visual recovery [4]. Peeling of internal limiting membrane has become a standard surgical procedure in the management of macular holes [1]. It is known that traction from internal limiting membrane contributes to macular hole development, therefore relieving this traction during surgery is very important for successful surgery [5].

Jaycock et al found that the duration of preoperative symptoms, indocyanine green-assisted internal limiting membrane peeling, hole stage and better preoperative VA were associated with both anatomical success and regaining a postoperative VA of 6/12

or better [6]. Closure rate in patients undergoing surgery within 1 year of onset was 94.0% and 47.4% in those having surgery after 1 year [6]. The index patient had surgery within 1 year of onset of symptoms with some improvement in his VA to 6/36 despite having poor preoperative VA of CF at 3 metres and full-thickness stage 4 macular hole.

3. Conclusion

Macular hole causes significant visual disturbances. It could be idiopathic but can also be caused by trauma which is avoidable. Although some holes may close spontaneously, but early surgery in addition to other factors such as preoperative VA and stage of the hole could lead to improvement in vision postoperatively.

4. Conflict of Interest

None

5. Informed Consent

A written informed consent was obtained from the index patient before embarking on this write up.

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