Introduction

Some authors have noticed that a filling of the capsular bag with any material ranging from a rigid optic design to a soft material may reduce PCO. This may occur because the material fills the intralenticular space instead of the opaque material.

This has been seen in animal models and in laboratory experience, but has been rarely shown conclusively in clinical studies.

We have recently made several observations of eyes containing Ridley lenses that ideally demonstrate that this "No space - No cells" concept is correct!

Barriers to LEC growth and proliferation

Most authors think in terms "edges", including both the edge of the IOL-optic and also the more recently described "enhanced edge" of "Amon-Apple". The latter is being incorporated specifically to provide protection against PCO over the haptic-optic junction.

6 Factors to Reduce PCO

1. In-the-bag fixation
2. Hydrodissection – Enhanced cortical clean-up
3. Small CCC with edge on the IOL surface

Introduction to ProTECTM 360° Edge

The concept of: No Space – No Cells

Less attention has been given to the concept "No space – No cells", namely the idea of pressure from a bulky in the bag lens on a broad area of the posterior capsule.

Again an idea which began with Harold Ridley in the 1950s. This idea was studied in the 1990s by the Apple Korps team (Apple, Auffarth, Tetz et al.)

Financial Disclosure

I have no financial or proprietary interest in any of the products mentioned!

Andreas F. Borkenstein, MD

In 1999 Apple et al. suggested 6 factors that were important in reduction PCO. In this presentation we will focus on the concept of a barrier effect against PCO.
We have recently received photographs of the eye of a patient with a Ridley Lens, provided by Dr. Dan Reinstein (London, UK). This specimen is very interesting from many viewpoints. These include:

1. Historical viewpoint: This specimen is a case of a Ridley lens implanted 57 years ago in London by Ridley himself! This has to be one of his very early cataract-IOL operations.

2. Longest term follow-up of any lens to date: This implant has rested in the eye for 57 years without complications and still counting. This is by far the best example of the concept of “No space-No cells” that exists.

3. We will soon discuss a new lens manufactured by Advanced Medical Optics AMO, their Tecnis 1 hydrophobic design validates how this concept can be applied without the need to actually incorporate a bulky “disc-type IOL”.

Clinical Findings of an 81 year old patient. Lens was implanted by Ridley himself in 1952

57 Years Follow-up!

Examination, 2008: Follow-up by W.Ayliffe and D.Reinstein

- There was no decentration!
- There were delicate fibrills on the anterior capsule but NO PCO!

In all cases the lenses were absolutely perfectly centered. There was no place for the lens to move!

Furthermore, the visual axes were clear because of the presence of the intraocular lens which hindered growth of cells from the periphery of the optic towards the center, thus preventing cataract formation.

What have we learned from these? In addition to its historical value, we have verified the validity of “No space - No cells”, and more specifically we can demonstrate this concept in a practical way.

Please observe the application of this principle on the recently launched hydrophobic AMO-Tecnis 1 – design:

References:
** Apple DJ, Sir Harold Ridley and his fight for sight, 2006, Slack Inc.
Conclusions

We have presented 5 cases, including one for the very first time, where Ridley lenses have been in place for up to 57 years, with no evidence of secondary cataract (PCO) formation in any of these eyes.

This is by far the longest documented survival of a “healthy IOL” We have never seen such stellar results in other lens styles.

This is strong and clinically significant evidence that the presence of a disc-shaped IOL filling the capsular bag can block growth of cataractous material.

This verifies the concept of ‘No space – No cells’!