

A Clinical Scenario of Ocular Morbidity in Paediatric Patients Attending Disability Clinic of a Tertiary Care Hospital of Assam

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Abstract:

Objectives: To determine the various types of congenital or acquired disorders causing permanent disability and their association with age, sex and visual acuity in paediatric patients attending Disability Clinic of Department of Ophthalmology, Jorhat Medical College & Hospital, Assam, from January 2018- December 2018.

Method: Hospital-based cross-sectional study. 105 paediatric patients were enrolled in the duration of January 2018 to December 2018 and were analyzed for anomalies, etiology, sex and age at presentation.

For the study, 105 pediatric patients reporting to the department between the age group 0-18 years were selected. Subjects were grouped by their age group into preschool (0-5 years), school-age (6-10 years) or older children (11-18 years).

Results: Out of 105 cases analyzed, 63 males & 42 females (M:F = 1.5:1) observed. The most common age group at presentation was 11-18 years (49%). 78% of cases were congenital. The most frequent ocular anomaly noted was microphthalmos (20%) followed by uveal coloboma (16.19%) and phthisis bulbi (14.29%).

Conclusion: In a developing country like India, a large proportion of the childhood blindness there is no appropriate treatment is available, only preventive and rehabilitative measure can be taken. Hence we need to concentrate on genetic counselling, nutritional supplementation, immunization. Specialist paediatric and optical services are required to manage cataract and glaucoma and refractive error. Further work is indicated to elucidate the causes of anophthalmos, microphthalmos and coloboma.

Keywords: Ocular morbidity, Paediatric, Congenital, Acquired, Disability clinic

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I. Introduction:

Globally, it is estimated that approximately 1.3 billion people live with some form of vision impairment^[1]

In India, over 2.68 Cr persons are disabled, which is 2.21% of total population. Among the total disabled, 1.5 Cr (56%) are males and 1.18 Cr (44%) are females.

The percentage of disabled to the total population increased from 2.13% in Census 2001 to 2.21% in Census 2011.

20% of the disabled persons are having disability in movement, 19% are with disability in seeing, and another 19% are with disability in hearing. 8% has multiple disabilities.

Across the country, the highest number of disabled persons is from the State of Uttar Pradesh. Nearly 50% of the disabled persons belonged to one of the five States namely Uttar Pradesh (15.5%), Maharashtra (11.05%), Bihar (8.69%), Andhra Pradesh (8.45%), and West Bengal (7.52%). Assam has a share of 1.79% of disabled persons.^[2]

Recently, studies have demonstrated that 30% of India's blind people lose their vision before the age of 17 years^[3]

Visual impairment is a worldwide problem that has a significant socioeconomic impact. Childhood blindness is a priority area because of the number of years of blindness that ensues. Data on the prevalence and causes of blindness and severe visual impairment in children are needed for planning and evaluating preventive and curative services for children, including planning special education and low vision services^[4].

In the 10th revision of the WHO International Statistical Classification of Diseases, Injuries and Causes of Death, ‘**low vision**’ is defined as visual acuity of less than 6/18 but equal to or better than 3/60, or a corresponding visual field loss to less than 20°, in the better eye with the best possible correction. ‘**Blindness**’ is defined as visual acuity of less than 3/60, or a corresponding visual field loss to less than 10°, in the better eye with the best possible correction. ‘**Visual impairment**’ includes both low vision and blindness.^[5]

Categories of Visual Disability ^[6]

Categories with visual correction

Category	Better eye	Worse eye	%age impairment
Category 0	6/9-6/18	6/24 to 6/36	20%
Category I	6/18-6/36	6/20 to Nil	40%
Category II	6/40-4/60 or field of vision 10°-20°	3/60 to Nil	75%
Category III	3/60 to 1/60 or field of vision 10°	F.C. at 1 ft. to Nil	100%
Category IV	F.C. at 1 ft. to Nil or field of vision 10°	F.C. at ft. to Nil	100%
One eyed persons	F.C. at 1 ft. to Nil or field of vision 10°	6/6	30%

Problem definition:

To determine the causes of visual impairment and blindness amongst paediatric patients attending the Disability Clinic of Department of Ophthalmology; to identify the avoidable causes of visual impairment and blindness; and to provide spectacles, low vision aids, orientation and ophthalmic treatment where indicated.

II. Methodology:

A proforma was drawn up and ethical clearance was obtained from the Institution's Ethical and Research Committee.

The study design was a hospital-based cross-sectional study of all the subjects who presented to the Disability Clinic of Department of Ophthalmology between January 2018 and December 2018.

Demographic data such as age and sex were noted. Recording of VA for distance, unaided and aided with pinhole or correction was done. Blindness and visual impairment (VI) according to WHO classification was used. Findings of anterior and posterior segment examination of the eyes using slit lamp biomicroscope with + 90 D lens and/or binocular indirect ophthalmoscope were recorded. Gonioscopic examination of glaucoma cases was done. Refraction results were recorded. Other causes of VI and blindness were also noted.

III. Results & Discussion

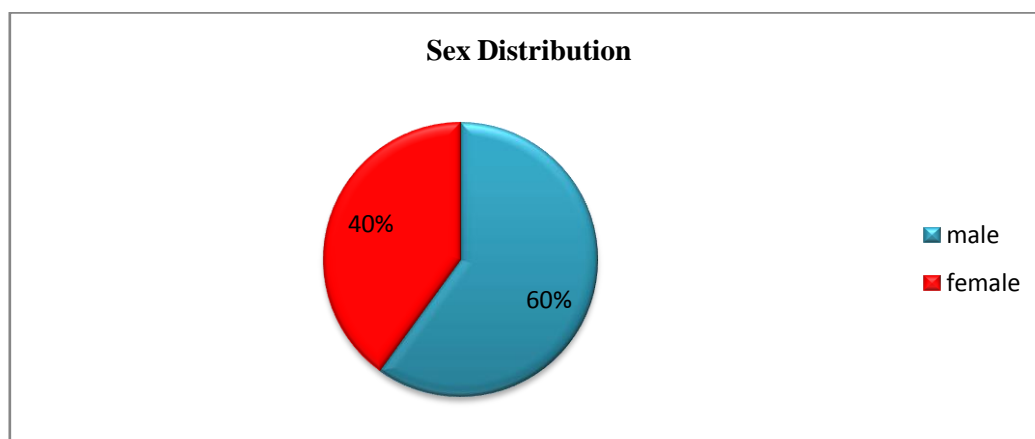


Fig. 1- sex distribution of patients

In the present study, the male (60%) to female (40%) ratio is **M:F = 1.38 : 1.**

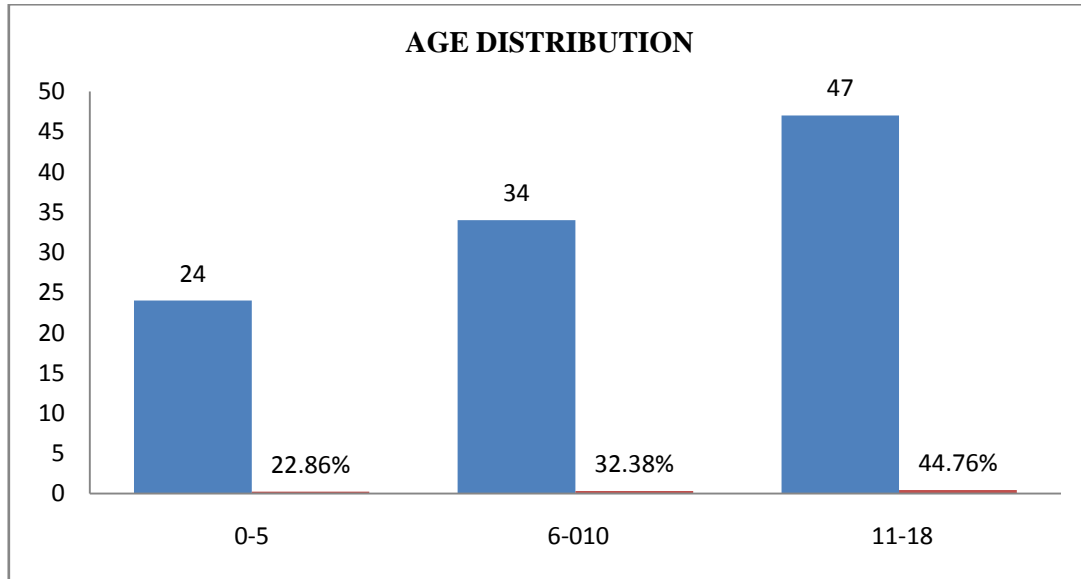


Fig. 2- Age distribution of patients

The most common age group at presentation was between **11-18** years (**44.76%**) followed by the age group of **5-10** years (**32.38%**).

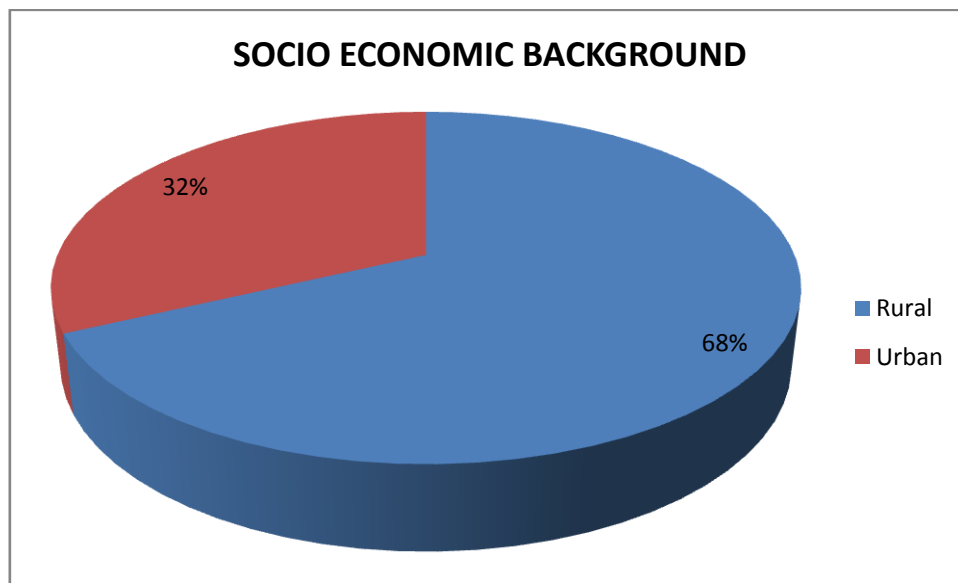


Fig. 3- Socioeconomic background of patients

The majority of patients under the present study resided in rural areas. **67.60%** patients hailed from rural areas and **32.38%** patients were from urban regions.

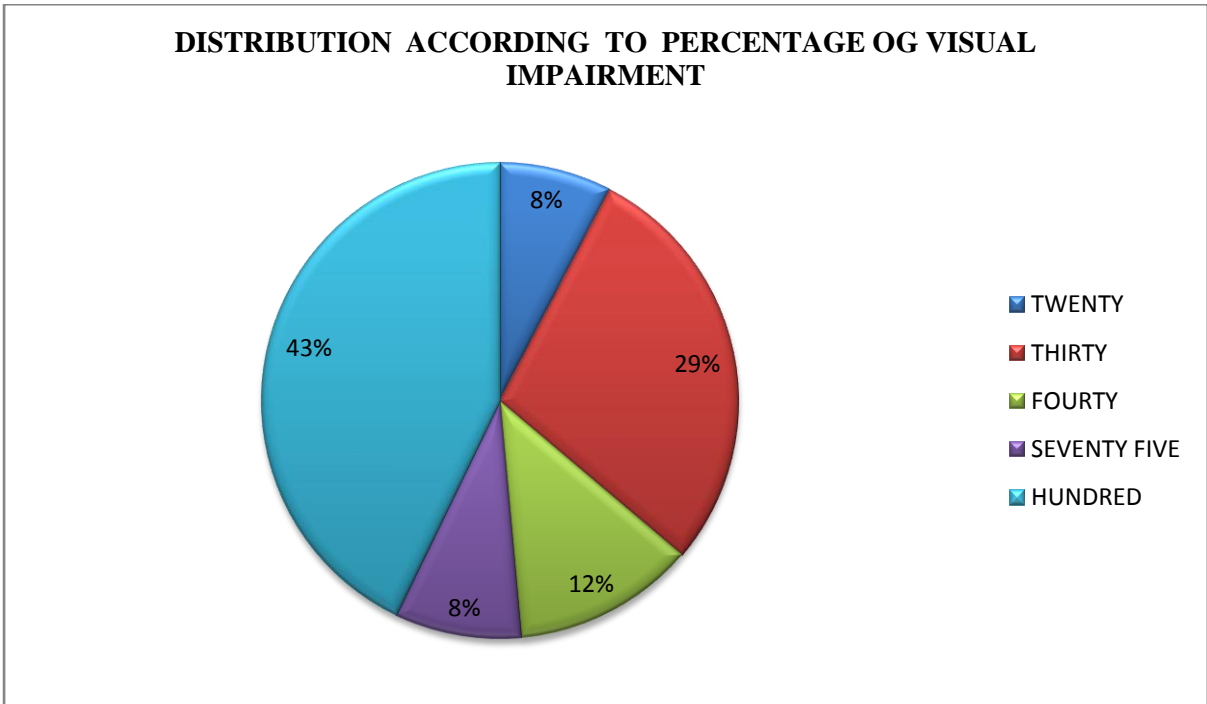


Fig. 4- Distribution of patients according to Percentage visual impairment

In the study, **42.86%** patients had **100%** visual impairment followed by **28.57%** patients of **30%** visual impairment (one-eyed).

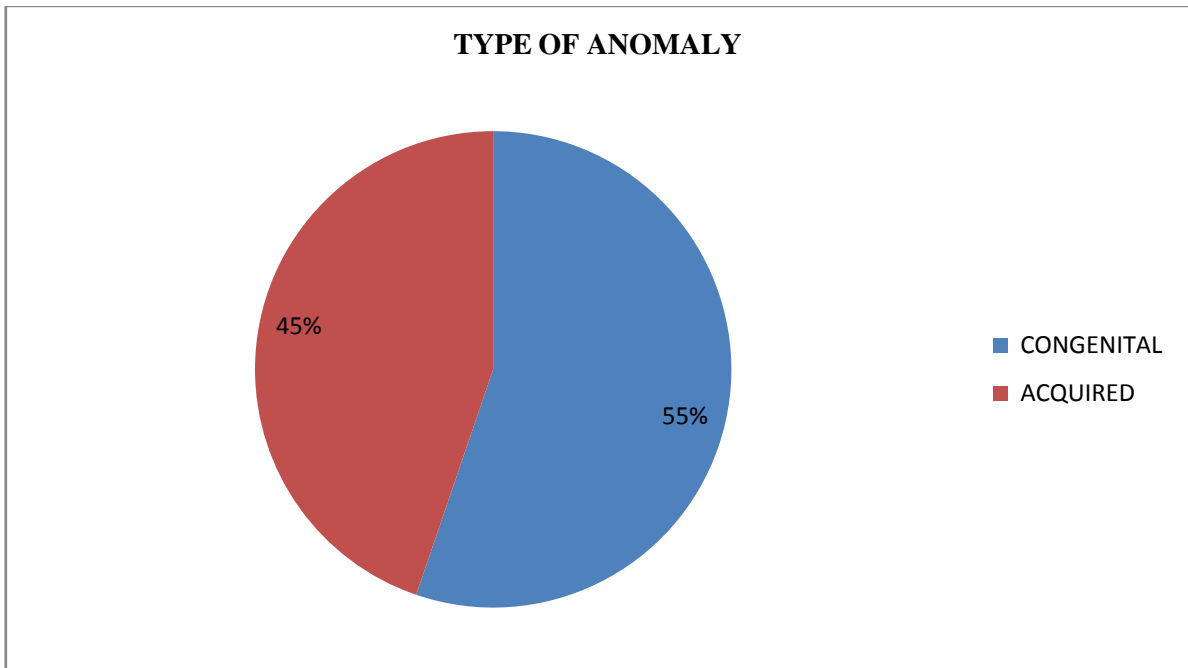


Fig. 5- Type of ocular anomaly of the patients

On examination of patients, **55%** had some congenital anomaly and the rest **45 %** had acquired disorders.

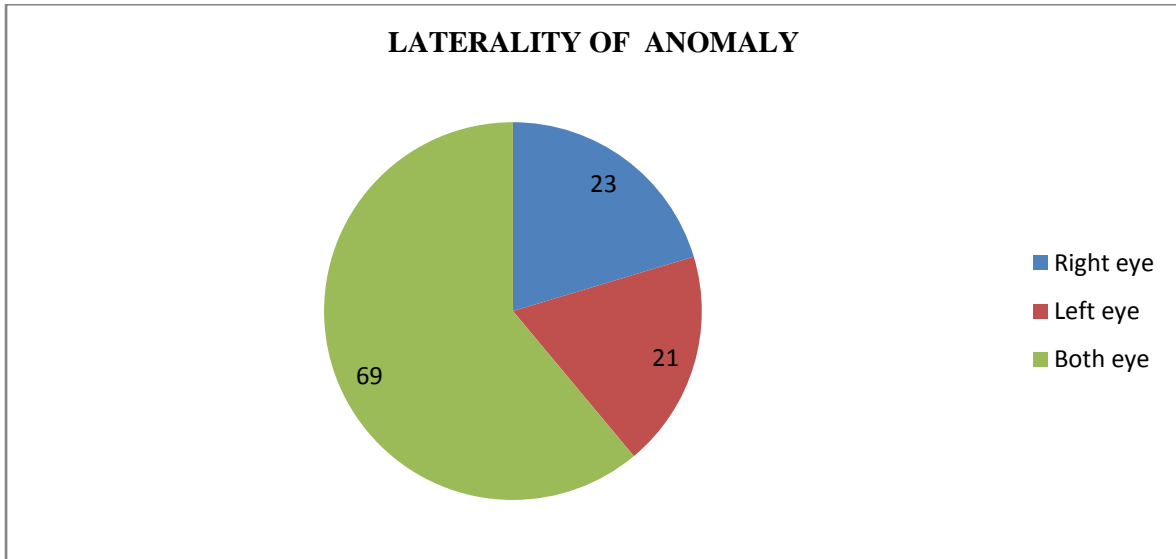


Fig7- frequency of laterality

On examination of patients, 23 patients had anomaly in right eye, 21 patients had left eye and 69 patients had both eye

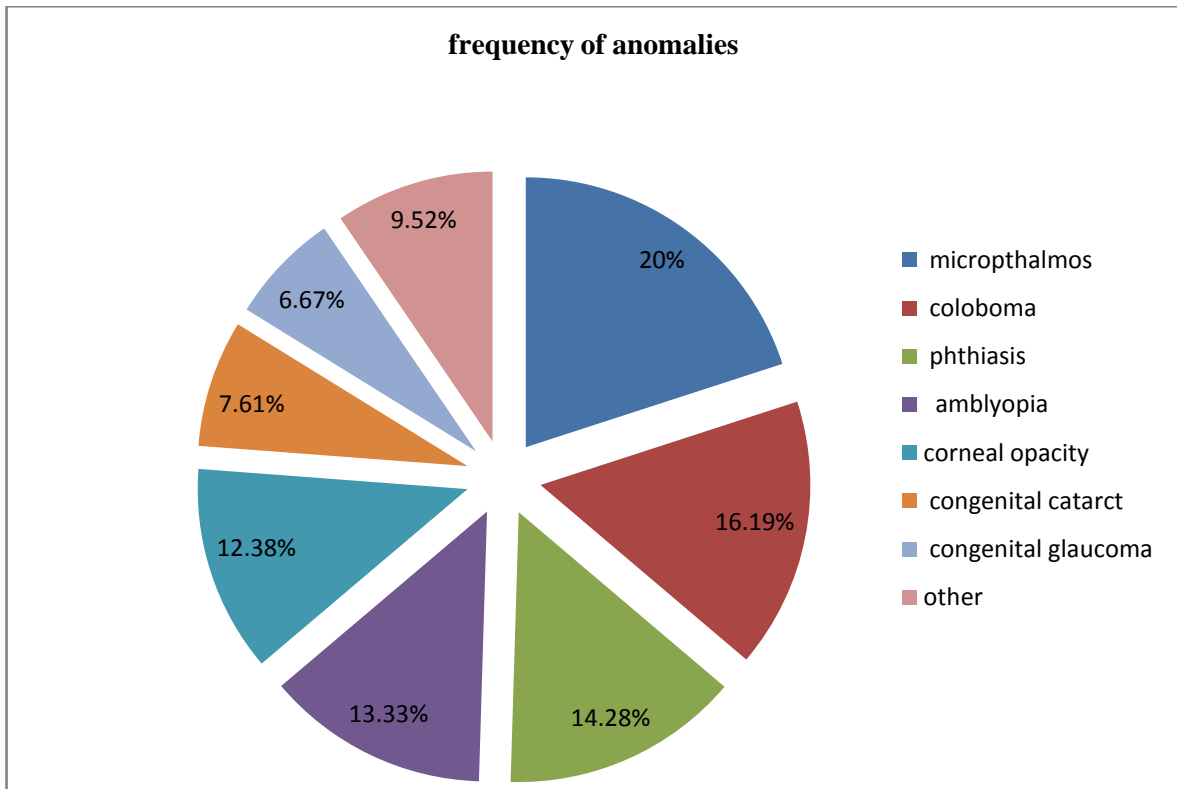


Fig. 6- The varies subtype of ocular anomalies (congenital and acquired)

The most common anomaly observed is microphthalmos (20%) followed by uveal coloboma (16.19%) and phthisis bulbi (14.28%).

Age group (year)	No. of eyes	Most frequent anomaly
0-5	35	Microphthalmos
6 - 10	51	Microphthalmos
11-18	38	Coloboma

Table 1- Age wise distribution of anomalies

The most frequent anomaly observed in the age group of 0-5 years and 6-10 years is microphthalmos. Uveal coloboma is most commonly seen in 11-18 years

IV. Discussion

In the present study conducted on 105 paediatric patients attending the Disability Clinic of Jorhat Medical College, Assam in the time period of 1 year from January 2018 to December 2018, male (60%) to female (40%) ratio is **M:F = 1.50:1**. In a similar study conducted by Patil ,Pujar,Manasa,Mallikarjunet al^[7] (2015), the number of males were found to be more than females (M:F ratio was **1.5:1**). This could be attributed to sex ratio (male > female) in this region, or males may have more need of Certification of Disability.

The most common age group at presentation is between **11-18 years (49%%)**. In the study conducted by Ghosh, Mukhopadhyay, Sarkar, Bandyopadhyay, Maji and Bhaduri al^[8] in 2008, the most common age group was also between **11- 20 years (27.74%)**. This could be due to the increased awareness of the usefulness of a Disability Certificate early on in life.

The majority of patients under the present study resided in rural areas. **67.62%** patients hailed from rural areas and **32.38%** patients were from urban regions. This was similar to the figures obtained by the Disabled Persons in India Statistics 2016^[9] where **69%** of the disabled population resided in rural areas while the remaining **31%** resided in urban areas. This may be due to the lack of awareness among the rural population for the need of early diagnosis and treatment of curable diseases. They consult the medical professionals at such late stages of the disease when it is no longer reversible. The only option for them remains to avail a Disability Certificate.

In this study, **60.95%** had some congenital anomaly and the rest **39.05%** had acquired disorders. In a similar study conducted by Siddegowda , Venkataramana, Ramamurthy and Shiveshi l^[10] (2016), **21.05%** patients had a congenital ocular condition. In another study conducted by Hegde^[11] (2016), it was found that **29.21%** patients had some congenital anomaly out of the total number of patients in the study.

In the present study, **42.86%** patients had **100%** visual impairment followed by **28.57%** patients of **30%** (one-eyed) visual impairment. In a similar study conducted by S Bandyopadhyay, SK Bandyopadhyay, Biswas, Saha, Dey and Chakrabarti^[12] (2018), **72.98%** patients had **100%** visual impairment. This could again be attributed to the delayed consultation with Ophthalmologists until the visual acuity deteriorates to Category III- 3/60 to 1/60 or field of vision 10° (better eye) and F.C. at 1 ft. to Nil (worse eye) or Category IV- F.C. at 1 ft. to Nil or field of vision 10° (better eye) and F.C. at ft. to Nil (worse eye)

The most frequent anomaly observed in the age group of **0-5 and 6 - 10 years** is microphthalmos, uveal coloboma in **11-18 years**

The conditions of microphthalmos (**21 cases**) and uveal coloboma (**17 cases**) are more frequent in pediatric . In a study conducted by Joshi^[13] (2013), the most common disorder seen in the age group of **5-19 years** was congenital disorders (**10.75%**).

The most frequent anomaly observed is microphthalmos (**19%**) followed by uveal coloboma (**15%**) and phtthisis bulbi (**14%**). In the study conducted by Ghosh, Mukhopadhyay, Sarkar, Bandyopadhyay, Maji and Bhaduri^[8] (2008), the most frequent condition observed was phtthisis bulbi (**17.74%**) followed by microphthalmos (**13.23%**).

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