

# CLOSED REDUCTION OF THE CERVICAL SPINE - PROTOCOL

## Standard Equipment

Review full protocol and end points prior to commencing protocol

### Stage 1 – Patient positioning and Gardner-Well tongs application

1. Complete equipment checklist
2. Patient positioned supine on Howard Wright bed with head support and immobilisation collar. Traction cage set up as demonstrated.
3. Hair shaved in 5cm radius from external auditory meatus
4. Pin sites marked as discussed with on call spinal specialist
5. Assemble Gardner-Wells tongs
  - a. Slide S hook onto Gardner-Wells tongs (this may require one pin to be removed)
  - b. Pins should start from even positions with lock nut on OUTSIDE of tongs
6. Collar removal and manual maintenance of head position by assistant or towels/sandbags
7. Pin site skin prepped with chlorhexidine and 5-10mL 1-2% lignocaine without adrenaline infiltrated into pin site
  - a. 1cm longitudinal skin incision made using 11 blade at marked pin site
8. Tongs held in position by senior clinician, pins evenly tightened symmetrically by assistant.
  - a. Pins tensioned using fingers into skull until spring loaded indication protrudes 1 mm above the surface (equivalent 139 Newtons)
  - b. Lock nuts are tightened onto outside of tongs using spanner
9. Patient position checked, rope run through pulley and weight spike attached
10. X-ray C-arm positioned and initial X-ray obtained ensuring visualisation of bony abnormality

### Stage 2 – Traction application

***Analgesia and sedative given as required – patient to remain able to report neurological symptoms***

1. Brief neurological exam focused on identified deficits
  - a. Subjective report
  - b. Distal light touch
  - c. Gross finger and toe movement
2. **Initial weight:** 2-4kg (5-10lb)
  - a. Brief neurological exam and lateral cervical spine X-ray
  - b. Pin sites checked
3. **Increment** 2-4kg (5-10lb) every 5 minutes
  - a. Brief neurological exam and lateral cervical spine X-ray
  - b. Repeat until maximum weight or other end point
4. Reverse Trendelenberg can provide counter traction using patients body weight

## **END POINTS**

### **Reduction successful**

- Reduce traction weight gently to 1kg per vertebrae above injury level and add slight extension to cervical spine position
- Contact OCSS and continue definitive management planning

### **Maximum traction weight reached without reduction**

- Reduce traction weight gently to 1kg per vertebrae above injury level
- Contact OCSS, expedite transfer

### **Tip to tip/locked facet joints**

*Undertake manual manipulations only if experienced in doing so*

- Do not add further traction weight
- Undertake manual manipulations if experienced in doing so
  - Manual traction added to Gardner-Wells tongs on at unreduced facet side
  - Add manual rotating force to manual distraction force, rotating head 40 degrees as tolerated **towards** side of dislocation

### **Radiological evidence of over distraction**

- Reduce traction weight until over distraction resolved
- Contact OCSS, expedite transfer

### **Neurological deterioration**

- Reduce traction weight until new neurological deficit resolves
- Contact OCSS, consider urgent MRI or expedite transfer