

Causes of poor outcome after cataract surgery in Satkhira district, Bangladesh

R Lindfield¹, S Polack², Z Wadud³, KA Choudhury⁴, AKMM Rashid⁵ and H Kuper²

Abstract

Aims Recent data have raised concerns about visual outcome following cataract surgery. The aim of this study was to assess the frequency and causes of poor and borderline outcome after cataract surgery in a population-based case series in Satkhira district, Bangladesh.

Methods A population-based case series was conducted within a population-based cluster survey of people aged over 50 years in Satkhira district where 4868 people underwent visual acuity (VA) screening. Eyes operated for cataract with VA < 6/18 were examined in detail by an ophthalmologist, including a full history and dilated funduscopy, to determine the cause of the visual outcome.

Results Cataract surgery was performed on 213 eyes. Outcome was good (VA > 6/18) for 128 eyes (60.1%), borderline (VA < 6/18 to 6/60) for 35 eyes (16.4%), and poor (VA < 6/60) for 50 eyes (23.5%) with available correction. Borderline and poor outcomes were most commonly due to lack of spectacles (25.8%), poor selection (33.8%), or surgical complications (30.6%). Surgical sequelae, namely posterior capsule opacification, was a less common cause of poor or borderline outcome (9.7%).

Conclusions Quality of surgical outcomes is of concern in Satkhira district. Increased emphasis on selection of subjects for surgery, provision of spectacles, and monitoring of surgery may improve outcomes.

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Keywords: cataract; Bangladesh; surgical outcome; case series

Introduction

Cataract is the leading cause of blindness worldwide, and is particularly common in

low-income countries.¹ The number of cataract surgeries performed must be increased to meet this need, while maintaining high-quality surgery. Recent data have raised concerns about visual outcome following cataract surgery,² including surgeries in Bangladesh.³ We undertook a population-based case series to investigate the frequency and causes of poor outcome following cataract surgery in Satkhira district, Bangladesh.

Materials and methods

A population-based cluster survey of visual impairment among people aged over 50 years was conducted in Satkhira district.⁴ A total of 4868 people aged over 50 years underwent VA screening in their homes. The outcome of eyes that had undergone cataract surgery was categorized as: good (VA > 6/18), borderline (VA ≥ 6/60 but < 6/18), or poor (VA < 6/60).² Operated eyes were examined by an ophthalmologist.

Participants gave informed consent. Ethical approval was granted by the Bangladesh Medical Research Council and the London School of Hygiene & Tropical Medicine. Referrals were made for people with treatable conditions.

Results

Cataract surgery was performed on 213 eyes (in 170 people). Of these, 117 eyes had extracapsular surgery with an intraocular lens (IOL) implanted (54.9%) and 96 had intracapsular cataract surgery (45.1%).

With available correction, the outcome was good for 128 eyes (60.1%), borderline for 35 eyes (16.4%), and poor for 50 eyes (23.5%) (Table 1). Outcomes improved with best correction, so that with pinhole 144 eyes (67.6%) had good

¹Maidstone & Tunbridge Wells National Health Service Trust, Maidstone Hospital, Maidstone, UK

²International Centre for Eye Health, London School of Hygiene & Tropical Medicine, London, UK

³Child Sight Foundation, Dhaka, Bangladesh

⁴National Institute of Ophthalmology, Dhaka, Bangladesh

⁵CSS Rawm Hospital, Khulna, Bangladesh

Correspondence: H Kuper, International Centre for Eye Health, London School of Hygiene & Tropical Medicine, Keppel street, London WC1E 7HT, UK
Tel: +44 20 7958 8170;
Fax: +44 20 7958 8317.
E-mail: hannah.kuper@lshtm.ac.uk

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Table 1 Outcome after cataract surgery

Cause	Outcome after surgery ^a		
	Good (VA ≥ 6/18)	Borderline (VA < 6/18 to ≥ 6/60)	Poor (VA < 6/60)
Available correction	128 (60.1%)	35 (16.4%)	50 (23.5%)
Best correction	144 (67.6%)	26 (12.2%)	43 (20.2%)

Abbreviation: VA = visual acuity.

outcome, 26 borderline outcome (12.2%), and 43 poor outcome (20.2%). Eyes with an IOL implanted were more likely to have a good presenting outcome than aphakic eyes (OR = 9.1, 95% CI = 4.6–18.2). Eyes operated less than 5 years ago (*n* = 123) were more likely to have a good presenting outcome (*n* = 123) than those operated more than 5 years ago (*n* = 90) (OR = 2.0, 95% CI = 1.1–3.6).

Of the 85 eyes with poor or borderline outcome, 11 eyes had no (*n* = 7) or inconsistent (*n* = 4) information on cataract surgery and no cause of borderline/poor outcome could be assigned for 12 eyes. Of the remaining 62 eyes, 27 had a borderline outcome and 35 had a poor outcome (Table 2). Sixteen eyes (25.8%) presented with borderline/poor vision that improved with best correction to VA ≥ 6/18, and were classified as needing spectacle correction. A further 21 eyes (33.8%) with borderline/poor outcome were due to selection of cases, mainly those with concomitant macula disease. Surgical complications were common, and caused 30.6% of borderline/poor outcome. Surgical sequelae were relatively rare (9.7%). The pattern was broadly similar for poor and borderline outcomes, although borderline outcomes were more likely to result from surgical complications and poor outcomes from poor selection.

Discussion

Outcomes after cataract surgery were of concern in the population-based survey in Satkhira district,³ and were far poorer than the WHO recommendation that with available correction only 15% of eyes should have a borderline outcome and 5% poor outcome.² Poor or borderline outcomes were largely due to poor selection of cases, surgical complications, or lack of spectacles.

Other case series in South Asia support our finding of unsatisfactory outcome after cataract surgery, particular among aphakics. The Bangladesh national survey identified 226 operated eyes (88% aphakic), of which 44% had a good outcome, 28% borderline, and 28% poor.³

Table 2 Causes of visual impairment in eyes following cataract surgery

Cause of VA < 6/18	Borderline (VA < 6/18 to ≥ 6/60) (<i>n</i> = 27) ^a	Poor (VA < 6/60) (<i>n</i> = 35) ^b	Total (VA < 6/18) (<i>n</i> = 62)
Spectacles	7 (25.9%)	9 (25.7%)	16 (25.8%)
<i>Selection</i>			
Macula disease	5 (18.5%)	13 (37.1%)	18 (29.0%)
Glaucoma ^c	1 (3.7%)	1 (2.9%)	2 (3.2%)
Corneal disease	0	1 (2.9%)	1 (1.6%)
Surgical complications	12 (44.4%)	7 (20.0%)	19 (30.6%)
<i>Surgical sequelae</i>			
Posterior capsule opacification	2 (7.4%)	4 (11.4%)	6 (9.7%)

Abbreviation: VA = visual acuity.

^aExclusions: six eyes had unclear diagnosis and two had inconsistent or unavailable information on surgery.

^bExclusions: six eyes had unclear diagnosis and nine had inconsistent or unavailable information on surgery.

^cCup disc ratio < 0.5 and optic disc pallor.

Lack of spectacles and coincident disease were the leading causes of poor/borderline outcome. A case series of 216 operated eyes in Nepal (84% aphakics) found that presenting outcome was good in 43% of eyes examined, borderline in 26%, and poor in 31%.⁵ The largest cause of poor outcome was lack of spectacles, followed by surgical complications, and poor selection of cases, while poor outcome due to posterior capsule opacification was rare. The national survey of blindness in Pakistan identified 1788 operated eyes, of which outcome was good in 30%, borderline in 36%, and poor in 34%.⁶ Again, refractive error was the dominant cause of poor/borderline outcome, followed by surgical complications and concomitant diseases.

The totality of the evidence points to clear recommendations for improving visual results of cataract surgery. There is an urgent need to distribute spectacles routinely after surgery. Those with concomitant disease who will not benefit from surgery should not needlessly be given operations. There is a continued need for high-quality training of surgeons to reduce complications during surgery. The quality of surgery can also be improved through routine monitoring to inform and improve clinical practice.^{7,8}

In conclusion, quality of surgical outcomes is of concern in this population-based case series in Satkhira district. Increased emphasis on selection of subjects for surgery, provision of spectacles, and monitoring of surgery may improve surgical outcomes.

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