

CASE REPORT

Economic Constraints in Managing Complicated Cataracts

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ABSTRACT

Practicing in a low-resource environment presents unusual challenges with the management of even the simplest conditions when physicians must choose between investigating their patients and proceeding to intervention with patients' limited resources. Failure to perceive light, inaccurate light projection, or sonographic evidence of retinal detachment are all reasons to avoid cataract surgery, as there is no hope of visual recovery. However, when a patient already accepts a blind eye, but wants cataract surgery to remove the cosmetic blemish of leukocoria, they may question the necessity of preoperative ultrasonography because of the additional expense involved. Market forces can be defined as the economic factors affecting the price, demand, and availability of a commodity. In recent times, market forces have played increasingly significant role in the accessibility of standard healthcare in Nigeria; as Medical Services in Public Hospitals are no longer free, and the majority of Nigerians fund their healthcare through out-of-pocket expenditure, which places a burden on the economically challenged and uninsured. The main objective is to emphasize the importance of ultrasonography in a blind eye for the purpose of determining the position of a suspected retinal detachment, and to introduce the black occlusive intraocular lens (IOL). This is a report of cosmetic cataract surgery performed in a blind eye, with failure to achieve desired results, due to anteriorly displaced retinal detachment. This case describes the difficulties encountered with cosmetic cataract surgery in a low resource setting and discusses the use of occlusive IOL to improve cosmetic outcome. Cataract surgery is to be avoided in the presence of total retinal detachment. However, black occlusive IOL implantation may provide a cosmetically acceptable outcome.

Keywords: Cosmetic cataract extraction, leukocoria, occlusive intraocular lens, retinal detachment traumatic cataract

INTRODUCTION

Market forces are playing an increasingly significant role in the access to Healthcare Service and Resources in Nigerian medical practice. Practicing in a low resource setting presents unique challenges in the management of otherwise simple conditions. The main constraint encountered in the management of patients involves ancillary investigations. Patients face financial constraints when they must pay out-of-pocket for all

investigations and treatment. As a result, attending physicians often have to choose between requesting the desired test and proceeding with surgical intervention with minimal ancillary investigation, to avoid draining the patient's resources required for the treatment. Cataract surgery is indicated to improve vision, improve cosmesis, observe or treat posterior segment lesions, and to relieve lens-induced complications such as inflammation or elevated intraocular pressures. While it is a standard practice to request for an ocular ultrasound scan in patients with traumatic cataracts when the fundus cannot be seen, the rationale is to determine the possible cause of visual loss and give the patient an idea of visual prognosis before surgery. However, where there is no hope of visual recovery, as in an already blind eye, cataract

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Ogun: Economic constraints in cataract surgery

surgery is performed purely for cosmetic reasons. Understandably, requesting an ultrasound in a blind eye to confirm a suspected retinal detachment is met with some degree of disconcertment, when the patient has only just managed to save enough money for the operation. Occlusive intraocular lenses (IOL) are not common worldwide and are currently not available in Nigeria. This case illustrates the need for preoperative ultrasonography to determine the position of retina prior to elective cataract surgery indicated primarily for cosmetic reasons in a confirmed blind eye.

CASE REPORT

A 24-year-old woman presented with unocular loss of vision, following blunt trauma to the LE, from a fist, 5 years before presentation. There was progressive visual deterioration in the left eye to no light perception (NPL) over the course of a year. The anatomical cause of her visual loss was never diagnosed. The right eye was completely normal. She was otherwise healthy. She requested removal of her cataract because she did not like the appearance of the "white spot" in her eye. While the right eye was unremarkable with the acuity of 6/5, the left eye was NPL with a hypermature cataract and a total afferent pupillary defect. In addition, the peripheral iris showed scalloped hypopigmentation in the outer third of its entire circumference, but there was no iris neovascularization. The hypermature cataract is shown in Figure 1. There was no vitreous in the anterior chamber, and there was no view of the fundus. Intraocular pressures were normal bilaterally. A diagnosis of left hypermature traumatic cataract with probable retinal detachment was made. The patient was informed of the unlikelihood of visual recovery following surgery because of the concomitant retinal detachment. An ocular ultrasound scan was ordered but not done due to financial constraints. The patient

underwent elective, "cosmetic" extracapsular cataract extraction with peribulbar anesthesia. Intraoperative findings confirmed a morgagnian cataract with calcified cortex and iridescent crystals, including peripheral iris hypopigmentation and inferior zonular dehiscence. On the operating table however, preexisting anterior displacement of the totally detached retina was noticed in the pupillary plane, causing a dense leukocoria, shown in Figure 2. The cosmetic goal of surgery was therefore not achieved.

DISCUSSION

Old tractional retinal detachment may present as a white fibrous tissue in the pupillary axis, and it is called leukocoria. While, leukocoria in children is commonly a sign of intraocular pathologies such as retinoblastoma, persistent hyperplastic primary vitreous, Coat's disease, and retinopathy of prematurity; in adults, leukocoria is often due to cataract, posterior capsule opacity, "after cataracts" and less commonly, retinal pathologies such as retinal detachment or Coat's disease. Leukocoria as a result of retinal detachment from blunt ocular trauma in association with a cataract has been described in 2 cases in the literature, both of which were managed using black polymethylmethacrylate IOL implants with good cosmetic outcomes.^[1] As exemplified by this case, posterior segment complications of blunt ocular trauma frequently coexist with anterior segment complications such as hyphema and lenticular damage. Retinal detachment may follow blunt ocular injury, particularly if there is accompanying vitreous hemorrhage.^[2] The most common cause of this retinal detachment is a tear in the ora serrata, which occurs in up to 80% of cases, within 2 years.^[3] The infero-temporal retina is the most common area involved.^[4] Retinal detachment can be diagnosed by direct visualization on direct or



Figure 1: Complicated cataract right eye with calcified cortex scalloped atrophy of peripheral iris (preoperative photograph)



Figure 2: Leukocoria postcataract extraction Right eye due to the anterior location of a total retinal detachment*. *Photograph taken on operating table, immediately after right extra-capsular cataract extraction

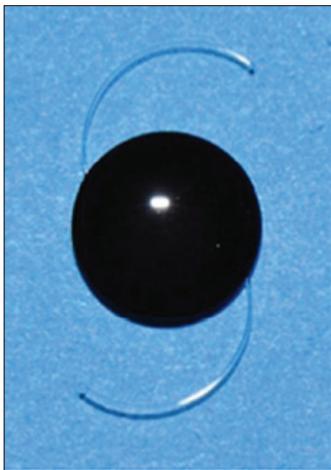


Figure 3: Example of an occlusive black intraocular lens*. *Photograph from Yusuf, Peirson, Patel. Black intraocular lenses: Near infra-red light transmission may risk treatment failure. *Br J Ophthalmol* 2013; 97: 1353-1354

indirect ophthalmoscopy. However, where there is media opacity, A or B scan ultrasonography may be used with or without contrast enhancement (contrast enhanced ultrasonography)^[5] to make the diagnosis. Vitreous hemorrhage and retinal detachment are important causes of poor visual outcome following blunt ocular trauma, but if recognized and treated early, may be associated with visual preservation.^[6] Long-term complications of retinal detachment include proliferative vitreoretinopathy, neovascularization, secondary glaucoma and phthisis bulbi.

An anteriorly displaced retinal detachment presenting as leukocoria after cosmetic cataract surgery, as was the case in this patient; is considered a poor outcome. This case would have benefited from the insertion of black occlusive IOL, if available. Recent publications have reported the use of black occlusive IOLs, primarily for the treatment of cosmetically unacceptable leukocoria in circumstances similar to this case.^[1,6] An example of black occlusive IOL is shown in Figure 3.^[7] Occlusive IOLs have also been used for the management of intractable diplopia, photophobia, and even proposed for the management of amblyopia.^[8] Black diaphragms have been designed for IOLs implanted in eyes with aniridia.^[9] Because of their limited usage and special indications, black IOLs are often more expensive than other IOLs,^[7] and may even need to be custom made. However, in the absence of this cosmetic option, it is recommended that cosmetic cataract surgery to be

avoided in a blind eye, except the state and position of the retina has been verified by ocular ultrasonography.

CONCLUSION

While poor visual recovery is a disincentive for cataract surgery, patients may be dissatisfied with their appearance and seek surgical removal for cosmetic reasons. It is nevertheless recommended that cataract surgery in a blind eye be considered with immense caution. Proliferative vitreoretinopathy and vitreous hemorrhage should be excluded by sonography, and if present, cataract surgery should be discouraged and the patient should be advised to wear colored contact lenses instead. Confirmation of a total retinal detachment preoperatively would be a strong argument for avoiding surgery to prevent phthisis bulbi, as well as for medico-legal protection of the surgeon. Nevertheless, if the black occlusive IOL becomes available in Sub-Saharan Africa in future; this option may also be considered as a cosmetic solution.

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Conflicts of interest

There are no conflicts of interest.

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