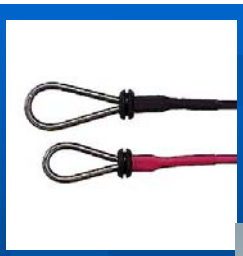
Emg in pediatria

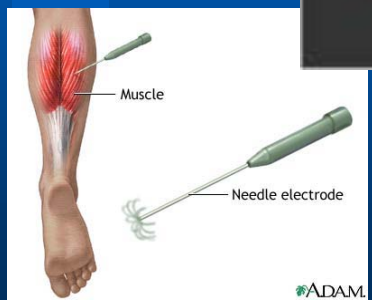
dr. Renzo Bassi
Bussolengo VR

Appunti

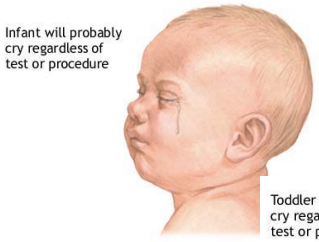


Materiale particolare :
Elettrodi e stimolatori

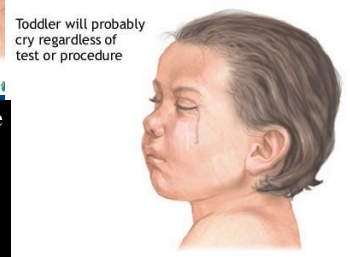
Pianificare l'esame:
Prima la neurografia



Poi emg ad ago,
se indispensabile



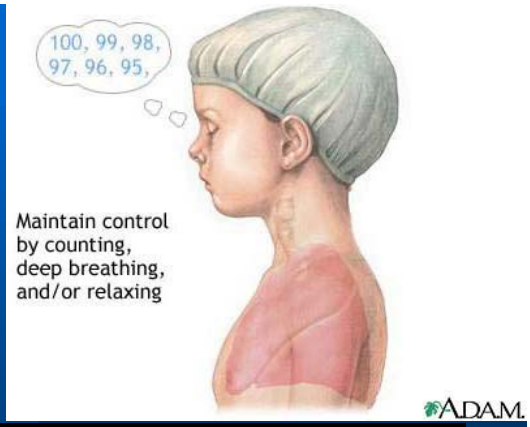
Impossibile la cooperazione
nei bambini piccoli



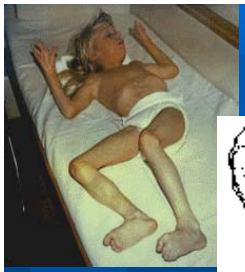
Prepararsi a farsi aiutare
da genitori e nurses

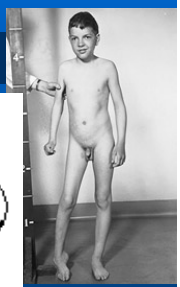
Far velocemente

Programmare bene

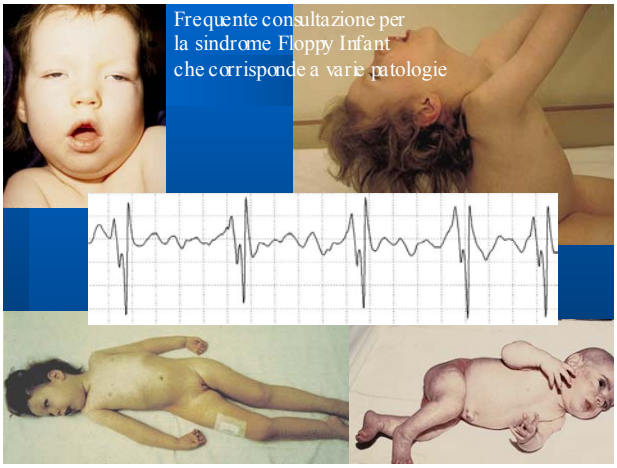


Tecniche di coping nei bambini più grandicelli



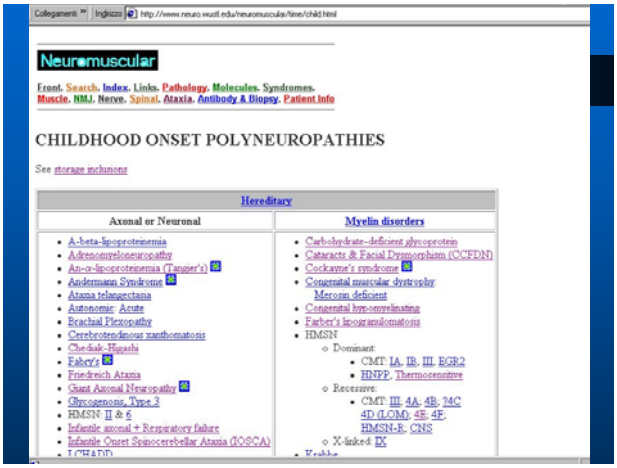


Patologie particolari ed
esame neuromuscolare
peculiare delle varie età



Some illnesses that present as an acute floppy infant are not found in the differential diagnosis of motor unit disorders in the older child or adult.

These include spinal muscular atrophy, postvaccine poliomyelitis, intrauterine GBS, infantile botulism, and severe myopathies, such as myotonia dystrophy, and some glycogen storage diseases. An appreciation of the neurophysiological maturational norms is essential to an effective pediatric EMG consultation for children ages 0-3 years. Additionally, the neuromuscular complications of extended intubation and sepsis in children are gaining broader recognition. An increased dialogue between clinical neurophysiologists and pediatric neurologists and intensivists in both neonatal and pediatric intensive care units is essential.



Carpal Tunnel in Childhood

A number of conditions predispose children to developing CTS. These conditions include the lysosomal storage diseases, a multigenerational history of CTS, and macrodactyly.

EMG Evaluation of Suspected Cases of Infant Botulism

EMG standard battery

Motor and sensory nerve conduction velocity in one arm and one leg
Two-Hz nerve stimulation to two distal muscles
Supramaximal single nerve stimulation, followed by 50-Hz tetanization for 10 seconds and immediately thereafter by single nerve stimuli at 30-second intervals until amplitude of compound muscle potentials return to baseline

Diagnostic triad for infant botulism

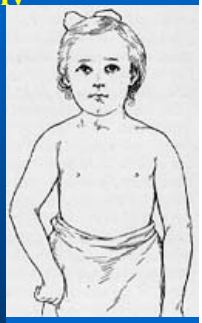
Compound muscle action potentials of decreased amplitude in at least two muscle groups
Tetanic and post-tetanic facilitation defined by an amplitude of more than 120 percent of baseline
Prolonged post-tetanic facilitation of more than 120 seconds and absence of post-tetanic exhaustion

Neonatal Brachial Plexopathy

•Incidence
•0.4 to 1 per 1,000 live births
•Lower with Cesarian section

•Distribution

•Erb's Palsy (C5, C6 ± C7): 80% to 90%
•Total plexus: 6% to 10%
•Klumpke's palsy (C8 & T1): 1%
•Diaphragm (Phrenic): 1% to 5%
•Horner's: 5% to 30%
•Right slightly more common than left
•Bilateral: 10% to 20%

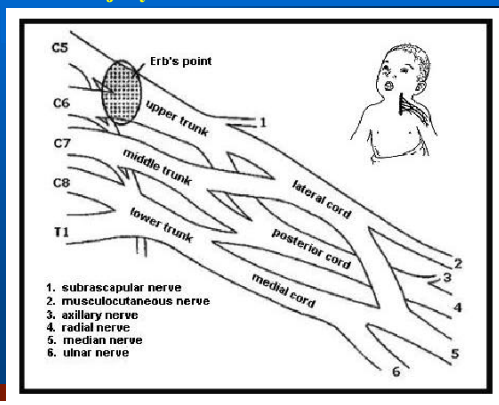


EMG studies have indicated an *in utero* cause in some cases.

Associated features

- Fractures: Clavicle (10%); Humerus (10%)
- Cervical spine subluxation or cord injury: 5% to 10%
- Other nerve palsies
  - Facial palsy: 3% to 20%
- Fetal
  - High birth weight (> 90th centile)
  - Prolonged delivery & fetal distress
  - Abnormal presentation: Breech; Shoulder dystocia (60%)
- Increased risk of 2nd event with succeeding births
- No associated feature: 6%
  - Prognosis
    - Spontaneous recovery
      - 50% at 6 months
      - ~ 90% of upper plexus palsies at 1 year
      - Less with extensive lesions
      - More with neurapraxia on nerve conduction studies
  - Pathogenesis
    - Stretching brachial plexus by lateral traction
  - Management
    - Prevent contractures
    - ?? Surgery in patients with poor recovery
  - Variant
    - Prenatal weakness: 1 patient described

Upper root palsies are the most common type of brachial plexus birth injury and occur in 73% -86% of the cases.



Alcuni consigli utili

- Usare uno stimolatore pediatrico più stretto
- Usare un elettrodo ad anello per riferimento
- Usare il tibiale posteriore per primo nervo
- Se non si registra un SAP provare un NAP
- prima dell'emg ad ago puoi usare crema di lidocaina con bendaggio compressivo per raggiungere una ipoestesia della cute