6.8.3. Esodeviations (III): Acquired Nonaccommodative Esotropias

- **Basic Acquired Nonaccommodative Esotropia**
  - .> age 6 months
  - ± acute onset
    - precipitating factor
      - temporary but prolonged disruption of binocular vision
        - hyphema
        - preseptal cellulitis
        - mechanical ptosis
        - prolonged patching
        - tenuous fusion!
    - patient immediately becomes aware of deviation
    - ± diplopia
  - comitant
  - no accommodative component
    - hyperopia is not significant
    - deviation is similar at distance and near
    - careful motility evaluation is important to rule out an accommodative or paretic component
  - onset of nonaccommodative esotropia in an older child may be a sign of an underlying neurologic disorder
    - neuroimaging and neurologic evaluation may be indicated when other symptoms or signs of neurologic abnormality are present
      - lateral incomitance
      - deviation greater at distance than near
      - abnormal head position
      - diplopia
      - concomitant headache
  - treatment
    - amblyopia treatment
    - surgical correction
    - botulinum toxin injection
    - as soon as possible after the onset of the deviation
    - smaller undercorrection rate (≤10%) with surgery based on the prism-adapted angle
  - many patients with acquired nonaccommodative esotropia have a history of normal binocular vision
    - good prognosis for restoration of single binocular vision with prisms and/or surgery
  - references
- **Cyclic Esotropia**
  - rare
    - 1:3000–1:5000 strabismus cases
  - Onset typically during preschool years
  - occurs intermittently, usually every other day (48-hour cycle)
    - Variable intervals
    - 24-hour cycles
  - comitant
  - Fusion and binocular vision are usually absent/defective on strabismic day
    - ± diplopia
      - more prominent in older patients
  - marked improvement or normalization on orthotropic day
  - occlusion therapy may convert the cyclic deviation into a constant one
  - surgical treatment of cyclic esotropia is usually effective
    - based on the maximum angle of deviation present when the eyes are esotropic
- **Sensory Esotropia**
  - deprivation esotropia
  - monocular vision loss
  - restoration of the best-possible visual input must be accomplished at an early age if irreversible amblyopia is to be avoided
  - if surgery or botulinum toxin injection is indicated for strabismus, it is generally performed only on the eye with a significant deficit
- **Divergence Insufficiency**
  - fusional divergence is reduced
  - divergence paralysis
    - more severe form of divergence insufficiency
  - esodeviation greater at distance than at near
  - comitant in vertical and horizontal gaze
  - 2 forms
    - primary, isolated form
      - benign condition
      - .>50 years
      - symptoms sometimes resolve within several months
    - secondary form
      - pathogenesis
        - associated with neurologic abnormalities
          - pontine tumors
          - increased intracranial pressure
          - severe head trauma
        - sixth nerve paresis that is so mild that abduction deficit has not yet become clinically evident
      - require neuroimaging
      - treatment
        - treatment of the underlying neurologic disorder
        - base-out prisms
        - botulinum toxin injection of the medial rectus muscles
        - strabismus surgery
- **Consecutive Esotropia**
  - types
    - spontaneous
      - esotropia following a history of exotropia
      - rare
      - neurologic disorders
        - cerebral palsy
      - very poor vision in 1 eye
    - after surgery for exotropia
      - not uncommon
      - often resolves over time
        - an initial small overcorrection is desirable after surgery for exotropia, as it is associated with an improved long-term success rate
  - Treatment
    - hyperopic correction
    - base-out prisms
    - alternating occlusion
    - botulinum injection
    - strabismus surgery
      - in postsurgical consecutive esotropia surgery or botulinum toxin injection should be postponed for several months
        - unless the deviation is very large or a slipped or lost muscle is suspected
    - slipped or lost lateral rectus muscle
      - varying amounts of esotropia
      - should be suspected following lateral rectus recession surgery if a significant abduction deficit is present
        - if the ipsilateral medial rectus muscle was resected at the time of the lateral rectus recession, the consecutive esotropia could be due to a tight medial rectus muscle
          - forced-duction testing helps differentiate between these two causes
      - surgical exploration is required
        - for slipped muscles, the true muscle should be identified and secured back to the sclera
        - transposition procedures may be necessary when lost muscles cannot be found
- **Spasm of the Near Reflex**
  - etiology
    - psychological factors
      - stress
      - anxiety
    - organic disease
      - rare
  - varying combinations of excessive
    - convergence 1
      - acute esotropia alternating at other times with orthotropia
      - substitution of a convergence movement for a gaze movement on horizontal versions is characteristic
      - monocular abduction is normal in spite of marked abduction limitation on version testing
    - accommodation 2
      - pseudomyopia
    - miosis 3
  - treatment
    - cycloplegic agents
      - atropine
      - homatropine
    - hyperopic correction for patients with significant hyperopia
      - bifocals
    - counseling to address underlying issues
    - considered with caution if spasm cannot be broken
      - botulinum toxin injections of the medial rectus muscles
      - strabismus surgery

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