

Introduction

Intermittent exotropia is the most common type of exodeviations. It can be categorized into3 types depending on the disparity between distance and near deviation in prism diopters; distance, near, or basic. Each type has a different approach. The treatment is mainly surgically, however, in most cases, exotropia recurs after surgical treatment to cause what we call postoperative drift. Although a notable correlation between age and postoperative drift has been identified, it remains unclear why it causes such outcomes in larger age groups. Multiple factors lead to this outcome, some have more influence than others. In this study, we aimed to assess those factors in early teenagers and older individuals as it is more frequent in these groups. We assessed the relationship between different factors other than age such as preoperative deviation, and intraoperative millimeters of muscle movement and their significance in postoperative drift.

Aim of the Work

This study aims to report the outcome and drift tendency after surgery after a 4-6 month ‘period and the need for another surgery in cases of large angle decompensated exotropia.

Subjects and Methods

This prospective study was conducted on forty-five patients who presented with large-angle decompensated intermittent exotropia, these patients were operated upon and followed upfor six months.

Inclusion criteria:

- Patients aged 12 years or above up to adulthood were suitable for this study.
- Patients needed to have exotropia with an angle of deviation more than or equal to 35Δ.

Exclusion criteria: - Patients with a history of any previous squint surgeries were excluded for lack of proper data in these cases.

- Patients less than 12 years or with exotropia less than 35Δ weren’t included.
- Cases of Duane syndrome type two or paralytic strabismus were excluded.
- Cases with mental retardation or cerebral palsy were excluded due to lack of cooperation for any tests.

Methods: All patients received a standardized comprehensive ophthalmologic examination comprising uncorrected visual acuity (UCVA), best-corrected visual acuity (BCVA), measurement of refractive errors, and slit lamp bio-microscopy, followed by a thorough examination of squint.

Results

Table1: Post-operative follow-up of the angle of deviation

Follow up of the angle	Study sample (n= 45)
After 1 month:	11 (24.4)
Mean±SD.	-0.4±5.03
Median (Min.–Max.)	1. (-10.0–15.0)
•Esotropia	7 (15.6)
•Exotropia	4 (8.8)
After 2 months:	17 (37.8)
Mean±SD.	5.51±8.31
Median (Min.–Max.)	0.0 (0.0–30.0)
After 3 months:	35 (77.8)
Mean±SD.	12.02±10.09
Median (Min.–Max.)	10.0 (0.0–40.0)
After 6 months:	40 (88.9)
Mean±SD.	16.96±10.08
Median (Min.–Max.)	15.0 (0.0–40.0)

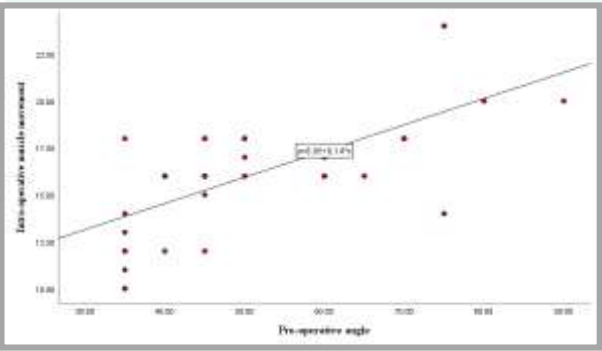


Figure: Correlation between preoperative angle and intraoperative muscle movement

Table 2: Comparison between patients who had drift and aligned patients after 6 months as regard preoperative assessment

	Drift (n= 40)	Aligned (n= 5)	Test of significance(p)
BCVA right:			
Mean ± SD.	0.85 ± 0.12	0.82 ± 0.11	U= 90.5, p= 0.713
Median (Min. – Max.)	0.8 (0.6 – 1.0)	0.8 (0.7 – 1.0)	
BCVA left:			
Mean ± SD.	0.83 ± 0.14	0.78 ± 0.15	U= 83.5, p= 0.532
Median (Min. – Max.)	0.8 (0.6 – 1.0)	0.8 (0.6 – 1.0)	
Angle:			
Mean ± SD.	53.0 ± 15.47	40.0 ± 5.0	U= 47.0, p= 0.052
Median (Min. – Max.)	47.5 (35.0 – 90.0)	40.0 (35.0 – 45.0)	
Control:			
Poor	38 (95.0)	1 (20.0)	FEp<0.001*
Moderate	2 (5.0)	4 (80.0)	
One hour occlusion:			
Done	4 (10.0)	5 (100)	FEp<0.001*
Not-done	36 (90.0)	0 (0.0)	
Pencil pushups:			
Done	4 (10.0)	5 (100)	FEp<0.001*
Not-done	36 (90.0)	0 (0.0)	
IOOA:			
Absent	25 (62.5)	5 (100)	MCp= 0.262
Present:	15 (37.5)	0 (0.0)	
Grade 2	4 (10.0)	0 (0.0)	
Grade 3	11 (27.5)	0 (0.0)	
IO Sx:			
No BIOM (total):	33 (82.5)	5 (100)	FEp= 0.577
Without IOOA	25 (62.5)	5 (100)	
With IOOA	8 (20)	0 (0.0)	
BIOM	7 (17.5)	0 (0.0)	

Table 3: Comparison between patients who had drift and aligned patients after 6 months as regard operative data

	Drift (n= 40)	Aligned (n= 5)	Test of significance (p)
Surgical type:			
B.L.R	21 (52.5)	5 (100)	MCp= 0.130
B.M.R	16 (40.0)	0 (0.0)	
R.R.R (3 muscles)	3 (7.5)	0 (0.0)	
Number of muscles:			
Mean ± SD.	2.05±0.22	2.0±0.0	U= 95.0, p= 0.613
Median (Min.–Max.)	2.0 (2.0–3.0)	2.0 (2.0–2.0)	
Number of operated muscles:			
Two muscles	38 (95.0)	5 (100)	FEp= 1.0
Three muscles	2 (5.0)	0 (0.0)	
Muscle movement:			
Mean ± SD.	16.38±3.02	14.4±3.29	U= 67.5, p= 0.228
Median (Min.–Max.)	16.0 (10.0–24.0)	16.0 (10.0–18.0)	

Conclusion

Age is an important factor to be considered in cases of IXT, as it affects post-surgical results immensely. We concluded that preoperative deviation is the strongest predictor for favorable outcomes and patient response to surgical treatment in cases of exotropia. Therefore, the correct determination of preoperative deviation should improve the success and predictability of the surgical outcome. Therefore, the method of measuring the correct preoperative angles of deviation would be expected to influence the final result. Also to keep in mind that more than one surgical intervention may be required to achieve more favorable results in older age groups.