



ORIGINAL RESEARCH PAPER

Ophthalmology

VISUAL OUTCOME OF PTERYGIUM SURGICAL EXCISION WITH SIMULTANEOUS PHACOEMULSIFICATION WITH PCIOL IMPLANTATION IN DR SALEH ABBAS SPECIALIZED POLYCLINIC ALBAHA –KSA BETWEEN 2005 -2015

KEY WORDS: Pterygium, phacoemulsification, IOL (intraocular lens)

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ABSTRACT

Pterygium is known to induce refractive astigmatism which can affect the outcome of cataract surgery. Benefits of simultaneous pterygium and cataract surgery are single procedure, reduces cost on the patients and decreases morbidity.

Objective: evaluation of visual improvement in pterygium surgical excision with phacoemulsification plus IOL implantation.

Results: one hundred and three files were included in this study with 14.4 months mean duration of follow up. most of the patient were old patient; 60 year or above (64.7%). mean visual acuity before surgery was 20/200 improved to 20/60 on the first follow up day and there was further improvement to 20/40- in the last follow up visit.

Conclusions and recommendation: simultaneous pterygium and phacoemulsification plus IOL implantation improves the patients visual acuity by reducing astigmatism and reduces cost on the patients. more studies are needed to evaluate pterygium effects on IOL calculation and corneal topography.

Introduction

Pterygium is a triangular growth of vascularized fibroelastic tissue that arises from the limbic conjunctiva and extends over the cornea replacing the Bowman's membrane and corneal epithelium¹.

The extent of visual impairment depends on its growth across the visual axis². Pterygium is common in tropical countries³.

Cataracts also tend to occur at an earlier age in tropical countries such as India⁴. It is not surprising that many patients coming for cataract surgery are also found to have an associated pterygium².

Simultaneous or sequential surgery for pterygium and cataract?

The proponents for simultaneous surgery would cite reasons such as single versus two procedures, reduced cost, and decreased morbidity⁵. In situations where one is dealing with a patient population that is remote from health care delivery services, these arguments may be valid¹. Yet, there are many factors that favor a sequential rather than simultaneous surgery⁴. Pterygium is known to induce refractive astigmatism which can affect the outcome of the cataract surgery⁵.

Though there is no consensus, it is logical that any pterygium that interferes with the keratometric readings should be removed before the cataract surgery². Highly vascularized, inflamed, active, and elevated pterygia are likely to induce a change in the corneal shape⁶.

Though not uniformly predictable, pterygia that are 3 mm or more tend to cause distortion of the keratometric readings⁴. Accurate and stable keratometry is crucial in avoiding postoperative refractive surprises⁷.

Pterygium excision when combined with cataract surgery or performed after the cataract surgery would alter the keratometry values of the cornea which were used for the biometry⁷. Eyes with pterygia often induce a corneal astigmatism which reverses on excision⁷. Large pterygia extending on to the visual axis would undoubtedly have to be removed before planning any cataract surgery⁷. Long standing and atrophic pterygia cause scarring and the astigmatism induced by these may not be fully reversed even after excision. Ideally one should wait for 6–8 weeks after pterygium excision before planning cataract surgery⁸.

A simplified sequence for planning cataract surgery in patients with coexisting pterygium is as follows^{7,9}:

- *Size of pterygium on slit-lamp examination:* Primary excision of any pterygium equal to or more than 3 mm.
- *Irregular mires on keratometry:* Plan pterygium excision prior

to cataract surgery.

- *Uneven or irregular central curvature or high corneal astigmatism:* Consider primary excision of the pterygium.
- *Small pterygia near the limbus, good mires on keratometry, regular central curvature on topography, low or absent astigmatism.* Proceed with cataract surgery before pterygium excision.

MATERIALS AND METHODS

Objectives:

General objectives:

To evaluate the outcome of visual outcome of surgical excision of pterygium plus phacoemulsification and PCIOL.

Specific objectives:

To evaluate visual acuity improvement in first and last follow up following pterygium excision plus phacoemulsification.

Hypothesis:

Excision of pterygium plus phacoemulsification can improve vision due to removal of cataract in addition to decrease of corneal astigmatism by removing the pterygium.

Problem statement:

Pterygium can affect intraocular lens calculation. And it may be accompanied with spheroidal degeneration of the cornea. Even after excision of the pterygium there will be dryness and residual corneal opacity.

Study type:

This was a hospital based clinical retrospective observational study.

Study area:

Dr Saleh Abbas specialized polyclinic is the first specialized polyclinic for ophthalmology in southern part Saudi Arabia. In Albaha city; the capital of Albaha area in Kingdom of Saudi Arabia. And it is one of the first clinics in Saudi Arabia started day surgery in nineteen nineties. This polyclinic started in 1996. It consists of six outpatient clinics and three operation theatres and one of them is for refractive surgery. In addition, there are YAG, Argon, and multipattern laser machines. And also there are three corneal topographic machines. Nineteen thousand patients visit this clinics per year. And hundreds eye surgeries are done per year. Study population:

Patients underwent pterygium excision plus phacoemulsification in the period 2005 to 2015

Sampling method: It was from patient's data records

Sample size: One hundred seventy six patients' files were checked, but only 108 files were included and the rest were excluded.

Inclusion criteria:

1. Patients have Pterygium excised with phacoemulsification in Dr Saleh polyclinic in period 2005 to 2015.
2. Patient have pterygium excised came for follow up for two times or more within the period at least one months after their surgery

Exclusion criteria:

1. Pterygium plus phacoemulsification surgery outside Dr Saleh polyclinic.
2. Pterygium surgery without phacoemulsification.
3. Pterygium plus phacoemulsification surgery done outside the period 2005 to 2015.
4. Patient missed follow up.

Methods and Tools of data collection:

- A questionnaire was designed, and completed for each patient's file. The questionnaire consisted of:
- a. Clinical history: This includes personal data
 - b. Visual acuity (VA) of the patients was checked with illuminated Snellen's test type.
 - c. Refraction was done for every patient
 - d. Patients included in the study are those who had completed one month or more after Pterygium plus phacoemulsification surgery and at least came for two follow-ups.

Results

A total number of 108 patients were included in the study; those came after their surgery for two visits are 103 patients.

Demographic data:

The number of males patient in this study was 62 (60.2%) compared to females number of 41 (39.8%).

The patients' ages at the date of surgery were from 25 to 80 years with mean of 65.44 and 9.44 SD. The patients were from Albaha are 44 (42.7%), Tihama are 22 (21.4%) and other patients (37) from other parts of Saudi Arabia.

Patient's problem:

The chief complaint was defective vision in 93.2% of our patients, and recurrent pain and redness in the rest of the patients.

Site of pterygium:

Single nasal pterygium was the commonest site of pterygium in this study (98.1%), one patient had temporal pterygium and one patient had two pterygia nasally and temporally.

Pterygium surgery:

Types of surgeries are pterygium plus phacoemulsification in all patients and right eye was operated eye in 49.5% of patients.

The mean duration period from the operation day to the last follow up day was 14.4 months.

Figure 1: relation between patients age and number of treated cases.

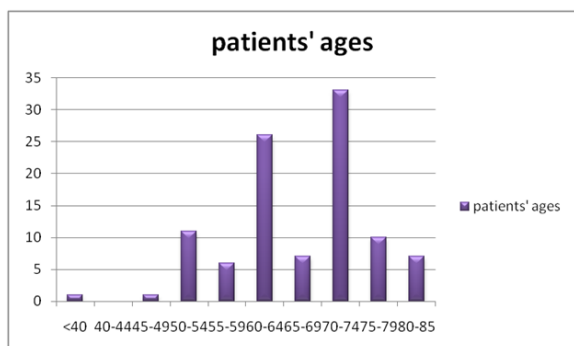
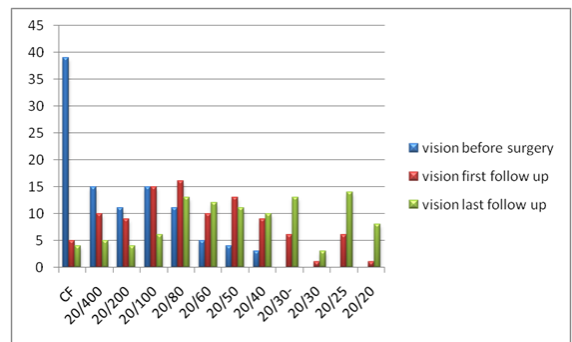


Figure 2: Vision before and after surgery.



Vision before surgery:

The mean vision before surgery was 20/200 (0.10) with standard deviation of 0.122. most of the patients (93.2%) had vision less than 20/60 (0.30)

Vision in the first follow-up visit:

The mean uncorrected visual acuity was 20/60 (0.3), SD of 0.24. Patients had vision 20/60 or less are 64.4%.

Vision in the second follow-up visit:

The mean uncorrected visual acuity was 20/40- (0.47) with standard deviation of 0.31. More than half of patients, their vision was 20/40 or better (57.28%).

Discussion:

One hundred and three files were reviewed (total number of patients' files) those who had two follow-ups or more after their pterygium plus phacoemulsification surgery. Most of the patients wanted to improve their vision (93%). only one patient had pterygium surgery before.

There was difference between males (60.2%) and females (39.8%) number in this study; the age of the patients at the time of surgery was 60 or more in 64.7% which can be explained by the presence of cataract in all patients and as we know cataract is more prevalence in elderly patients⁷.

The mean uncorrected visual acuity improved from 20/200 before surgery to 20/60 in first follow up visit and continue to improve at the last follow up visit (20/40-). This improvement in visual acuity can be explained by the cataract removal and intraocular lens implantation⁹.

Conclusion

Simultaneous pterygium excision plus phacoemulsification with PCIOL surgery is an acceptable option in our community; when we are faced with a case of significant cataract and moderate to advance pterygium; and although there are occasional difficulties in intraocular lens (IOL) calculation in addition to corneal scarring and corneal surface irregularity pterygium excision plus phacoemulsification as single procedure improves visual acuity, decreases the cost on the patient and helps to overcome the patient's poor compliance.

Recommendations

1. We recommend pterygium plus phacoemulsification surgery for the patients who have cataract and pterygium in the same eye who requested surgery for both, to cut on the cost; safe the patient second procedure and overcome patients poor compliance.
2. Documenting pre- and postoperative K readings and topography is recommended.
3. We recommend documenting the shape and size of pterygium by drawing, measuring and photography

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