

# Halo

## Mysticism Explained



G S Roysam

## Cervical Immobilization



Prevent further damage  
Protect uninjured cord

### Simple & Reliable

Two sandbags  
Phili collar  
Spine board  
Tape

Soft Collar : Useless

Hard Collar : Weaning phase



## Philadelphia Collar:

Useful in acute immobilization phase  
Through x-ray & evaluation phase  
Good extension control  
Overtime goes loose



## SOMI Brace:

Sternal, occipital, mandibular immobilizer  
4 post brace  
discomfort at chin and occiput  
allows more flx/ext compared to Phili



## Halo-vest :

When longer duration is required  
C5-T1 difficult to control (snake phenomenon)

# Halo Traction Contraindications



Type IIA : Hangman's



Occipito-cervical distraction injury

## Minimum Weight



## Max Weight



5 kgs for skull



For every vertebra add multiples of 2 kgs

C1 : 5 + 2 [7 kgs max]

C5 : 5 + 10 [15 kgs max]

- Closed manipulation awake patient - limited role

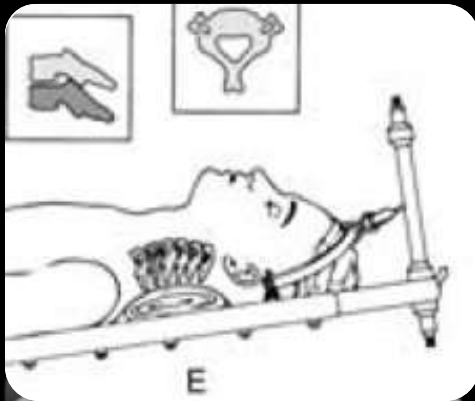
- Halo traction
  - Initial 7 kgs
  - In line with spine

Serially add 5 kgs  
X-ray every 20 mins  
Check neural status

**STOP** if there is neural deterioration

If facets are perched - add some flexion and weight

Once disengaged extend gently - reduce weights





## Stop Traction

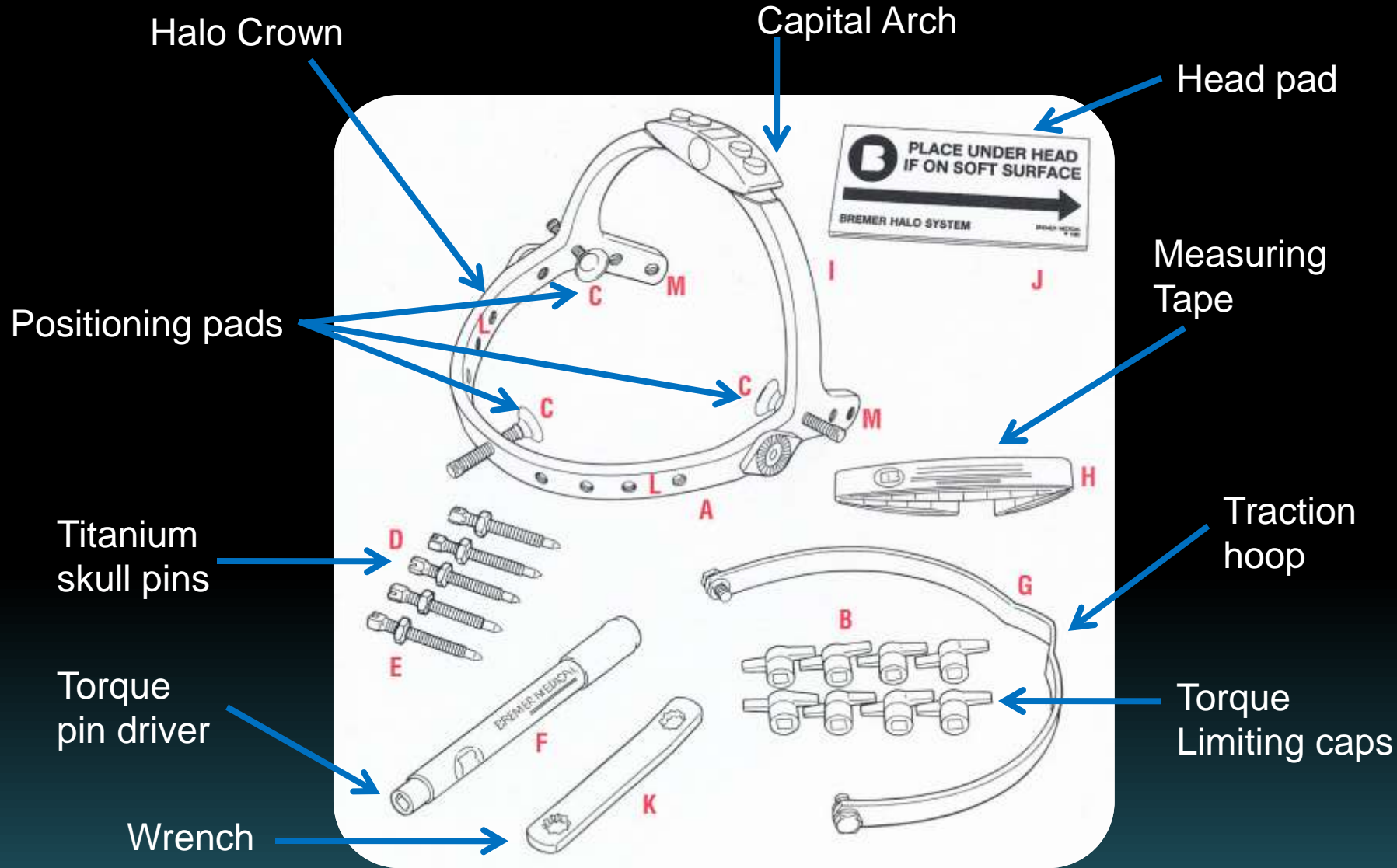
- When reduction is achieved
- Locked facets
- Dangerous distraction
- Worsening neurology
- Max 25 kgs is reached

## Complication of Halo

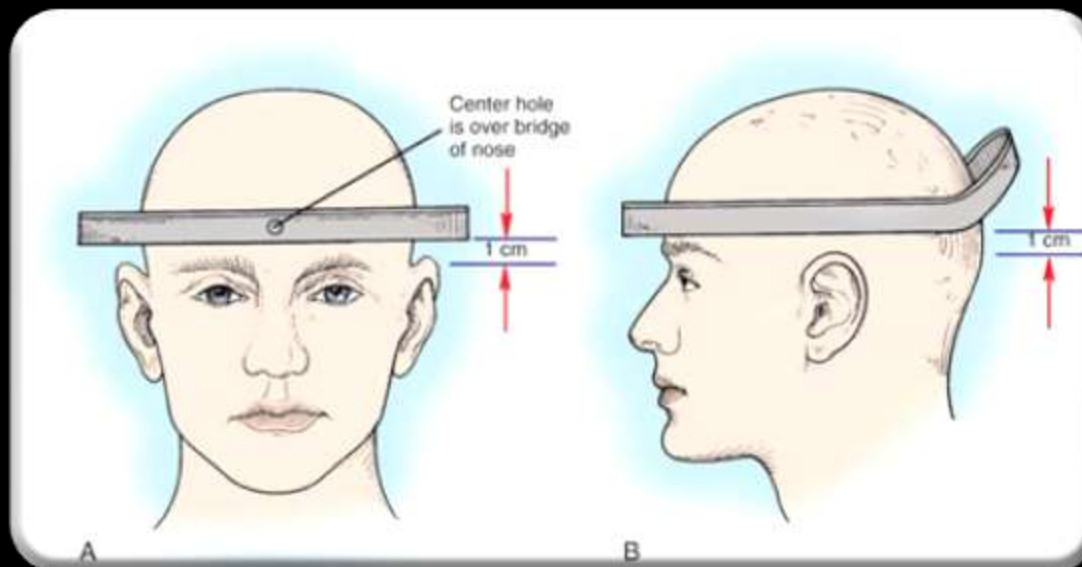


- Pin loosening (36%)
- Pin site infection (20%)
- Dural penetration (1%)
- Skull osteomyelitis / dural abscess
- Disfiguring scars (9%)
- Occipital pressure sores (11%)
- Nerve injury (2%)  
Abducens / Supra trochlear

# Bremer Halo Traction - Practicals



# Application of Halo



Minimum 2 people needed - 3<sup>rd</sup> useful to maintain the ring position at application

Ant pins : Middle to lateral third of eyebrow

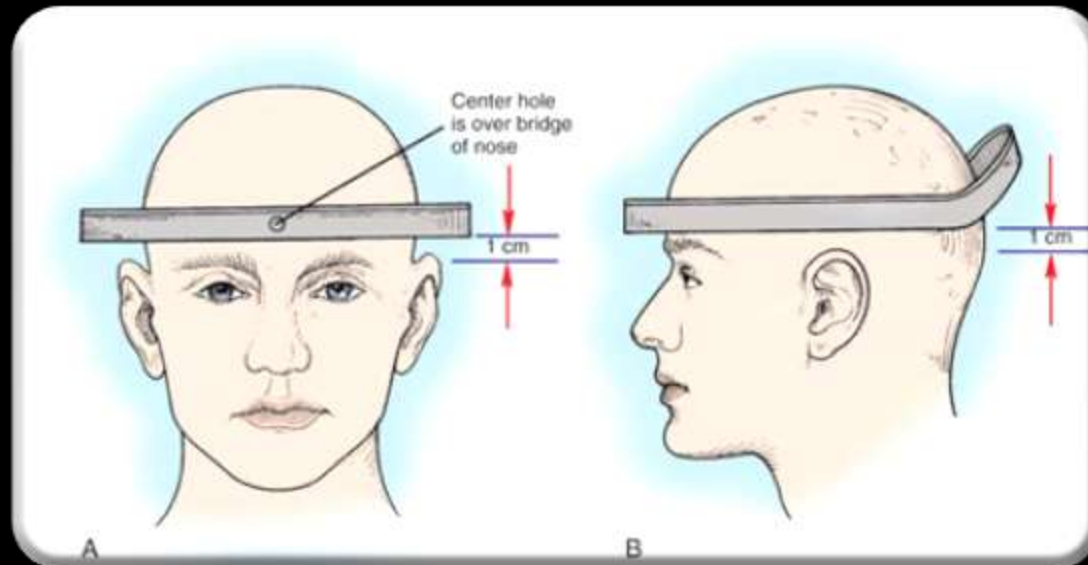
Too medial injury to Frontal sinus / Supraorbital & Supra trochlear ns

Too lateral injury to temporal artery

Eyes closed - avoid `pinging' Frontalis muscle

Post pins : 1 cm above the tragus - pins on mastoid bone

# After the application of Halo



Pins to be retightened in 24-48 hrs

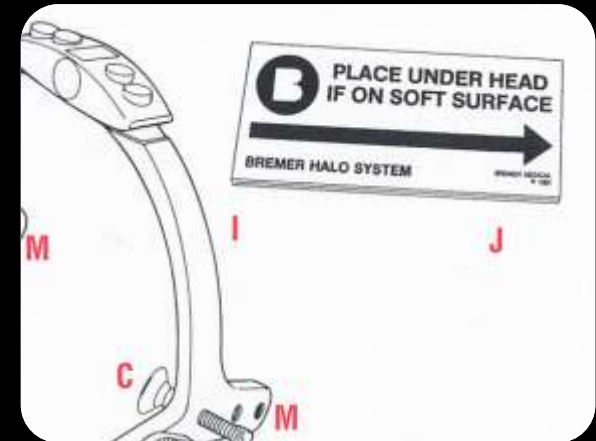
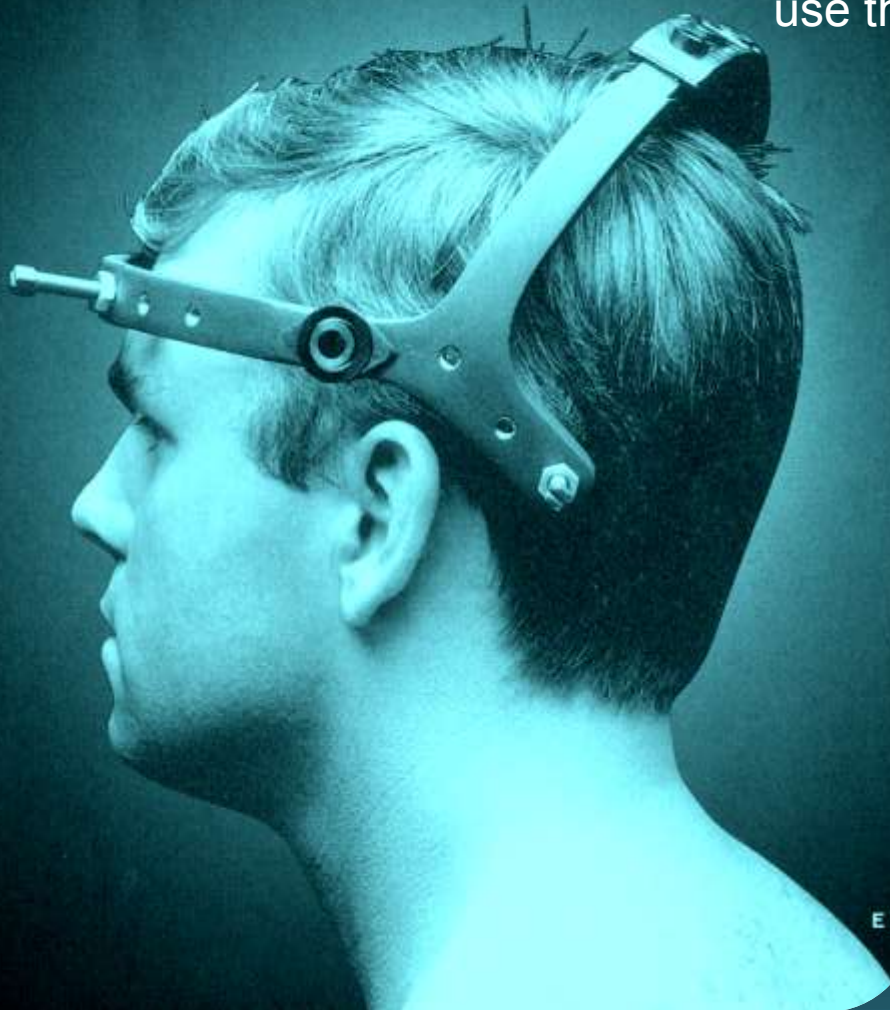
Adult 6-8lb/in : Child 4-6 lb/in

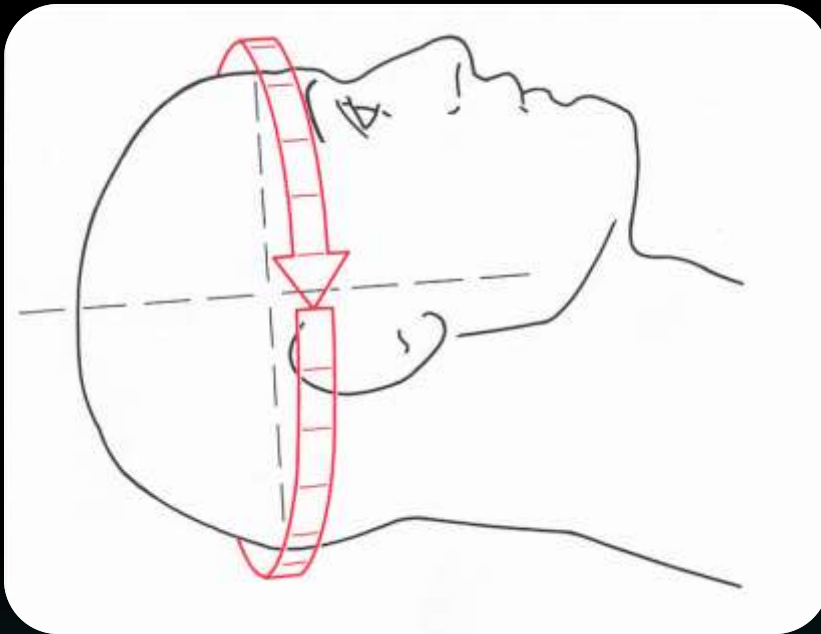
A pin without resistance must be changed to another position in skull

# Bremer Halo Traction - Practicals

Open back design eliminates the need for a 'head-spoon'

Halo crown applies easily when head is on a firm surface  
use the enclosed corrugated 'head pad'





Measure the circumference of head  
at the equator

Pull the tape tight over the hair

Use smallest possible size

Small : 48-58 cm

Large : 58-66 cm

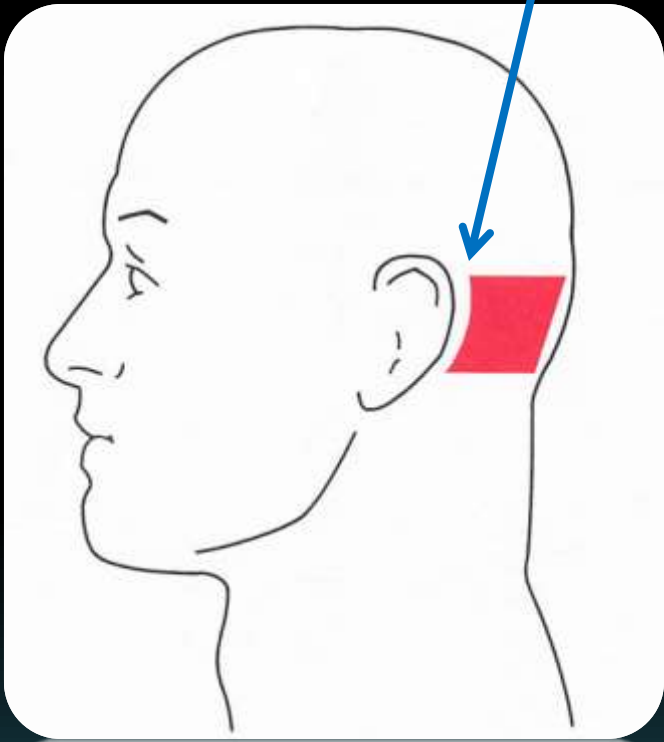
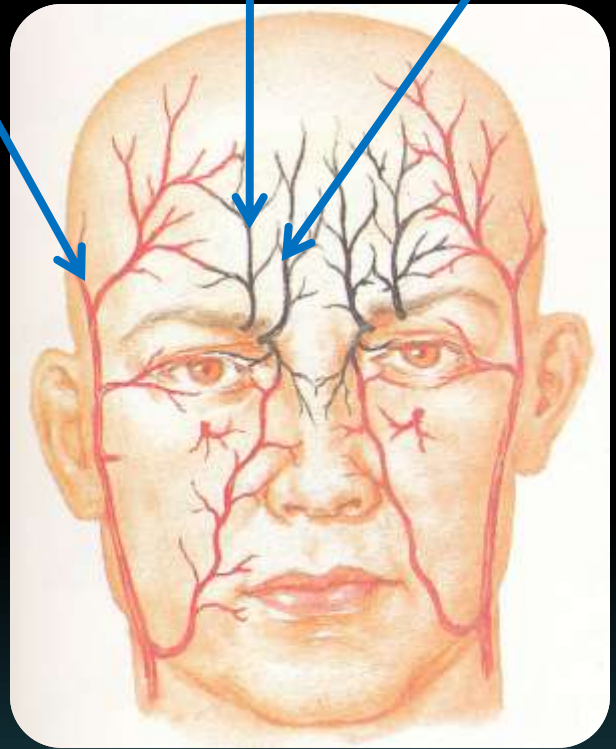
# Bremer Halo Traction - Practicals

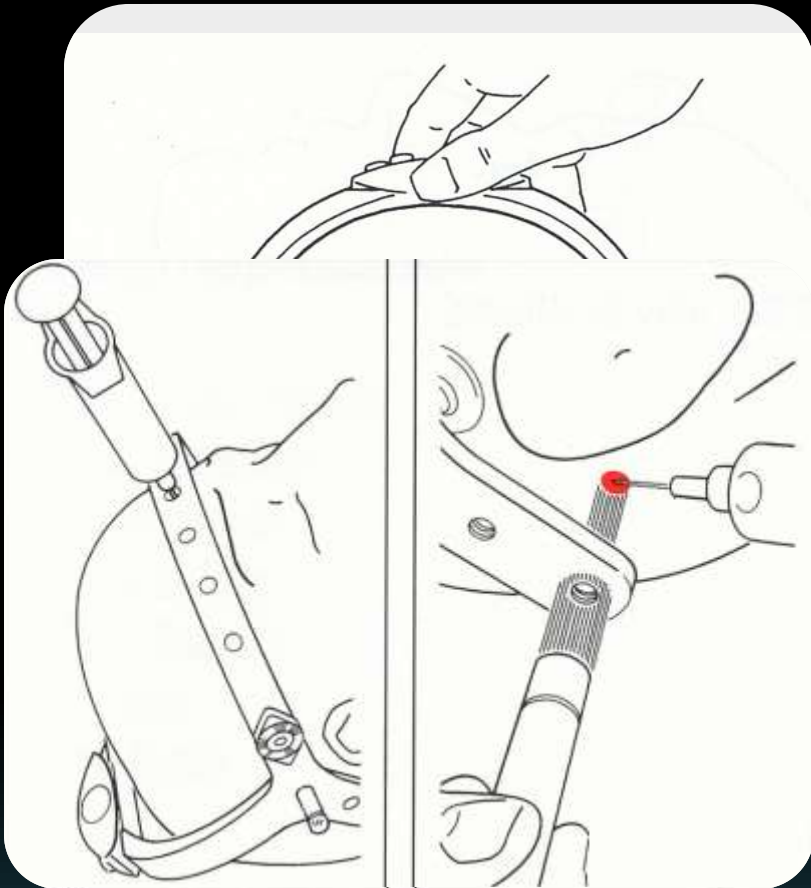
Temporal artery

Supra-orbital n

Supra-trochlear n

Safe Zone





Place the halo on patient's head

Adjust the position pads  
1 cm separation between the  
crown & head

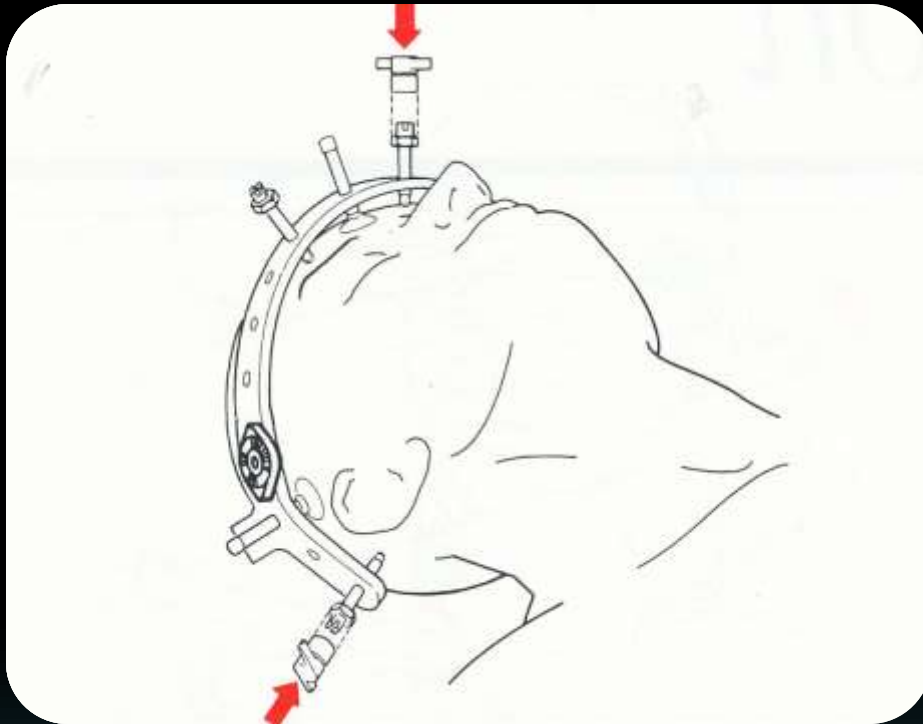
Snug position pads to maintain halo  
Position

1 cm at the pin sites

1 cm above the eye brows

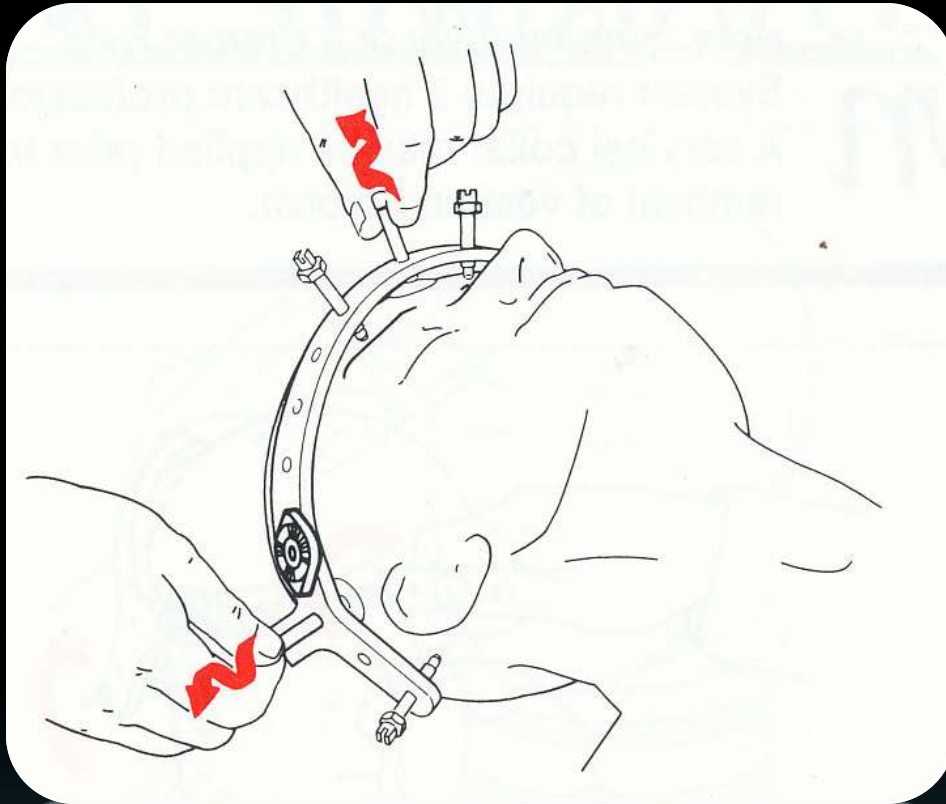
Not touching the ears

Posterior pin sites below the equator  
capital arch not touching the top  
of the head



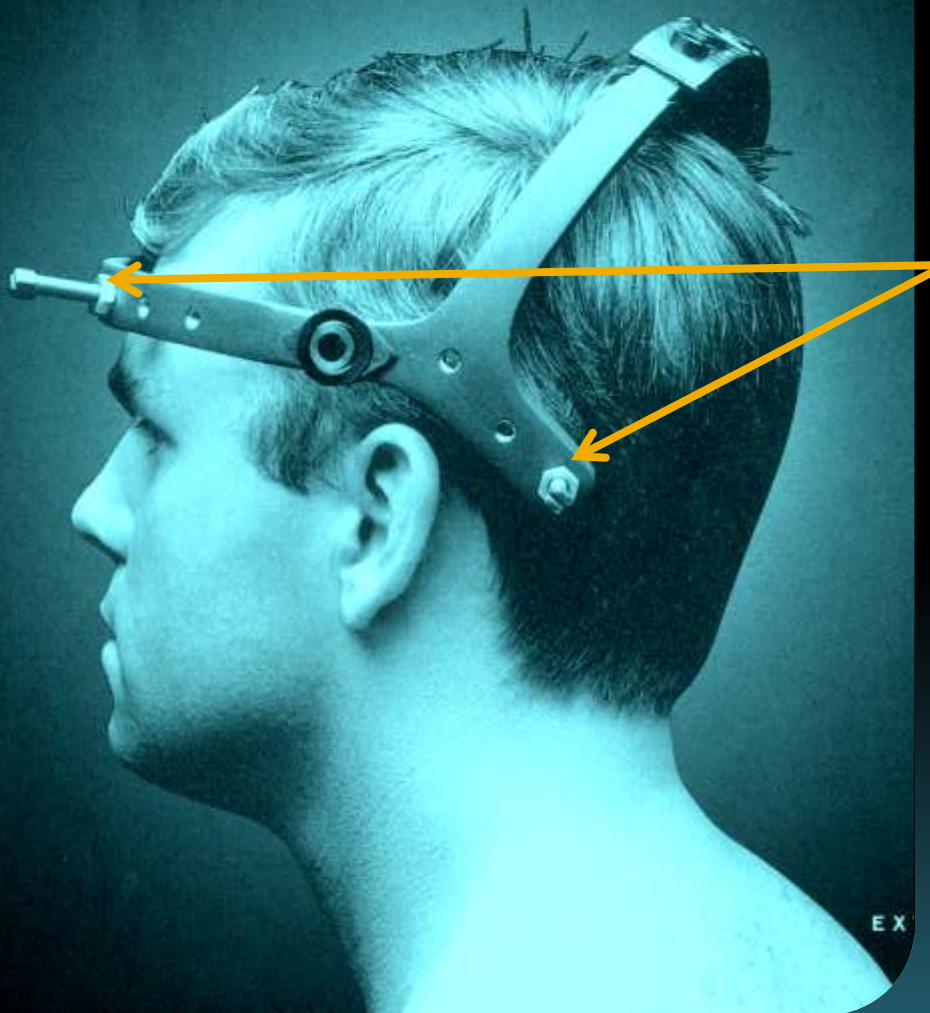
With patient's eyes closed  
maintaining halo position  
insert halo pins thru' the selected  
holes in halo  
Tighten the pins by hand until  
pins penetrate the skin

Place torque limiting caps on  
each of the four pins and  
simultaneously tighten the  
opposing pins slowly  
two turns at a time



Continue to alternate between Opposing pins, tightening two Turns each time until the torque Limiting caps break off.

Remove all three positioning Pads and pins and discard.



## Post Halo Application protocol

After 15 mins re-torque skull pins  
Using 4 remaining torque limiting  
Caps

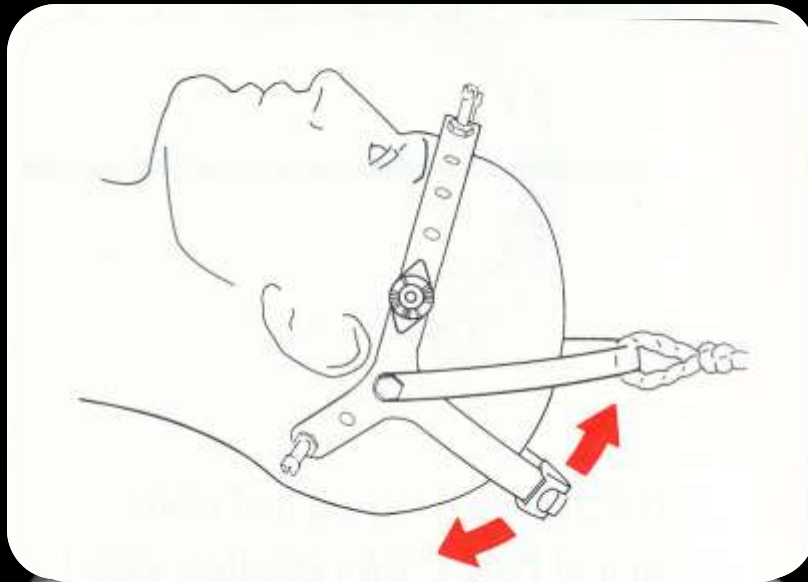
Firmly lock the nuts on all four  
pins against the halo crown  
With the supplied wrench

Pins should be re-torqued using  
the torque driver

At 24-48 hrs : 8lbs/in

Every 2-3 wks to 2-3 lbs/in

If patient complains of pain at pin  
site : suggests loosening :  
re-torque but not more than  
4lbs/in



Apply traction hoop attachment by placing the bolts in the holes at the junction of halo arch and capital arch

To adjust flexion/extension maintain head position loosening the traction hoop bolts

Now carefully rotate patient's head to desired position and retighten bolts



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