Heterotropia (manifest squint) :is of **two** types:

1- Comitant (or Concomitant): when the angle of squint is the **same** in all directions of gaze.

2- Incomitant (paralytic): when **angle of squint varies** in various direction of gaze and it become larger in the direction of paralytic muscle.

Comitant squint: It can be:

1- Uniocular: same eye deviate all the time and the fellow eye always fixated.

2- Alternating: each eye fixes and deviates alternately.

ESOTROPIA (manifest convergent squint)

is a manifest inward deviation of the visual axes. It is the commonest form of childhood strabismus. It may be:
1-primary
2-secondary (most commonly due to poor vision)
3-consecutive (after surgery for an exodeviation).

1°esotropias are classified as accommodative or non-accommodative.
As with all strabismus, the assessment should include
refraction, full ophthalmic examination, and addressing of amblyopic risk. It is essential to detect/ rule out underlying pathology (e.g.intraocular tumour or cataract).

Also esotropia may be

1-concomitant: In which the variability of the angle of deviation is within 5 Δ in different horizontal gaze positions.

2-incomitant. In which the angle differs in various positions of gaze as a result of abnormal innervation or restriction.

Early-onset esotropia

Up to the age of 4 months, infrequent episodes of convergence are normal but thereafter ocular misalignment is abnormal.

Early-onset (congenital, essential infantile) esotropia is an idiopathic esotropia developing within the first 6 months of life in an otherwise normal infant with no significant refractive error and no limitation of ocular movements.

Signs

• The angle is usually fairly large (>30 Δ) and stable.

• Fixation in most infants is alternating in the primary position

• There is cross-fixating in side gaze, so that the child uses the left eye in right gaze and the right eye on left gaze Such cross-fixation may give a false impression of bilateral abduction deficits, as in bilateral sixth nerve palsy.

• Abduction can usually be demonstrated, either by the doll's head manoeuvre or by rotating the child.

• Should these fail, uniocular patching for a few hours will often unmask the ability of the other eye to abduct.

• Nystagmus is usually horizontal.

• Latent nystagmus (LN) is seen only when one eye is covered and the fast phase beats towards the side of the fixing eye. This means that the direction of the fast phase reverses according to which eye is covered.

• Manifest latent nystagmus (MLN) is the same except that nystagmus is present with both eyes open, but the amplitude increases when one is covered.

• The refractive error is usually normal for the age of the child (about +1 to +2 D).

• Inferior oblique overaction may be present initially or develop later.

• Dissociated vertical deviation (DVD) develops in 80% by the age of 3 years.

• **Differential diagnosis** includes bilateral congenital sixth nerve palsy, secondary (sensory) esotropia due to organic eye disease, nystagmus blockage syndrome in which convergence dampens a horizontal nystagmus and mechanical limitations of eye movement such as Duane and Möbius syndromes and strabismus fixus.

Initial treatment

Early ocular alignment gives the best chance of the development of some degree of binocular function. Ideally, the eyes should be surgically aligned by the age of 12 months and at the very latest by the age of 2 years, but only after

amblyopia and any significant refractive error have been corrected. Evidence is accumulating that surgical alignment even earlier than 12 months of age may achieve a superior sensory outcome and improved binocular cooperation.

• An acceptable goal is alignment of the eyes to within 10 Δ, associated with peripheral fusion and central suppression.This small-angle residual strabismus is often stable, even though bifoveal fusion is not achieved.

Subsequent treatment

• Under-correction may require further surgery

• Inferior oblique overaction may develop subsequently, most

commonly at age 2 years . The parents should therefore be warned that further surgery may be necessary despite an initially good result. Initially unilateral, it frequently becomes bilateral within 6 months. Inferior oblique weakening

procedures include disinsertion, recession and myectomy.

• DVD is characterized by up-drift with excyclorotation (extorsion) of the eye when under cover, or spontaneously during periods of visual inattention. When the cover is removed the affected eye will move down without a corresponding down-drift of the other eye. It is usually bilateral.

Surgical treatment may be indicated for psychosocial reasons.

• Amblyopia subsequently develops in about 50% of cases as unilateral fixation preference commonly develops postoperatively.

• An accommodative element should be suspected if the eyes are initially straight or almost straight after surgery and then start to become convergent. Regular refraction is therefore important.