What is the role of Halo Traction in Early Onset Scoliosis?

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Traction remains an important option for the treatment of children with spinal disorders. Halo-gravity traction can restore coronal and sagittal balance in severely decompensated curves and may decrease the neurologic risks associated with the surgical correction of these severe deformities, be it by casting, subcutaneous rods,

Patient Selection

• Severe and rigid scoliosis or kyphosis prior to surgery
• Some patients with early scoliosis as a preliminary to casting with the goal of delaying surgery
• Young patients with severe respiratory compromise or secondary cor pulmonale may benefit from a period of preoperative traction to allow aggressive pulmonary toilet, improvements in vital capacity, arterial blood gases, and right heart failure. This may decrease postoperative complications and can help with selection of the most appropriate treatment in difficult cases.

Technique:

• Halo gravity with number of pins appropriate to age – I prefer more pins rather than less
  - 12 pins at 1 lb for 1 yr and below
  - 4 pins at 8 lbs for adult
  - Split the difference in between – often 6-8 pins
• Typically start at 5 lbs and then gradually increase weight every few days up to 50% body weight
• Halo walker and wheelchair

• Check cranial nerves (6 is first to go) and extremity function during weight increases.

• Periodic neck x-rays looking for over distraction

• Minimal traction at night

• Emans trick of halo vest with traction – otherwise use a c-collar when out of traction for neck stability

• Hypertension can be a sign of over distraction

• Many patients can go home

• I prefer 2-4 months of traction
  - Work on pulmonary and nutritional issues

**Problems:**

• Improper halo – sometimes hard to find pediatric halos – need those with holes all around

• Over distraction – check nerves and x-rays

• Pin site problems – more pins help. Soap and water and showers. Abx occasionally

• Lack of correction
  - More common with prior surgery and unrecognized fusions

• Difficult families
  - Traction leads to close interaction and can help sort out issues

• Instability out of traction – halo vest or collar
References:

