The Effect of COVID on Macular Hole Outcomes - Have We Waited Too Long?

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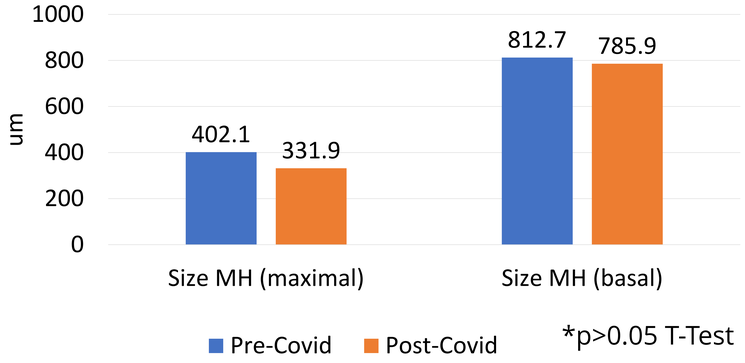
Introduction

Macular hole (MH) is a central defect in the fovea which causes significant vision impairment.[1] Macular hole repair outcomes depend on preoperative visual acuity (VA) and duration of symptoms.[1] We aimed to investigate the impact of Covid on MH repair outcomes by comparing our department's results in pre and post COVID first lockdown periods to national results[2].

Methods

Inclusion criteria were full thickness macular hole stage 2, 3, and 4 that were operated at Royal Berkshire NHS Foundation Trust in either of two periods: 1) from March 2019 to mid March 2020 before first lockdown 2) from June 2020 to first week of May 2021. The private patients and cases with insufficient data were excluded. The cases were identified from electronic medical records retrospectively. The primary outcomes were median change in VA from baseline and visual success rate defined as proportion of eyes gaining at least 2 Snellen lines of VA (equivalent of 0.3 or more LogMAR gain). The secondary outcomes were MH closure rate and complication rate. The results in each period were compared with national ophthalmology database (NOD) study[2] outcomes.

Figure 1. Mean size of MH based on maximal and basal diameter in pre and post Covid



Results

54 eyes of 53 patients in pre-Covid and 50 eyes of 49 patients in post-Covid were identified. The median age of patients were 69.5 (pre-Covid) and 67 (post-Covid). The male: female ratio was 2:1 (pre-Covid) and 1.8:1 (post-Covid).
The median duration of symptoms was 5 months (4-8) in pre-Covid and 5months (3.25-10) in post-Covid. In pre-Covid, 94% cases were idiopathic and 6% were trauma-related. In post-Covid, all cases were idiopathic.
There were no statistical differences in the median size of macular hole in pre and post-Covid periods (Figure 1). All cases had pars plana vitrectomy with ILM peeling. C2F6 was the most commonly used gas tamponade in all periods. 29.6% of pre-Covid, 12% of post-Covid, and 40.5% of NOD cases had combined procedures with phacoemulsification.
The median BCVA has improved 6 months after MH repair in all three groups although there were no statistical differences in pre-operative and post-operative BCVA among the groups (Figure 2). The visual success rates at 3 months in pre-Covid and post-Covid were lower than in NOD (Figure 3).
The complication rates in both periods were similar to NOD (Table 1). There were no differences in MH closure rate in two periods (Figure 4).

Figure 2. Median BCVA (LogMAR) in pre-operative, 3 months and 6 months post-operative periods

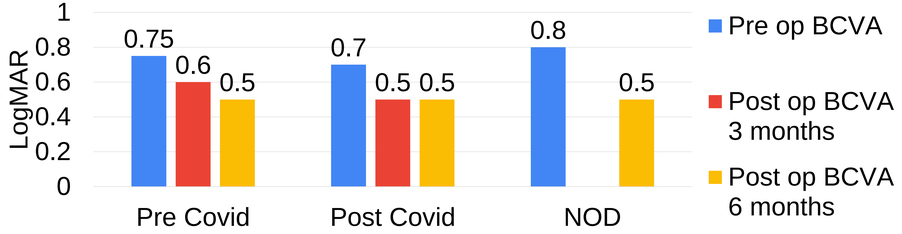


Figure 3. Visual Success (≥ 0.3 LogMAR Gain) at 3 months after MH repair (%)

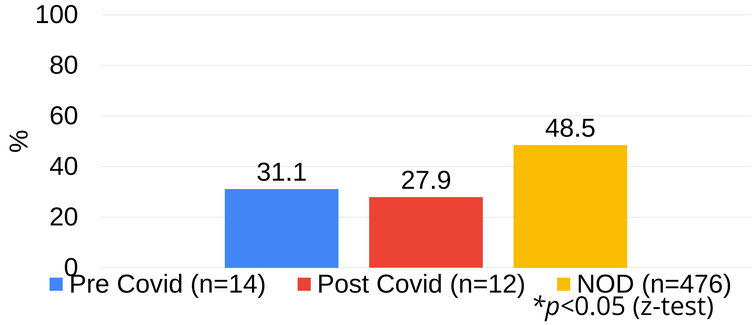


Figure 4. MH closure rate (%)

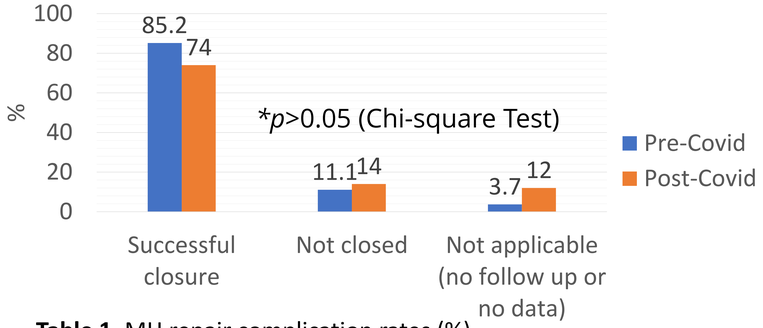


Table 1. MH repair complication rates (%)

n (%)	Pre-Covid	Post-Covid	NOD
No complications	45 (83.3%)	44 (88%)	944 (87.6%)
High IOP	3 (5.5%)	5 (10%)	0
Uveitis	2 (3.7%)	0	0
Retinal tear	2 (3.7%)	1 (2%)	74 (6.9%)
Choroidal haemorrhage	1 (1.9%)	0	4 (0.4%)
Complicated phaco	1 (1.9%)	0	0

Conclusions

There were no differences in MH repair outcomes before and after first Covid lockdown. Our results in both periods were comparable to NOD results apart from visual success rate at 3 months after surgery.

References

1. Guzel Bikbova et al, "Pathogenesis and Management of Macular Hole: Review of Current Advances", Journal of Ophthalmology, vol. 2019, Article ID 3467381, 7 pages, 2019.
2. Jackson et al. United Kingdom National Ophthalmology Database study of vitreoretinal surgery: report 2, macular hole. Ophthalmology. 2013 Mar;120(3):629-34. doi: 10.1016/j.ophtha.2012.09.003. Epub 2012 Dec 1.