Visual outcome after posterior capsule rupture and vitreous loss following cataract surgery at Prince Charles Eye Unit – A 3-year Retrospective Study

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Introduction

Cataract extraction is the most commonly performed surgery by the National Health Service (NHS) and there are well established complications both intra-operatively and post-operatively.
The most recorded intra-operative complication during phacoemulsification is posterior capsule rupture (PCR) with or without vitreous loss published by Royal College of Ophthalmologists' National Ophthalmology Database (RCOphth NOD).
We performed a retrospective study evaluating the visual outcome of PCR during phacoemulsification at Windsor 2015-2017.

Methods

All phacoemulsification for cataract extraction were exported from Medisoft between 1st January 2015 and 31st December 2017, and all cases with PCR or zonule dialysis (ZD) were identified.
Primary outcome was to evaluate the visual outcome by using the latest recorded post-operative visual acuity (VA). Mann-Whitney U test was used to compare with the control group, which includes the rest of the cataract cases over the same period of time.
Secondary outcome includes the number of cases required further surgeries, and post-operative complications of endophthalmitis and retinal detachments.

Results

Between 2015-2017, the unit performed 5884 cases of cataract surgery, 177 of them had PCR or ZD (1.99%) [Table 1 and 2, Fig 1].
Mean VA pre-operatively in PCR/ ZD and control groups were 0.77LogMAR (95% CI, 0.64–0.90) and 0.55 LogMAR (95% CI, 0.54– 0.56) respectively (P=0.007); mean VA change were 0.36 LogMAR and 0.40 LogMAR for PCR/ ZD and control groups (p=0.006) [Fig 2 and 3].
Seventy-nine percent of patients had improved VA after operation in the PCR/ ZD group, and 88% in the control.
Twenty-five cases in the PCR/ ZD group had second operations, five with third operations.
There were two cases of retinal detachment and zero endophthalmitis.

Table 1. PCR and ZD cases

	Number	Worse VA	Same VA	Better VA
2015 PCR cases	31	7	3	21
2016 PCR cases	32	4	0	28
2017 PCR cases	35	8	0	27
Zonule dialysis	19	2	1	16
Total	117	21 (18%)	4 (3%)	92 (79%)

Table 2. PCR and ZD cases

	Number	Worse VA	Same VA	Better VA
Non-PCR/ZD cases	5767	302 (5%)	302 (7%)	5065 (88%)
Total phaco cases	5884			
PCR/ ZD rate	1.99%			

Conclusion

PCR/ ZD group has a significant poorer VA to begin with compared with control, but majority of patients have improved VA after operation. Therefore, we conclude that cataract surgeries complicated by PCR or ZD have a good visual outcomes, although a fifth of cases need further surgery to achieve this.

Figure 1. Proportion of PCR/ ZD cases between 2015 - 2017

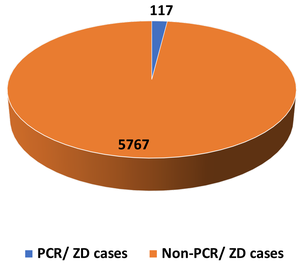
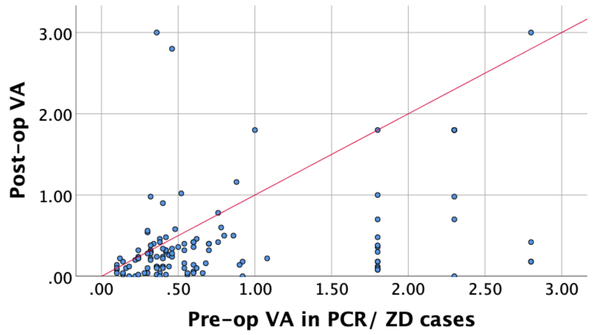
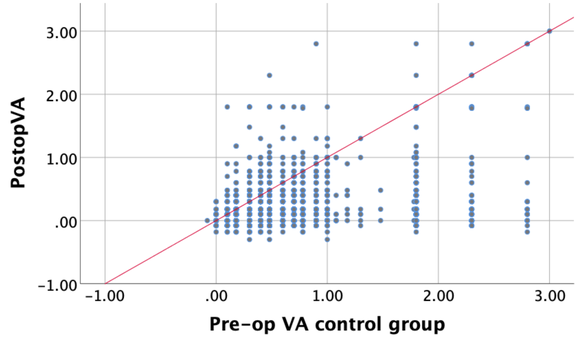


Figure 2. VA change in PCR/ ZD cases



Below red line: patients with better VA post-op

Figure 3. VA change in control group



Below red line: patients with better VA post-op

References
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