

Comparing rates of posterior capsule opacification formation after cataract surgery for two commonly used intraocular lenses

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Introduction

Posterior capsular opacification (PCO) is the migration and proliferation of lens epithelial cells on the posterior capsule and is a common occurrence following cataract surgery. Multiple factors are believed to influence PCO formation: the design of the optic, *Fig.1*, portion of the intraocular lens (IOL) implanted during cataract surgery is thought to have a significant influence on subsequent PCO formation.

At the Hull Eye Hospital (HEH) the majority of cataract surgery cases are performed using one of two IOL implants, the Zeiss CT Asphina and AMO Tecnis PCBOO. IOL choice is typically surgeon dependant and based on personal preference and clinical assessment of the patient.

We aim to compare rates of PCO development between these two commonly used IOLs.

Methods

A total of 31 patients who attended the laser clinic for Nd:YAG Laser Capsulotomy for PCO following cataract surgery at HEH were included. Time interval between lens implantation and YAG laser clinical appointment, type of PCO (fibrous or pearl type), *Fig.2*, and severity of PCO (mild, moderate, severe) were recorded.¹ Severity was assessed clinically by the surgeon performing the laser capsulotomy.

Nd:YAG laser capsulotomy is a non-invasive technique to clear PCO from the visual axis, performed as a day case local anaesthetic procedure in an outpatient clinic setting.

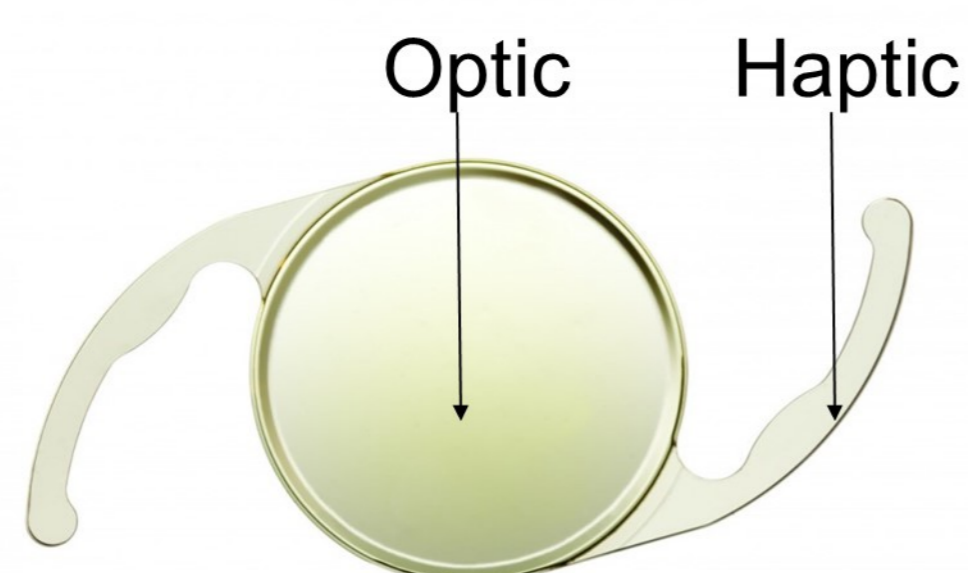


Figure.1. Intraocular lens structure



Figure .2. Posterior capsular opacification types.

Results

Of the 31 eyes collected, 52% of patients (n=16) had the PCBOO lens implant and 48% (n=15) the CT Asphina implant. The mean time interval for development of PCO (months between IOL insertion and YAG-laser) in the PCBOO group was 36.25 months, whilst in the Asphina group it was 36.6 months.

In the PCBOO group 7 patients developed fibrous type-PCO, 8 developed pearl-type PCO and 1 patient mixed pearl-fibrous type. All of the fibrous PCO patients were classified as mild, those who developed pearl-PCO, 5 were classed as mild and 3 as moderate.

In the Asphina group, 13 patients developed pearl-PCO and 2 developed fibrous-PCO. Of the pearl-type group 5 were classed as mild and 8 were moderate. Of the fibrous-type one was mild and one was moderate.

Discussion

The Asphina lens appears to show a greater rate of pearl-type PCO which was generally more advanced. More advanced PCO development occurred with the Aphina lens compared with PCBOO over a similar time course. The reason for the difference may be due to optic design, with the PCBOO having a squarer edge to the optic, which has been shown to be associated with reduced rates of PCO development in previous studies.²

We plan to validate our results with six months of retrospective data of patients attending for YAG laser capsulotomy. The outcomes of the audit may allow our department to better understand how lens selection can influence PCO development and allow for better informed pre-operative planning.

References

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