

# LONG TERM FOLLOW UP OF OPERATED PRIMARY CONGENITAL GLAUCOMA CASES

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## Introduction

In the Middle East, PCG incidence is one of the highest in the world, markedly increasing in populations with high consanguinity especially cousin-cousin inbreeding. Despite this, 90% percent of PCG cases occur sporadically without any family history. Only 10% show AR inheritance with variable penetrance.

Clinical presentation of PCG varies according to severity of the condition. Tearing, eye rubbing, photophobia, irritability and covering eyes in sunlight are common symptoms observed by parents or caregivers. Discrepancy between both eyes, corneal clouding and globe enlargement may be also attract the parent's attention.

Management is mainly surgical as medical treatment is rarely effective and associated with high risk of adverse effects. Surgical treatment options include angle surgery, filtering surgery and cyclodestructive procedures. Management should not aim only to lower the IOP, but also to manage any secondary complications including amblyopia, refractive changes, corneal clouding, and buphthalmos.

## Aim of the work

The aim of this study was to assess the long-term outcome of operated primary congenital glaucoma cases after a follow-up period of at least 8 years.

## Patients and Methods

This study was conducted as a retrospective chart review of patients diagnosed with primary congenital glaucoma and operated eight years ago or more at the pediatric ophthalmology department of Alexandria Main University Hospital.

Inclusion criteria of PCG cases followed the CGRN criteria for the diagnosis of childhood glaucoma. Patients should have undergone surgery for primary congenital glaucoma at least 8 years earlier.

Demographic, preoperative, operative, & postoperative data were collected from the records. Patients were contacted as an attempt to complete any missing follow-up data. Full examination of operated eyes, visual acuity assessment, IOL master and visual field testing were done for respondent cases. During different postoperative FU visits, success was defined by IOP  $\leq 16$ mmHg, stationary/regression of optic nerve cupping or both.

## Results

Demographic data obtained in this study show that male gender represented 57.8% of cases and parental consanguinity was reported in 48.53% of the study eyes.

Regarding clinical presentation, corneal haze either oedema &/or scarring was the most common presentation observed by the parents in all study eyes.

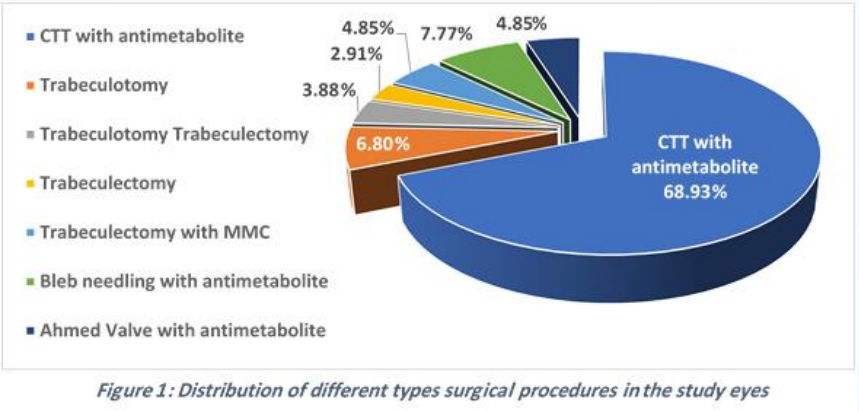
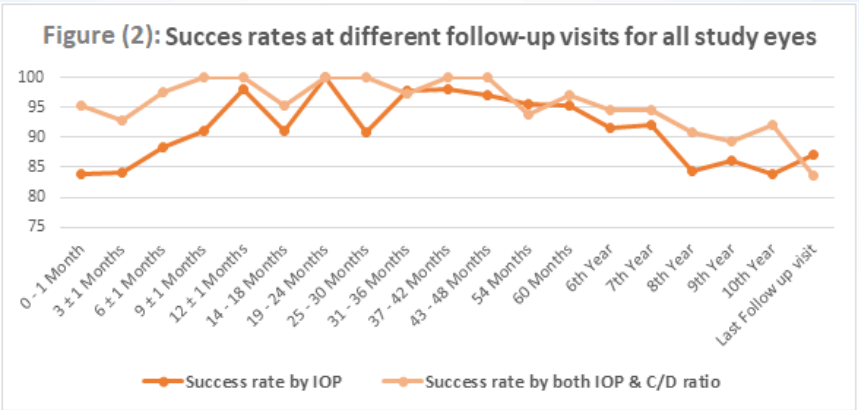


Figure 1: Distribution of different types surgical procedures in the study eyes

CTT with antimetabolite, MMC, was the most preformed procedure for 70 eyes of the 45 children included in this study as shown in figure (1); this surgical approach successfully decreased IOP to  $\leq 16$ mmHg in 87.1% and successfully preserved optic disc stability in 89.8% of study eyes at the end of follow-up, figure (2).



In the final follow-up, changes in the IOP, cup-disc ratio, axial length and corneal diameter were statistically significant in comparison to the preoperative measurements as shown on table (1).

Visual acuity of the study eyes & reported complications after more than 13 years of follow up are illustrated in figure (3). Reoperation rate after the 1st procedure for all study eyes was 28.6% where unilateral cases showed a lower reintervention rate than bilateral cases, but this was not statistically significant.

Table (1): Changes in the mean of IOP, C/D ratio, AL, and corneal diameter between preoperative and last follow-up measurements					
		No. of cases	Mean	SD	P-value
IOP	Preoperative	69	19.1	6.2	<0.001*
	Last follow-up	69	11.7	6.2	
C/D Ratio	Preoperative	49	0.5	0.3	<0.001*
	Last follow-up	49	0.3	0.3	
Axial Length	Preoperative	15	23.2	1.9	<0.001*
	Last follow-up	15	26.7	3.3	
Corneal diameter	Preoperative	15	12.1	1.4	0.008*
	Last follow-up	15	12.9	1.2	
*Statistically significant by paired t-test					

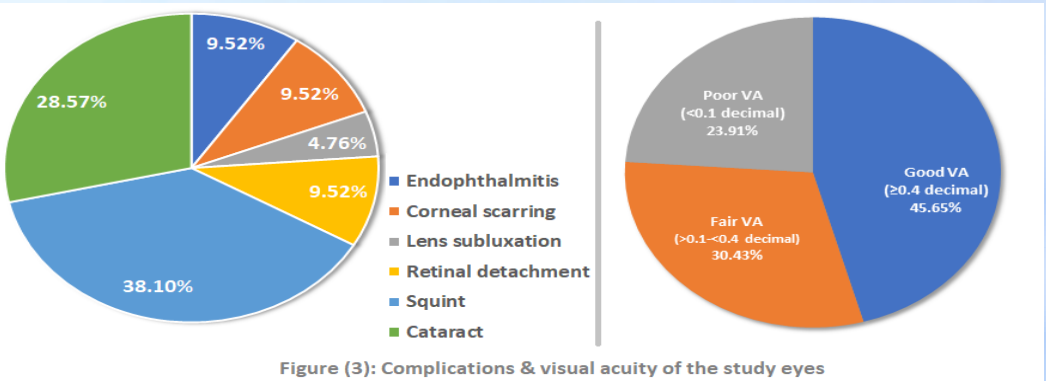


Figure (3): Complications & visual acuity of the study eyes

## Conclusion

After an average of 13 years of follow-up, the surgical approach in the study was shown to be successful with good visual outcome, low reoperation rate, and minimal, but occasionally serious, complications.

Defining postoperative success by IOP  $\leq 16$ mmHg alone is a good and viable definition of success and reflects the stability of the patient's condition over time; but it is a must to track optic nerve progression over follow-up to avoid erroneously considering postoperative failure.