

Study of Clinical Profile of Concomitant Strabismus

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Abstract: ***Aims & Objectives:** To describe clinical profile of concomitant strabismus, determine most common type, role of positive family history and amblyopia. **Materials & Methods:** It is a descriptive cross-sectional study of 45 patients below age of 25 years diagnosed to have concomitant strabismus between Oct2018 & Feb2020. Proforma filled with patient's age, sex, address, complaints & detailed history. Routine ocular examination done. Ocular movements checked in all directions of gaze. Cycloplegic refraction, detailed fundus examination & orthoptic assessment done. **Results:** 45 cases below 25yrs of age were examined. 26 (57.78%) females with a male to female ratio of 1:1.37. Most common type of deviation was exodeviation seen in 25(55.56%). 62.22% patients were found to be hypermetropes. Amblyopia was seen in 16(35.56%) patients and 18(40%) were found to have contributing family history. **Conclusion:** Most common type of comitant strabismus was exodeviation, amblyopia and positive family history was seen in significant no. of patients.*

Keywords: concomitant strabismus, exodeviation, hypermetropia, amblyopia

1. Introduction

Strabismus is a generic term applied to all those conditions in which the visual axes assume position relative to each other different from that conforming to physiological conditions. In simple terms, it is the condition where the visual axes of the two eyes do not meet at the point or object of regard¹. 'As long as squint is present, the child plays with his sight for each day's delay. The child has a moral right to instant and immediate investigation and treatment.'- CHAVASSE². These words, true as they may be, are unfortunately ignored and thus even in the most modern times, we come across children who have paid dearly with their sight for having a squint. Ignorance, illiteracy are the main factors for delay and higher incidence of squint in our country. The society is prejudiced against strabismic individuals, often underestimating their Intelligent Quotient and stereotyping them. It is of utmost importance to understand that the general societal standards classify strabismus as a cosmetic disadvantage only, failing to realise the functional aspect of this disease.

The patients are viewed as inferior to the peers with less appeal as potential friends and partners. However, a review of current literature shows a tendency to denounce the use of the word "cosmetic" within the treatment specifications, in an attempt to highlight that strabismus is a pathological state of the binocular visual system, affecting the normal appearance and hence the quality of life³.

Aims and Objectives

- 1) To study the clinical profile of comitant strabismus
- 2) To study the various factors involved in the etiology of comitant strabismus.
- 3) To study the association of amblyopia in cases of comitant strabismus.

Inclusion Criteria:

- 1) Patients with comitant squint
- 2) Patients aged between 0-25 years of age.
- 3) Patients of either gender
- 4) Patients who are themselves/whose parents willing to give consent.

Exclusion Criteria:

- 1) Patients with paralytic squint.

- 2) Patients with history of trauma.

2. Material and Methods

A descriptive cross-sectional study of all new patients below the age of 25 years who were diagnosed to have concomitant strabismus at Pravara Institute of Medical Sciences, Ahmednagar between October 2018 and February 2020 was carried out. It included 45 patients. A separate proforma having details of the patient's age, sex, address, complaints and history were noted. Detailed birth and family history particulars were taken from the parents. Patients operated previously for strabismus were excluded.

Routine ocular examination and visual acuity was tested using Snellen's chart where possible. Ocular movements were checked in all directions of gaze.

Cycloplegic refraction, detailed fundus examination and orthoptic assessment was performed. Deviation was measured objectively using Prism Cover Test and Modified Krimsky test. Before the start of the study ethical clearance and informed consent was obtained respectively from the institute and subjects.

3. Results

Out of the 45 patients newly diagnosed with concomitant strabismus in the specified period, 26 (57.78%) were females and 19 (42.22%) were males.

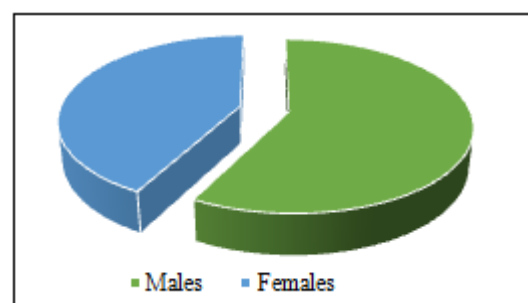


Figure 1: Gender distribution amongst studied patients

The number of patients across different age groups having concomitant strabismus is shown in the table below:

Table 1: Age wise distribution of patients studied.

S. NO.	Age	No. of Patients	Percentage
1.	0-5 yrs	16	35.56
2.	6-10 yrs	8	17.78
3.	11-15 yrs	4	8.89
4.	16-20 yrs	12	26.67
5.	21-25 yrs	5	11.11

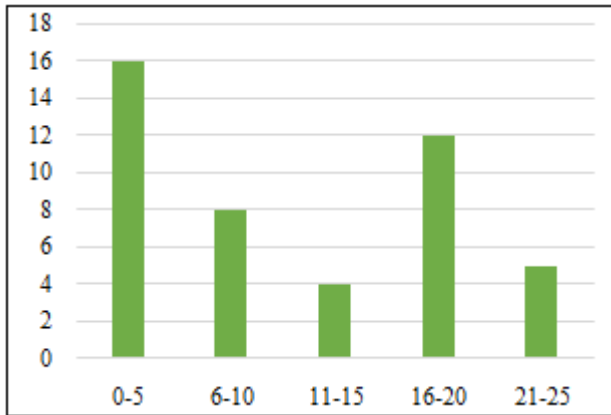


Figure 2: Age wise distribution of patients studied

18 (40%) patients had a family history of either strabismus or high refractive errors in first degree relatives. As regards the pattern of strabismus, preponderance of esotropia (55.56%) was seen, followed by exotropia (44.45%).

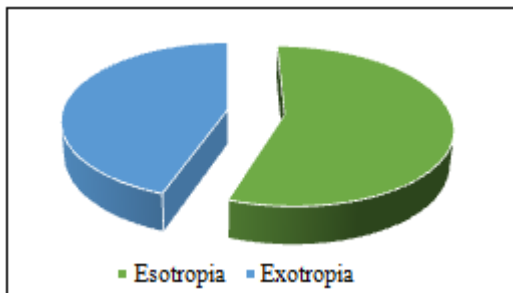


Figure 3: Distribution depending upon direction of deviation.

Refractive assessment of the patients revealed hypermetropia to be the most common refractive error (58.83%) as compared to myopia (32.22%) and emmetropia (8.95%).

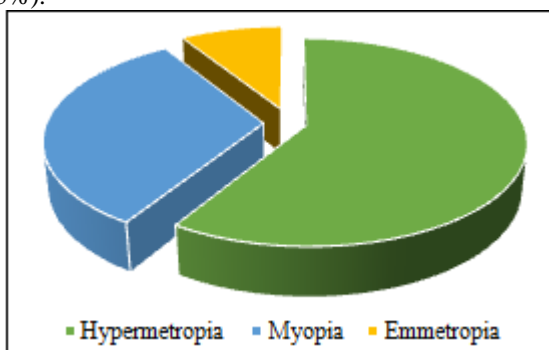


Figure 4: Distribution based on type of refractive error.

Amblyopia was noted in 16(35.56%) patients.

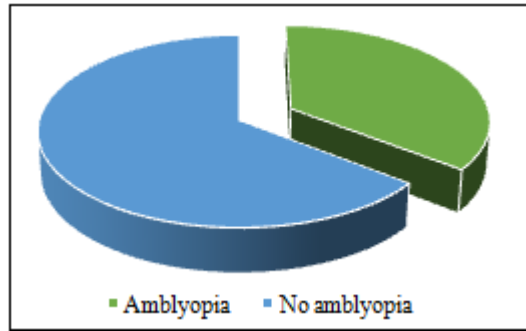


Figure 5: Distribution based on Incidence of amblyopia.

4. Discussion

This study is based on 45 patients of concomitant strabismus who were evaluated in Ophthalmology OPD at Pravara Institute of Medical sciences. A detailed workup was made according to proforma and based on the observations given in the previous tables the following conclusions were made from the study:

The ratio of esotropia:exotropia was found to be 1.25:1 which is consistent with Mohny et al(2007)⁴, Robai et al (2005)⁵ and Ohlsson et al (1999)⁶, however the ratio was reverse as per Lim et al(2004)⁷, Nepal et al(2003)⁸ and Matsuo et al(2003)⁹. It is similar to the greater incidence of Esotropia (57%) than Exotropia (43%) noted by Vijay Chopra, Pramila Balasubramanian et al (2017)¹⁰. In the study, Strabismus in paediatric age (3-16 year): a clinical study Tarakeswara Rao Attada et al¹¹, exotropia accounted for 57.6% and esotropia for 40.60% of cases. In another study of 100 patient (upto 12 years of age) with concomitant strabismus in Kolkata, by Datta D found that esotropia (74%)¹² was more common than exotropia (26%)

Strabismus was most frequent in the 0-5 year age group. This compares favourably with the observation of Awoyesuku et al¹³ despite the inclusion of adults in their study. Maximum incidence in 0-5yrs of age was observed by Musa KO, Ikuomenisan SJ¹⁴al:

In this study, a greater number of female patients were brought to the opd for evaluation as compared to male patients as opposed to Sarita Behera, Bijaya Kumar Dutta et al(2014)¹⁵ where males dominated over females. Similar female predominance were reported in previous studies in Nigeria, Ethiopia and United States¹⁶. On the contrary, Azonobi et al¹⁷ and Attada et al¹⁸ reported a slight male predominance. Although, none of this gender predominance was statistically significant, this may be attributed to more aesthetic concerns in female compared to male gender as suggested by Chaudry et al¹⁹.

Maximum incidence of hypermetropia (58.83%) was noted, followed by myopia (32.22%) and 8.95% patients were emmetropic. In a study of 100 patients (up to 12 years of age) with concomitant strabismus in Kolkata, by Datta D et al¹², they found that there were 50% hypermetropes, 18% myopes and 32% emmetropes. A similar pattern was observed by Rimsha Sarosh, Afroz et al³ where hypertropia was found to be the more common refractive error in their study population along with a low incidence of myopia.

High refractive error and amblyopia were found to be the major cause of strabismus which was similarly found in the study by Sarita Behera, Bijaya Kumar Dutta et al(2014)¹⁵.

5. Conclusion

- 1) A female preponderance was seen amongst the patients with concomitant strabismus.
- 2) Based on the direction of deviation, esotropia was more commonly seen. Hypermetropia was the more frequently associated refractive error.
- 3) Positive family history amongst first degree relatives was seen to be associated with strabismus and amblyopia was also seen a third of the patients.

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