Exotropia

Exotropia is a manifest outward deviation of the visual axes. It may be:

1-primary: may be constant or intermittent.

2- secondary (associated with poor vision).

3- consecutive (may follow an esotropia with time or after surgery.

As with all strabismus, the assessment should include :

*refraction,

*full ophthalmic examination

*and managing of amblyopic risk

It is essential to detect underlying pathology (e.g. intraocular tumor, cataract).

Exotropia can be the manifestation of intracranial or intraocular disease,
so, consider neuroimaging by way of investigation.

Constant (early-onset) exotropia

- **Presentation** is often at birth(2-6) m
- **Signs**
- ○ Normal refraction.
- ○ Large and constant angle.
- ○ DVD may be present.
- **Neurological anomalies** are frequently present, in contrast with infantile esotropia.
- **Treatment** is mainly surgical and consists of lateral rectus recession and medial rectus resection.
- **Differential diagnosis** is secondary exotropia, which may conceal serious ocular pathology.

Basic exotropia

• Constant exotropia for near and distance, presenting after 6mo of age.

• *Treatment* is usually surgical (e.g. unilateral LR recession + MR resection).

Intermittent exotropia: This is the commonest form of exotropia.

- ***Diagnosis***
- ○ **Presentation** is often at around 2 years with exophoria, which breaks down to exotropia under conditions of visual inattention, bright light (resulting in reflex closure of the affected eye), fatigue or ill health.
- ○ **Signs.** The eyes are straight with BSV at times and manifest with suppression at other times .
- Control of the squint varies with the distance of fixation and other factors such as concentration.

- *TIP Children with intermittent exotropia tend to close an eye when exposed to bright light.*

a. There are three phases:

• Phase 1: One eye turns out at distance □xation, spontaneously or when it is covered. Usually occurs when the patient is fatigued, sick, or not attentive. The eyes become straight within one to two blinks or when the cover is removed. The eyes are straight at near □xation. Patient often closes one eye or squints in bright sunlight. This is likely due to dissociation and breakdown of their binocular alignment.

• Phase 2: Increasing frequency of exotropia at distance □xation. Exophoria begins to occur at near fixation.

• Phase 3: There is a constant exotropia at distance and near fixations.

b. These phases can be seen in all four types of intermittent exotropia:

Intermittent exotropia.

(A) *Eyes straight most ofthe time;*

(B) *left exotropia under conditions of visual inattention*

or fatigue

classification

- • **Distance excess** exotropia, in which the angle of deviation is greater for distance than near and increases further beyond 6 metres.
- Simulated and true forms are recognized.
- ○ *Simulated (formerly pseudo-divergence excess)* is associated with a high AC/A ratio or with 'tenacious proximal fusion' (TPF – tonic fusional convergence that relaxes after occlusion). The distance angle initially seems to be larger than the near angle, but the deviation for near and distance
- is similar when the near angle is remeasured with the patient looking through +3.00 D lenses (high AC/A controlling exodeviation) or after 30–60 minutes of uniocular occlusion to relax TPF, the latter with a normal AC/A ratio).
- ○ *True.* The angle for near remains significantly less than that for distance with the above tests.
- • **Basic** exotropia, in which control of the squint and the angle of deviation are the same for distance and near fixation.
- • **Convergence insufficiency** exotropia, in which the deviation is greater for near fixation. It tends to occur in older children and adults and may be associated with acquired myopia or presbyopia.

Treatment

1. Evaluate visual acuity of each eye, with correction and pinhole, to evaluate for amblyopia. Color vision and stereopsis.

2. Perform motility examination; observing for restricted eye movements or signs of Duane syndrome.

3. Measure the exodeviation in all cardinal fields of gaze at distance and in primary position (straight ahead) at near, using prisms.

4. Refraction (cycloplegic or manifest depending on age of the patient).

5. Consider an MRI of the brain and orbits when neurologic or orbital disease is suspected.

In all cases, correct significant refractive errors and treat amblyopia.

- Phase 1: Follow patient closely.
- Phase 2: Muscle surgery may be considered to maintain normal binocular vision.
- Phase 3: Muscle surgery is often indicated at this point. Bifixation or peripheral fusion can occasionally be attained.

Treatment

• • **Spectacle correction** in myopic patients may, in some cases, control the deviation by stimulating accommodation and with it, convergence. In some cases over-minus prescription may be useful.

• • **Part-time occlusion** of the non-deviating eye may improve control in some patients and orthoptic exercises may be helpful for near exotropia.

• • **Surgery.** Patients with effective and stable control of their intermittent exotropia are often just observed. Surgery is indicated if control is poor or is progressively deteriorating.

• Unilateral lateral rectus recession and medial rectus resection are generally preferred except in true distance exotropia when bilateral lateral rectus recessions are more usual. Similar results are achieved with either approach. The exodeviation is rarely completely eliminated by surgery.

Convergence insufficiency:

• in which the deviation is greater for near fixation. It tends to occur in older children and adults and may be associated with acquired myopia or presbyopia.

• *Treatment*

• • Full myopic correction; convergence exercises (e.g. pencil push-ups);

• consider prisms, botulinum toxin, or surgery for more severe cases.

Secondary exotropia

Sensory exotropia

Secondary (sensory) exotropia is the result of monocular or binocular visual impairment by acquired lesions, such as cataract, corneal scarring or other media opacity.

Treatment

consists of correction of the visual deficit, if possible, followed by surgery if appropriate. A minority of patients develop intractable diplopia due to loss of fusion, even when good VA is restored to both eyes and the eyes are realigned.

Consecutive exotropia

Consecutive exotropia develops spontaneously in an amblyopic eye, or more frequently following surgical correction of an esodeviation. In early postoperative divergence, muscle slippage must

pseudoexotropia

Table 17.6 Causes of pseudosquint

	Pseudoesotropia	Pseudoexotropia
Specific	Epicanthic folds	Wide IPD
	Narrow IPD	Positive angle kappa
	Negative angle kappa	
General	Face—asymmetry	
	Globe—proptosis/enophthalmos	