**STANDARD OPERATING PROCEDURE**

**STRABISMUS**

The following points pertaining to the presenting complaints will be obtained:

* Detailed history of age of onset, duration & mode of onset
* History of precipitating factors such as trauma, systemic illness
* Any complaint of diplopia & vertigo will be obtained.
* Refractive error & history of treatment taken (use of glasses, occlusion & convergence exercises) and any surgical measures had been undertaken.
* Family history of strabismus and outcome of treatment instituted to any family member will be obtained
* History of any systemic illness

**EXAMINATION**

* **General examination**
* **Systemic examination (including CNS examination)**
* **Ocular examination**
* Head posture
* Forehead
* Facial symmetry
* Visual acuity: various vision tests depending on age of the patient will be obtained
* Refraction:
* Atropine sulphate(1% ointment) :< 5 year (TDS × 3 day)
* Homatropine hydrobromide (2% drops) : 5-8 years
* Cyclopentolate hydrochloride(1% drops) : 8-20 years
* Tropicamide (1% drop)
* Visual axis
* Type of deviation
* Amount of deviation
* Hirschberg's test
* Cover/uncover test for distance & near
* Prism bar cover test(PBCT) in all gaze
* Krimsky test
* Alternate prism bar cover test
* AV phenomenon (if horizontal squint): whether present or not
* Diplopia testing
* Double Maddox Rod Test
* AC/A ratio will be obtained in case of esodeviation
* Suppression (if present, its extent & depth)
* Worth Four Dot Test (WFDT)
* Synoptophore
* Fusional vergences
* Stereopsis
* Angle of deviation
* After-image testing
* Pupils will be looked for size & reactions
* Nystagmus (if present)
* Ocular movements
* Lid & adnexa (position of lids)
* Anterior segment examination (for media opacities)
* IOP (if possible)
* Dilated fundus examination will be performed in all cases of strabismus

**MANAGEMENT**

Depends on type of esodeviation (in children):

* Refractive error assessment
* Treatment of amblyopia will be done
* Accommodative esodeviation
* Refractive (hypermetropic)

1. Normo accommodative (normal AC/A ratio): full correction of hyperopic error as determined by full cycloplegia
2. Hyper accommodative (high AC/A ratio): bifocal glasses
3. Prisms: for small residual deviations.

* Surgery for non accommodative part: (*If residual esotropia, in spite of full correction and bifocals consider non accommodative element, so surgery will be done)*
* Non refractive (hyper & hypo accommodative)
* Non accommodative
* Essential infantile

1. Full hyperopic correction
2. Occlusion therapy (conventional occlusion )
3. Surgery

*(Choice of surgery depends upon surgeon’s preference in the absence of convergence excess or divergence insufficiency)*

* Monocular recession- resection : for small angle esotropia
* Bimedial recession : for large angles of deviation , preserves other muscles if and when future surgery becomes necessary.

*If large angle esotropia (constant deviation): will be operated at the earliest, 4-6 months of age or once the diagnosis & the deviation is assessed.*

*If small angle esotropia: proper hyperopic correction till 6 months of age.*

* Essential acquired : basic, convergence excess & divergence insufficiency

In adults:

1. Correction of refractive error (glasses or contact lens)
2. Surgery will be planned in a such way that amblyopic eye will be operated first to give maximum possible correction

**ESODEVIATION**

Refractive error assessment If refractive error present

1. Non accommodative
2. Accomodative

(Full correction of hyperopic error)

Amblyopia present No amblyopia

Treat amblyopia

Assess for retinal correspondence

Does the patient have fusion

Yes No

Amount of deviation Active vision therapy

<20 prism (10°) >20 prism (10°)

Glasses Surgery

**EXODEVIATION**

Refractive error assessment If refractive error present

* Essential exotropia(primary) : amblyopia rare
* Intermittent: fusional reserve (partially compromised) most common
* Sensory ( fusional free position)

Intermittent exotropia

Optimal correction of refractive error

Amblyopia present No amblyopia

Treat with occlusion

Orthoptic exercises (convergence)

If fails

Surgery

*(Choice of surgery depends on state of fusional control, size of angle & age of patient)*

* True divergence excess pattern : symmetrical bilateral lateral recession
* Basic exodeviation or the simulated divergence excess pattern : combination of recession of LR with resection of MR of the non dominant eye
* Convergence weakness pattern of exodeviation : symmetrical bilateral medial recti resection

Post operative alignment:

Young patients <5 yrs: overcorrection will be avoided

Older children: slight overcorrection desirable