Research Article

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Childhood Cataract: Clinical and Therapeutic Aspects at the Bartimée Clinic in Guinea

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ABSTRACT

Objective: *Determine the clinical and therapeutic aspects of childhood cataract.*

Methodology: *This is a 5-year retrospective study. Included were the records of patients aged 0 to 15 years received for cataracts at the Bartimée Clinic during the study period. Poorly kept records were not included. Epi-info 7.4.0 was used for data analysis.*

Results: *We had recruited 855 children from 0 to 15 years old, among whom 155 cases of cataracts were diagnosed, i.e. 18.1%. Average age 5.27 years ± 4.35; sex ratio 1.46. 76.8% of them were in school and 87.6% of them came from Conakry. The reason for consultation was leukocoria, i.e. 81.9%. The consultation time ≥ 1 year was 83.2%. Congenital cataracts accounted for 87.7%. Cataracts were total white in 59.3% of cases, idiopathic etiology in 76.6% and unilateral in the majority, i.e. 36.8% in the right eye and 32.9% in the left eye. Phaco emulsification was practiced in 66.8%. General anesthesia was used in 73.7% of cases and operative complications were dominated by corneal edema (48.5%).*

Conclusion: *Infantile cataracts are often idiopathic and late-onset etiologies, negatively impacting the functional outcome. Its management is delicate and rigorous. Implementing early detection and treatment measures could improve its outcomes.*

Keywords

Infantile cataract, Bartimée, Guinea.

Introduction

A cataract in children is the partial or total opacification of the lens, which can be of congenital or traumatic origin. When it is congenital, it exists from birth, often of genetic and hereditary origin and sometimes as a result of metabolic imbalances or maternal-fetal infection [1]. And when it is traumatic, in this case it is the complication of an eye trauma [2]. According to the World Health Organization (WHO) in 2023, congenital cataracts are one of the leading causes of visual impairment in children in developing countries [3]. Childhood cataracts pose a real therapeutic problem. This leads to a therapeutic approach and strategy that must, on a case-by-case basis, weigh the advantages and disadvantages of surgery [1]. Cataracts in children do not operate systematically after making the diagnosis. Surgery is indicated for total obturating cataracts of the newborn, unlike partial cataracts which can remain stable for a long time [4]. Cataract surgery in children is still not without complications, the most common of which is secondary opacification of the visual air [5]. However, in France, Tomietto et al. [6] reported cell proliferation as the most frequent complication

in their study (80% of 0–2 year olds). Dembélé A et al. [2] in their study on traumatic cataracts in children reported 31.4% vitreous output and 37.1% posterior capsule fibrosis on day 15. Guinea Conakry is no exception to this, but studies are scarce on this subject, thus motivating the realization of this work.

Methodology

Study Design

Infant cataracts have particularities both therapeutically and clinically, as well as compared to that of adults. However, in our context, scientific publications are rare; thus motivating the realization of this study. This is a retrospective study for a period of 5 years from January 02, 2018 to December 31, 2023. It took place in the Bartimée Ophthalmological Clinic, which is a second-degree hospital and specialized in ophthalmology. It is located in the Nongo district, sector I, commune of Ratoma, Conakry.

Study Participants

A total of 155 infant cataracts were received at the Bartimaeus Clinic during the study period. Included were the records of patients aged 0 to 15 years received for cataracts at the Bartimaeus Clinic during the study period. Poorly kept records were not included.

Sampling

We had carried out an exhaustive recruitment according to the selection criteria as we select the files of children treated for cataracts.

Data collection instrument

Information related to sociodemographic characteristics, clinical variables, physical examination, as well as therapeutic and evolutionary data were collected from the medical records of the pre-selected children. The parameters studied were: sociodemographic variables (frequency, age, sex, education, origin); clinical variables (reason for consultation, age of onset, anatomical type, laterality and etiology), therapeutic variables (surgical technique, type of anaesthesia and operative complications).

Data Analysis

The data was processed and analysed by the Epi-info software version 7.4.0, entered using the Word and Excel software of the office 2016 pack. Zotero software version 5.0.96.2 was used for bibliographic references.

Ethical and Regulatory Aspects

The study protocol was approved by the scientific committee of the Faculty of Health Sciences and Techniques of the Gamal Abdel Nasser University in Conakry. We have ensured the confidentiality of the data.

Results

We recruited 855 children aged 0 to 15 years, of whom 155 cases of cataracts were diagnosed, i.e. a frequency of 18.1%, including 202 eyes.

Table 1 shows that the age group from 0 to 5 years was the most dominant, the male sex was more represented. The children were in school and came from Conakry in almost all cases.

Table 1: Socio-demographic data.

Variables	Effective (N=155)	Percentage
Age in year		
0 - 5	105	67,7
6 – 10	19	12,3
11 - 15	31	20,0
Sex		
Male	92	59,4
Female	63	40,6
Schooling		
School	119	76,8
Not in school	36	23,2
Origin		
Conakry	136	87,7
Interior of the country	19	12,3

Average age: 5.27 years ± 4.35; Extremes: 9 months and 15 years; sex ratio: 1.46.

According to Table 2, the most frequent reason for consultation was leukocoria, the age of onset of 0 – 3 months (congenital) was the most frequent. Total cataracts are the most common anatomical clinical type. Cataracts were bilateral and idiopathic in more than half of the cases.

Table 2: Clinical Variables.

Clinical data		Effective (N=155)	Percentage
Reasons for consultation			
Leukocoria		127	81,9
Decreased vision		105	67,7
Strabismus		101	65,2
Inability to grasp an object		101	65,2
Nystagmus		67	43,2
Age of onset			
0 – 3 months (congenital)		96	61,9
3 months – 2 years (infant)		35	22,6
2 years – 10 years (juvenile)		24	15,5
Anatomical clinical type			
Total		92	59,4
Nuclear		37	23,9
Anterior Cortical		17	10,9
Posterior		9	5,8
Laterality/Etiologies			
Bilateral	Idiopathic	119	76,8
	Hereditary	19	12,3
Unilateral	Sporadic	11	7,0
	Malformative	6	3,9

According to the table below (Table 3), the most used operative technique was phaco emulsification, the cases of non-operated cataracts were non-obturating cataracts. General anesthesia was used more and operative complications were dominated by

posterior capsule rupture intraoperatively and corneal edema postoperatively.

Table 3: Therapeutic Variables.

Variable	Effective (N=202)	Percentage
Surgical technique		
Phaco-emulsification	135	66,8
MSICS	39	19,3
Not operated	28	13,9
Type of anesthesia		
General anesthesia	149	73,7
Regional anaesthesia	25	12,4
Not anesthetized	28	13,9
Intraoperative complications		
Posterior capsule rupture	17	8,4
From the vitreous	6	3,0
No complications	179	88,6
Post-operative complications D1		
Corneal edema	48	23,8
No complications	154	76,2
No complications on day 15	202	100

According to the figure below, postoperatively, visual acuity ≥ 3/10 was the most represented, i.e. in more than half of the cases with an average postoperative visual acuity of 2.2/10.

Discussion

The most common reason for consultation was leukocoria, the age of onset of 0 – 3 months (congenital) was the most common. Total cataracts are the most common anatomical clinical type. Cataracts were bilateral and idiopathic in more than half of the cases. The most commonly used surgical technique was phaco emulsification, the cases of non-operated cataracts were non-obturating cataracts. General anesthesia was used more and operative complications were dominated by posterior capsule rupture intraoperatively and corneal edema postoperatively. Postoperatively, visual acuity ≥ 3/10 was the most represented, i.e. in more than half of the cases with an average postoperative visual acuity of 2.2/10. This study has strengths, namely the representativeness of the study population, as patients come from all walks of life, as well as the exhaustive nature of the recruitment. However, it has a limitation, the fact that it is retrospective.

Speaking of the clinical data, our results corroborate with those of Takou Tsapmenne V et al. [8] who reported that the main reasons for consultation were decreased visual acuity and leucocoria with 46.3% and 37.5% respectively; that cataracts were congenital in 41.5% and that they were total white in 39% of cases. The type of general anaesthesia dominated in this study, which can be explained by the average age of the study population (5.27 years), as small children cannot tolerate the other types of so-called locoregional anaesthesia.

Regarding therapeutic data: in relation to treatment, these results are different from those of Boni S et al. [9] who reported that the most commonly used surgical technique was non-implant extracapsular extraction (ECE), i.e. in 77.3% of cases. This could be explained by the technical platform available and the surgeon's skills. Operative complications were dominated by corneal edema; this is different in the study by Kharbouch H et al. [10] which reported 21.4% of secondary cataracts and 14.3% of inflammatory reactions such as operative complications. In this study, in relation to postoperative visual acuity; its results are similar to those of Boni S et al. [9] in Côte d'Ivoire who found an average postoperative visual acuity of 2.1/10. Saa KB et al. [11] in Togo who found that visual acuity without correction was greater than 3/10th in 55% of cases at two months. According to the sociodemographic variables, its results corroborate those of Amedomé KM et al. [12] compared to the frequency of childhood cataracts (17.4%) and those of Boni S et al.[9] in relation to age (average age of 6 years with extremes from 6 months to 16 years) but different from this when talking about sex (sex-ratio 1/2). The children were in school and came from Conakry in almost all cases. This could be explained by the choice of the study site.

Conclusion

Cataracts in children are a real eye health problem because of their frequency and their clinical and therapeutic characteristics. It is a cataract whose etiologies are often idiopathic, traumatic or infectious and whose treatment time is often late, negatively impacting the functional result. Its management is delicate and leads to a therapeutic approach and strategy that must, on a case-by-case basis, weigh the advantages and disadvantages of surgery. However, the implementation of early detection and management measures, based on regular monitoring of the pregnancy, and on ophthalmological consultations could reduce this frequency and improve visual functional results.

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