# The implementation of postoperative day 1 vitrectomy telephone follow-up consultations

BY RUBINA RAHMAN AND NOSHEEN KHAN

In this pre-COVID-19 study, the authors argue that some follow-up consultations can be done by telephone without compromising patient safety.

Thirty years ago, a study by Isernhagen et al. [1] found that 52% of patients required some form of unexpected intervention in the immediate postoperative period and has defined the standard of care ever since, namely that all patients undergoing vitreoretinal (VR) surgery should receive a postoperative day 1 (POD1) examination.

With retinal practices growing in size, surgeons are often in a different location on each day of the week. This increases both the economic and personal burden on the patient and their family or caregivers having to travel to be seen by their operating surgeon. Early intervention for VR pathology and increasing indications for vitrectomy has further added to the burden of POD1.

Elevated intraocular pressure (IOP) is one of the three early complications of concern after VR surgery, the other two being wound leakage and endophthalmitis. The means of identifying these complications is at the initial postoperative examination [2], thereby allowing prompt treatment.

The purpose of this retrospective case series is to determine whether POD1 telephone consultations would help to identify patients who may have developed complications such as raised IOP or infection after undergoing a vitrectomy. Using a series of indirect questions enquiring about vision, pain and nausea / vomiting; would this reduce the burden on clinics?

## Methods

From November 2016 to September 2018, the surgical cases of a single surgeon, the author (RR), were reviewed using the Medisoft electronic database. Informed consent from patients participating in this study was not required as the data collection was anonymous. The hospital research and development department looked at the study protocol and concluded that ethical approval was not needed, as the study was retrospective in nature and did not affect the standard of care for patients.

Patients received POD 1 telephone calls whilst at home from nursing staff working in the Eye Clinic Department in Calderdale Royal Hospital. Three specific questions were asked. 1) Is there any eye pain? 2) Is there any nausea or vomiting? 3) Can you see your own hand moving at reading distance? If the patient's vision was hand movements, with absent / mild pain, and no nausea / vomiting then the patient was deemed suitable for their planned VR clinic follow-up. Answers of moderate to severe pain or nausea / vomiting or vision less than hand movements would warrant a discussion with the VR team.

## Results

Ninety-three patients were identified – 32 males and 51 females. Sixty-seven were phakic and the remaining 26 were pseudophakic. All 93 patients underwent pars plana vitrectomy. In terms of the type of tamponade used, 57 had air, 18 had SF6, 16 had C2F6 and 2 had C3F8.

Forty-eight (52%) had surgery for epiretinal membrane peel (ERM), 22 (24%) for macula hole (MH) repair and 23 (25%) were miscellaneous (Misc.). The Misc. group consisted of five cases for removal of silicone oil (ROSO), 14 cases of vitrectomy for floaters and four for vitreomacular traction (VMT).

The ERM group were seen an average of 5.3 days postoperatively (range 2-21 days) with an average IOP of 16.4mmHg (range 4-30mmHg). The MH group were seen an average of 6.4 days postoperatively (range 2-30 days) with an average IOP of 19.7mmHg (range 10-34mmHg). The Misc. group were seen an average of 3.7 days (range 2-7 days) postoperatively with an average IOP of 15.81mmHg (range 10-20mmHg).

Two out of the total 93 patients reported vomiting on the telephone review and were therefore seen at POD1. Their IOPs were 30 and 24mmHg respectively. Both of them had surgery under general anaesthetic (GA) the day before. This equates to 2.1% of the total number of patients in the case series.

Two other patients were incorrectly booked for POD1 reviews due to administration errors. Only one patient failed to answer the telephone call.

All postoperative clinic appointments after the telephone review were aimed for four to seven days after surgery. However, a few patients were not seen until 25-30 days postoperatively. This coincided with the implementation of a new electronic patient record (EPR) in the Trust, which may have accounted for the appointments not being made in a timely manner.

## Discussion

At 2.1%, our intervention rate is low, but it is difficult to know how low the intervention rate needs to be before abandonment

**Table 1: Our results.**

| | ERM 61 (46%) | MH 34 (25%) | Misc 36 (27%) |
|---|---|---|---|
| POD No. | 2-21 (~5.3) | 2-30 (~6.4) | 2-7 (~3.7) |
| IOP mmHg: | 4-30 (~16.4) | 10-34 (~19.7) | 10-20 (~15.81) |
| All groups IOP: ~ 16.7mmHg | | | |

of the POD1 visit is considered to be safe and good practice.

Precedence can be taken from cataract surgery to provide some guidance. When cataract surgery transitioned from extracapsular cataract extraction to phacoemulsification, the POD1 intervention rate after routine phacoemulsification was noted to be around 3% which was deemed sufficiently low to justify the omission of the POD1 visit [3,4]. It has been suggested by Allan et al. [5] that the visit is probably unnecessary if the intervention rate is <5%. POD1 visits would only provide mutual reassurance for both the patient and the surgeon.

Why this has not been applied to VR surgery is most likely due to the poor visual acuity in the immediate postoperative period from the tamponade. However, the next day telephone consultation can address this issue and provide appropriate reassurance, as well as allowing reinforcement of posturing instructions.

IOP is a major concern, with previous studies suggesting the use of prophylactic anti-glaucoma treatment prior to surgery on the basis of observed elevated postoperative IOP [6].

An in-house observational study published in 2017 by Rahman et al. looked into the risk factors for elevated IOP on POD1 [7]. None of the patients had prophylactic anti-glaucoma medications immediately after surgery. Out of a final cohort of 161 patients, 6% had a raised IOP (maximum IOP of 39mmHg). No strong correlation between raised IOP and the type of gas tamponade, in particular C2F6 was shown. It therefore does not constitute justification for pre / postoperative anti-glaucoma prophylactic treatment.

The same study also showed a moderate association, however, with the number of laser burns. That study helps to inform clinicians as to which patients may not require POD1 follow-up reviews. Not all cases need review and stratification was necessary. Our aim was therefore to target those low risk (ERM, MH, ROSO, floaters and VMT) patients compared to the high-risk rhegmatogenous retinal detachments (RRD) / complex diabetic patients requiring cryotherapy or laser.

Another study by Muether et al. observed a 29.5% elevation in IOP in the first 24 hours after VR surgery [8]. The majority of these cases used a 20G vitrectomy. In this case series, 27-gauge un-sutured ports were used for vitrectomy, which may have lowered the incidence of elevated IOP observed on the POD1. The modernisation of VR surgery in using small gauge suture-less surgery is associated with a reduction in the incidence and magnitude of postoperative IOP changes when compared to conventional 20-gauge vitrectomy [9].

With the two patients reporting vomiting on the telephone review, the IOPs were not particularly elevated, but the question regarding nausea / vomiting is important to differentiate between it being GA-related or due to an IOP rise. Next day telephone consultations in this case series have shown to avoid POD1 reviews in uncomplicated VR patients. Thus reducing the burden on ward rounds and avoiding unnecessary journeys for elderly patients.

Ophthalmic nursing staff can have a role in reinforcing patient education regarding postoperative care, warning symptoms and reduce patient anxiety over the POD1 telephone consultation. The patient or carer should be able to communicate well for this to be implemented. Severe hearing problems and language barriers would need to be addressed preoperatively so that alternative plans can be made.

Many surgical specialists see their postoperative patients many days to even weeks after uncomplicated orthopaedic, plastic, urologic, dental, gynaecologic or general surgical procedures depending upon the procedure performed. The current standard for VR surgery is a POD1 examination. Series such as this one will hopefully gradually shift the standard of care in a more patient-friendly direction without compromising on patient safety.

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