Some holes need no peeling: a case report of spontaneous closure of macular hole in a case of treated rhegmatogenous retinal detachment

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Introduction
Full thickness macular hole (FTMH) formation is caused by tangential vitreous tractions¹ and anteroposterior tractional components.²,³ Surgical intervention includes vitrectomy with or without peeling of the inner limiting membrane (ILM) to relieve these tractional forces.⁴ Several small case series have described FTMH formation after vitrectomy for rhegmatogenous retinal detachment (RRD).⁵,⁶ In these vitrectomized eyes, the mechanism actually responsible for the formation of FTMHs remains unclear. We present a case of FTMH that developed in an eye after vitrectomy for RRD and its spontaneous closure.

Case Report
A 56-year-old man presented with RRD in his left eye with a best-corrected visual acuity (BCVA) of 20/800. On examination, total RRD with multiple horseshoe tears were seen in the temporal and inferior quadrants. He was advised and subsequently underwent vitrectomy with encirclage and silicone oil tamponade for the same. Four weeks post-operation, he had an attached retina with a BCVA of 20/100. He was scheduled for a second operation for silicone oil removal (SOR), when he reported with a sudden drop in vision in his left eye with a BCVA of 20/200. Examination revealed an attached retina with an FTMH.

Optical coherence tomography (OCT) of the left eye showed a small (<200 µm) FTMH (Figure 1). SOR and ILM peeling with C3F8 tamponade was planned for the same. However, the patient presented with an improved BCVA of 20/40 in his left eye after a month. OCT (Figure 2) revealed a spontaneous closure of FTMH with outer retinal defect at fovea.

Discussion
Based on clinical, histopathological and OCT studies,²,³ it has been argued that FTMH formation is a result of tractional forces between the vitreous and retina. There are several small case series describing the development of FTMH after vitrectomy for RRD in the literature with a prevalence rate between 0.9 and 1.1%.⁷,⁸ In such cases, a possible mechanism of action could be direct traction on the macula during the vitrectomy for RRD.⁸ Further aetiologies include vitreoschisis and traction caused by epiretinal membrane (ERM). In the absence of cortical vitreous, another factor that may cause tangential traction leading to MH formation is the ILM.⁹ Our case had ILM striae as was demonstrated in the OCT (Figure 2).

ILM peeling, in these cases, has become the mainstay treatment for the repair of FTMHs, with better visual and anatomical success compared without ILM peeling. Spontaneous closure of FTMH was described previously in the presence of ERM; however, this phenomenon is considered to be rare.¹⁰,¹¹ We believe that a small FTMH in a vitrectomized eye, such as ours, can be observed for some time before an intervention.

Figure 1: A small FTMH (<200 µm) (white arrow). Oil meniscus (white arrow head) can be seen.
Conclusion

This case report has its limitations. Larger cohort studies are needed to delineate the ways in which FTMH behaves in post vitrectomized eyes. In summary, this report demonstrates that a small FTMH that may develop after vitrectomy for RRD can be observed for some time as it may close spontaneously. The pathogenesis of the formation of the holes in the absence of intact vitreous still remains unclear.

References


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