Immediate surgery recommended for unexplained fundus-obscuring vitreous haemorrhage at presentation:

Anatomical and visual outcomes in patients attending the Vitreoretinal Emergency Clinic

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1 Overview

Definition of unexplained vitreous haemorrhage at presentation:

No known plausible cause e.g. trauma, ischaemia (proliferative diabetic retinopathy) or choroidal neovascularization

Clinical considerations

- One of the main differential diagnosis is a haemorrhagic posterior vitreous detachment, which is strongly associated with retinal breaks[1]
- Unfortunately, screening with B-scan ultrasound offers low sensitivity, translating in a high chance of missed breaks during observation[2]
- Dense vitreous haemorrhage in the presence of retinal breaks is a risk factor for proliferative vitreoretinopathy (PVR)– main cause of failure after retinal detachment (RD) repair[3]
- Currently, there is still no clear consensus about the optimum management for these cases

Research Question

Should we operate soon and when would the ideal timing be?

2 Materials & Methods

Methodology

Retrospective records review of consecutive adults undergoing immediate pars plana vitrectomy (within 24 hours of presentation) for unexplained fundus-obscuring vitreous haemorrhage, from January 2018 to January 2019

Exclusion criteria

- Anticoagulation intake
- Ocular trauma
- Wet age-related macular degeneration
- Proliferative retinopathy of any aetiology
- Anterior segment neovascularization
- Posterior uveitis
- Ocular tumours
- Recent intraocular procedures
- History of RD surgery

Primary outcomes

- Rate of associated retinal tears and RD
- Change in visual acuity
- Rate of reoperation

3 Results: 89 patients, 57% ♂, mean age 63 (range 43-89)

Intraoperative findings

80% rate of retinal tears
(Including 20% rate of concomitant macula-on RD and 0% rate of PVR)

B-scan ultrasound diagnosed only half of these breaks preoperatively

Odds ratio = 0.84 for baseline RD in younger patients [95%CI:0.78-0.93], p<0.001

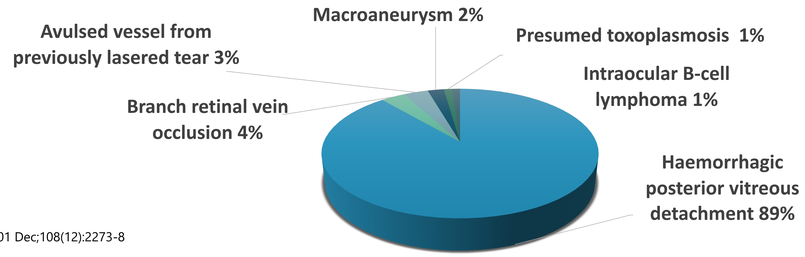
Postoperative findings

Visual improvement (LogMAR):
- Baseline mean 1.55 (±0.76)
- Final mean 0.16 (±0.28) (p <.001)

Reoperations:
- 3 cases of macula-off RD within 2 months of first surgery
- PVR Grade ≥B in all cases

Major complications:
- No cases of endophthalmitis or suprachoroidal haemorrhage

Final diagnosis after vitrectomy



4 Conclusions

Immediate surgery led to significant visual improvement and good anatomical outcomes

Younger age conveyed a greater risk of concurrent RD at baseline

Limitations

There was no control group for comparison

Take Home Messages

An unexplained fundus-obscuring vitreous haemorrhage at presentation is associated with a high rate of underlying sight-threatening retinal pathology

Early operation prevents the development of retinal detachment with PVR

Consider urgent referral to the Vitreoretinal Clinic

References:
1. Sarrafizadeh R et al. Incidence of Retinal Detachment and Visual Outcome in Eyes Presenting with Posterior Vitreous Separation and Dense Fundus-obscuring Vitreous Hemorrhage. *Ophthalmology* 2001 Dec;108(12):2273-8
2. Rabnowitz R et al. Comparison between clinical and ultrasound findings in patients with vitreous hemorrhage. *Eye.* 2004 18, 253–256
3. Yeung L et al. Association between severity of vitreous haemorrhage and visual outcome in primary rhegmatogenous retinal detachment. *Acta Ophthalmol.* 2008 Mar;86(2):165-9

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