

Occipito-cervicalis rögzítés

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Indikáció- Cranocervical instabilitás

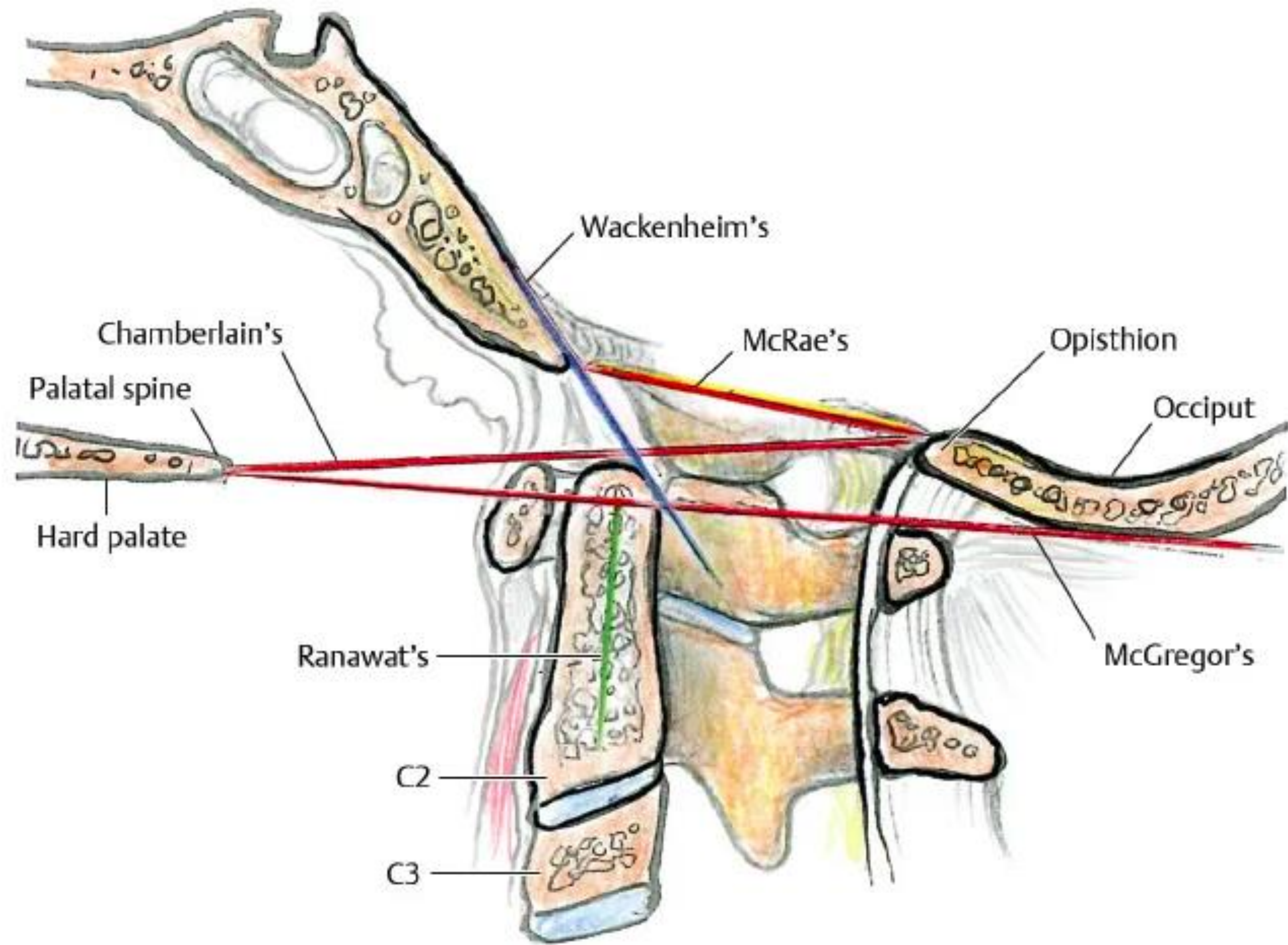
- Gyulladás
 - Tumoros
 - AI betegségek
 - Iatrogén
 - Veleszületett elváltozások (BI, Morquio's Sy)
 - Trauma
- Atlantooccipitalis, atlantoaxialis dislocatio
 - Occipitalis condylus törései
 - Atlas törései
 - Komplex axis törések

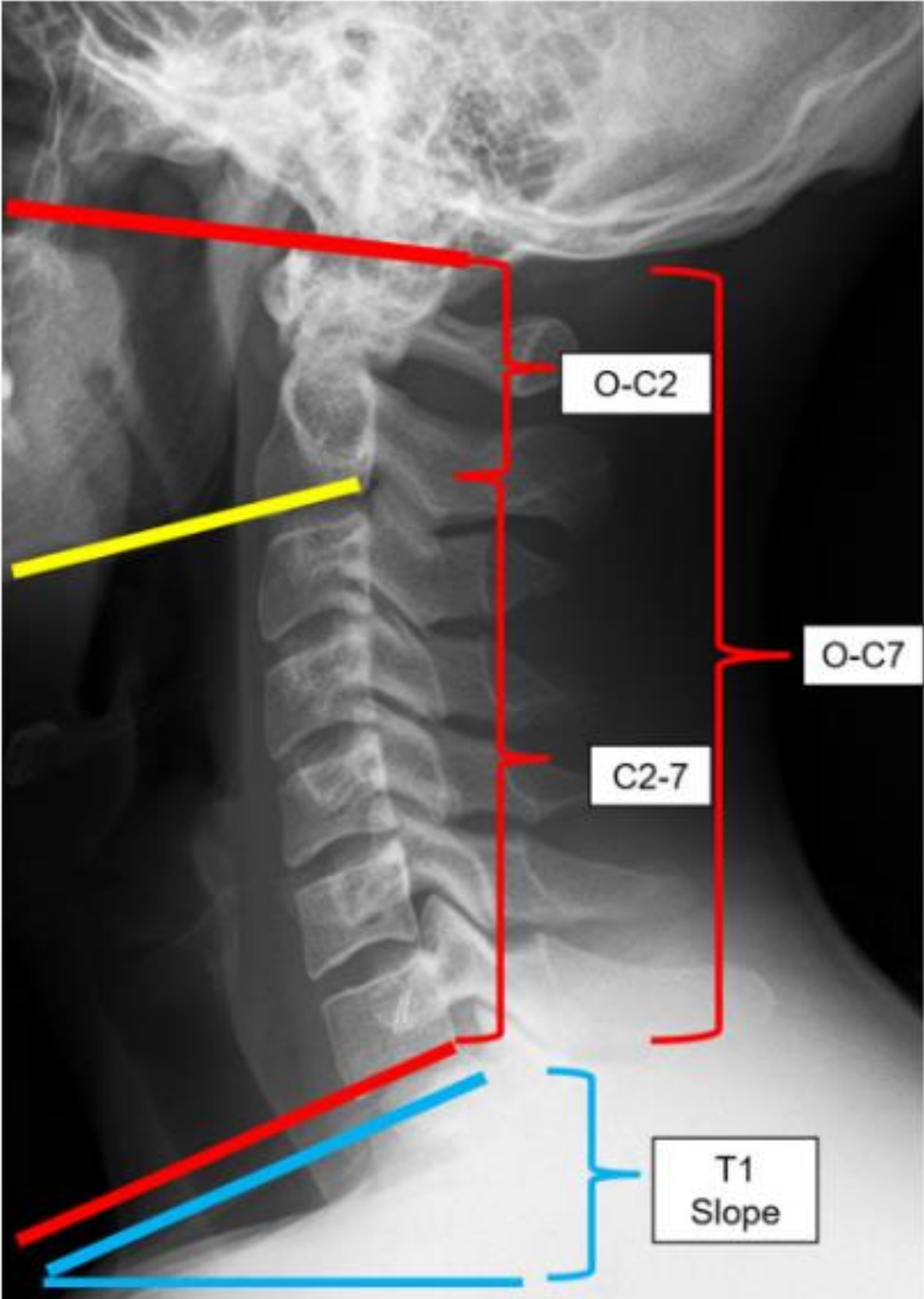
Tünetei

- Fejfájás
- Nehéz fej érzés
- Agyi köd
- Tachycardia, Postural Orthostatic Tachycardia Syndrome
- Nyak fájdalom
- Vizuális problémák

Műtét lépései

- Intubáció, gyakran fiberoszkóp
- Fektetés hason fekvő pozícióban. (HALO, Mayfield)
- Neutrális helyzet- a beteg a padlót nézze, látás, nyelés!



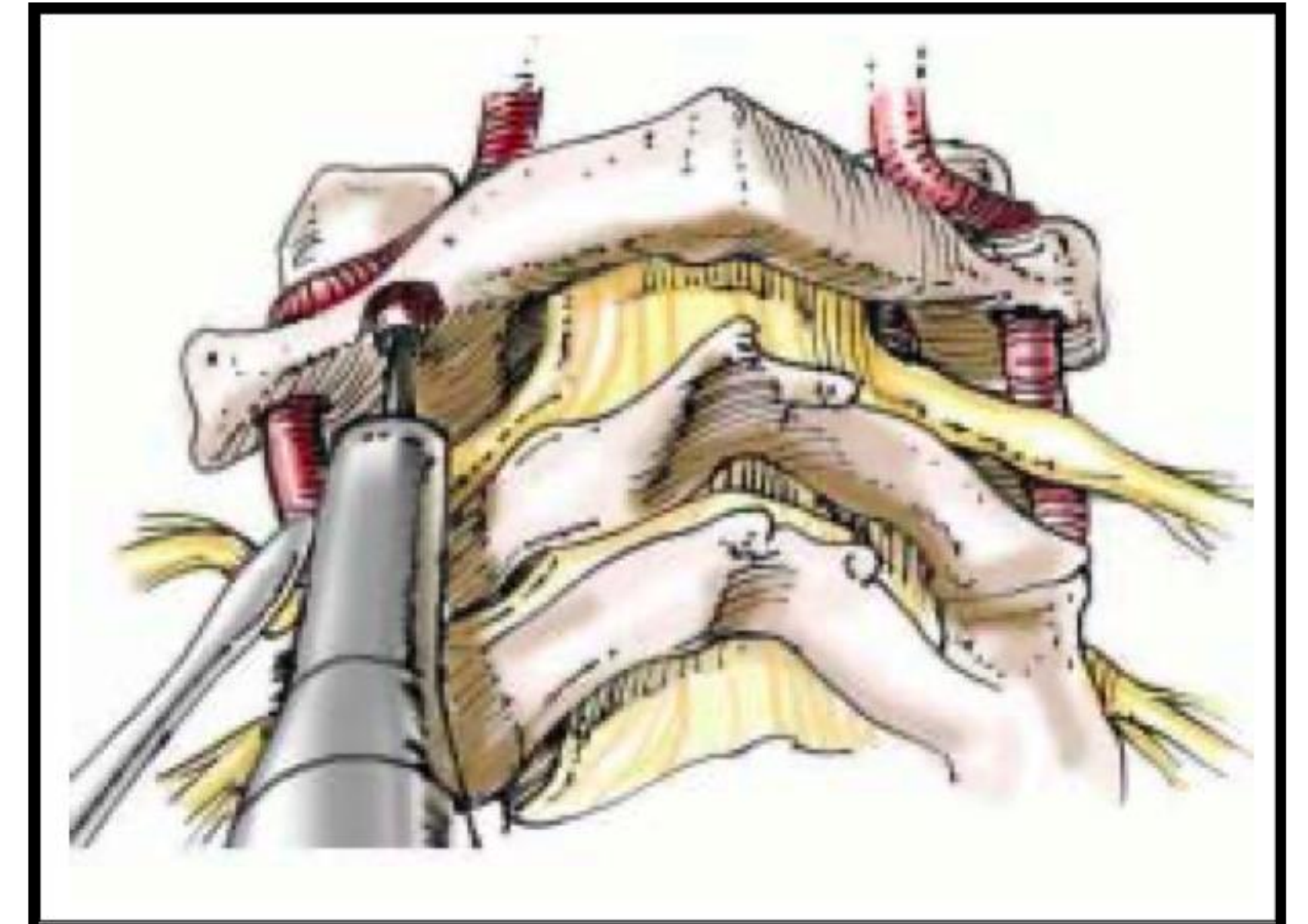
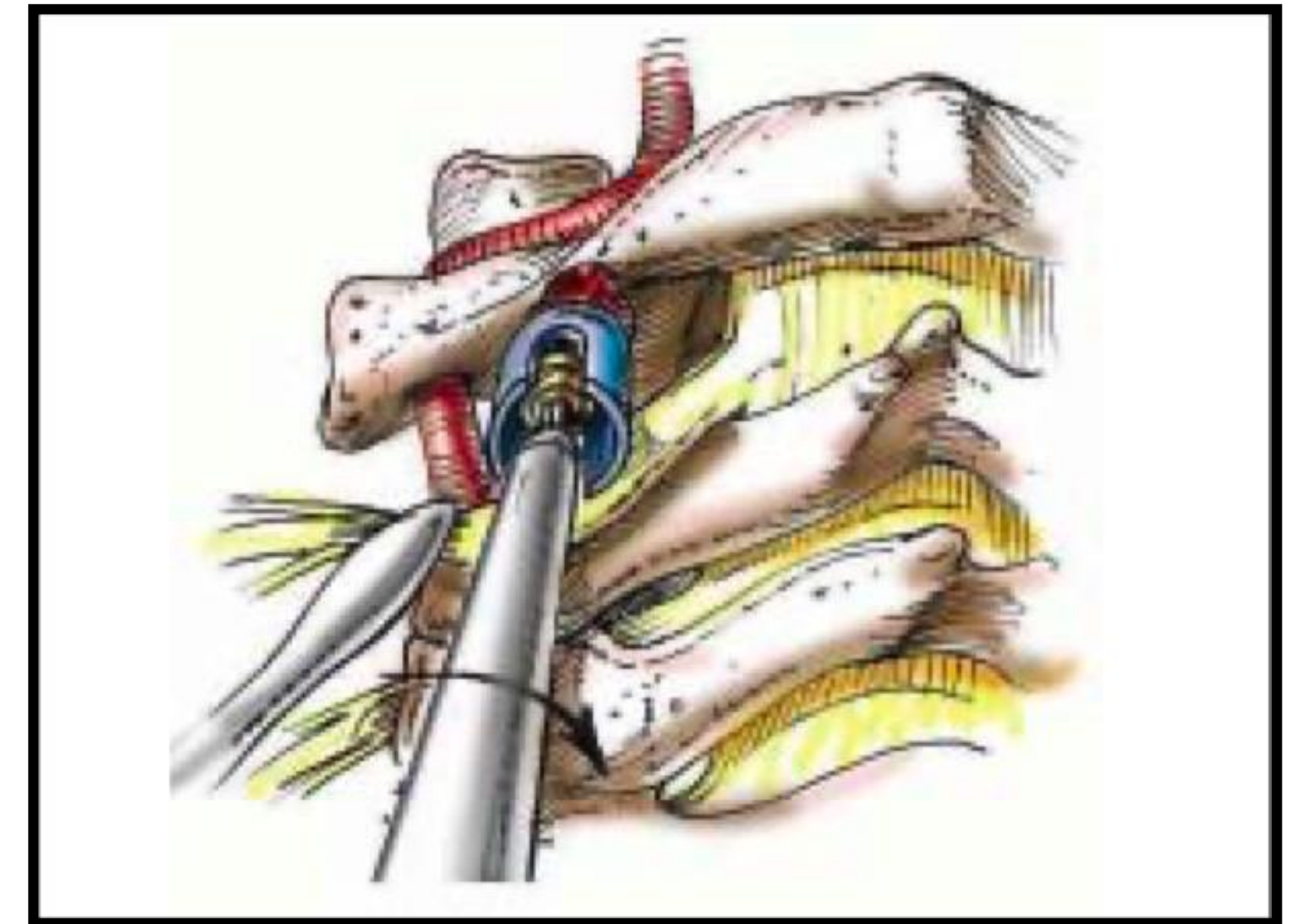


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- Neutrális helyzet- a beteg a padlót nézze, látás, nyelés! Álló oldal irányú RTG!
- Egyenes középvonali metszés a POE-től a distalis nyaki csigolyáig.
- A középvonalban haladva feltárjuk az occipitlais squamat és a nyakcsigolyákat.
- C.II., C.I., majd az occipitalis csavarok

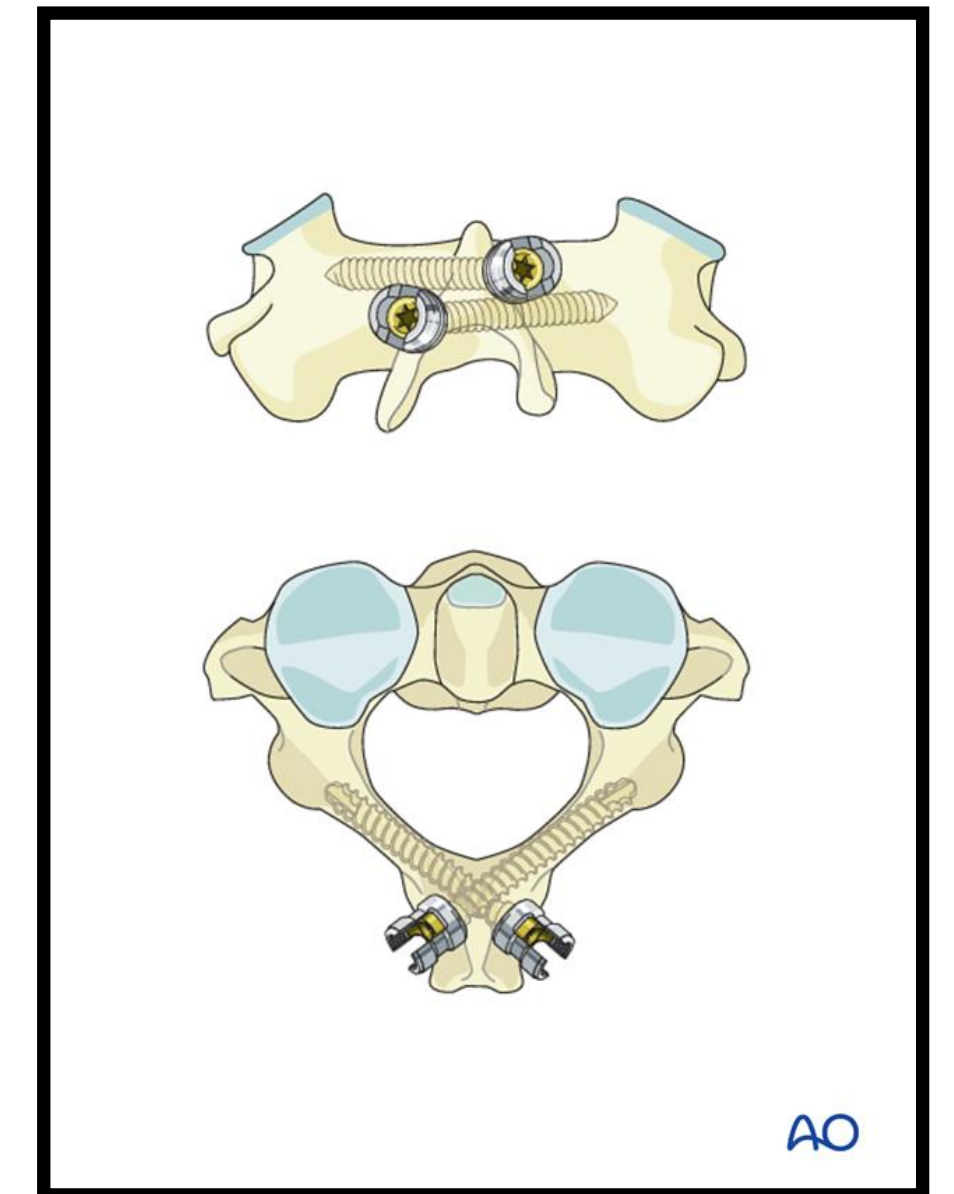
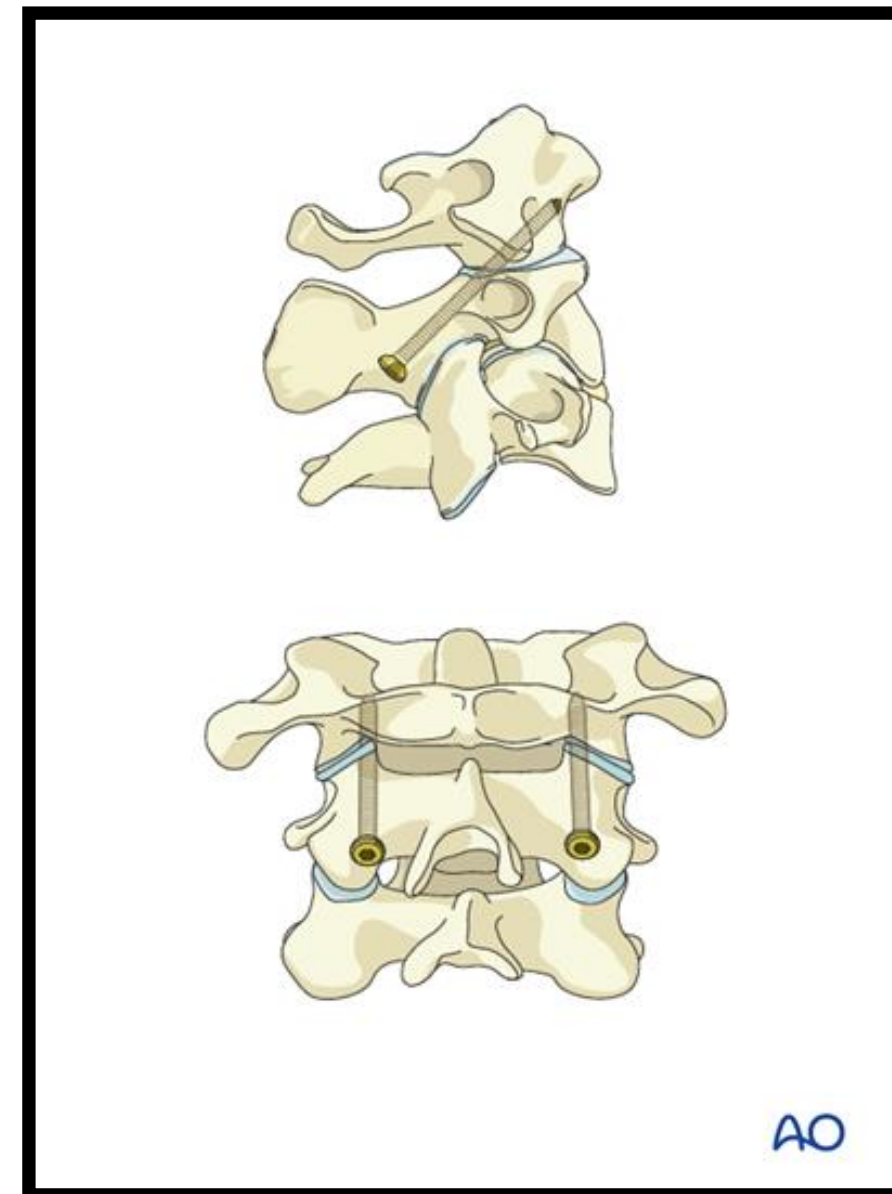
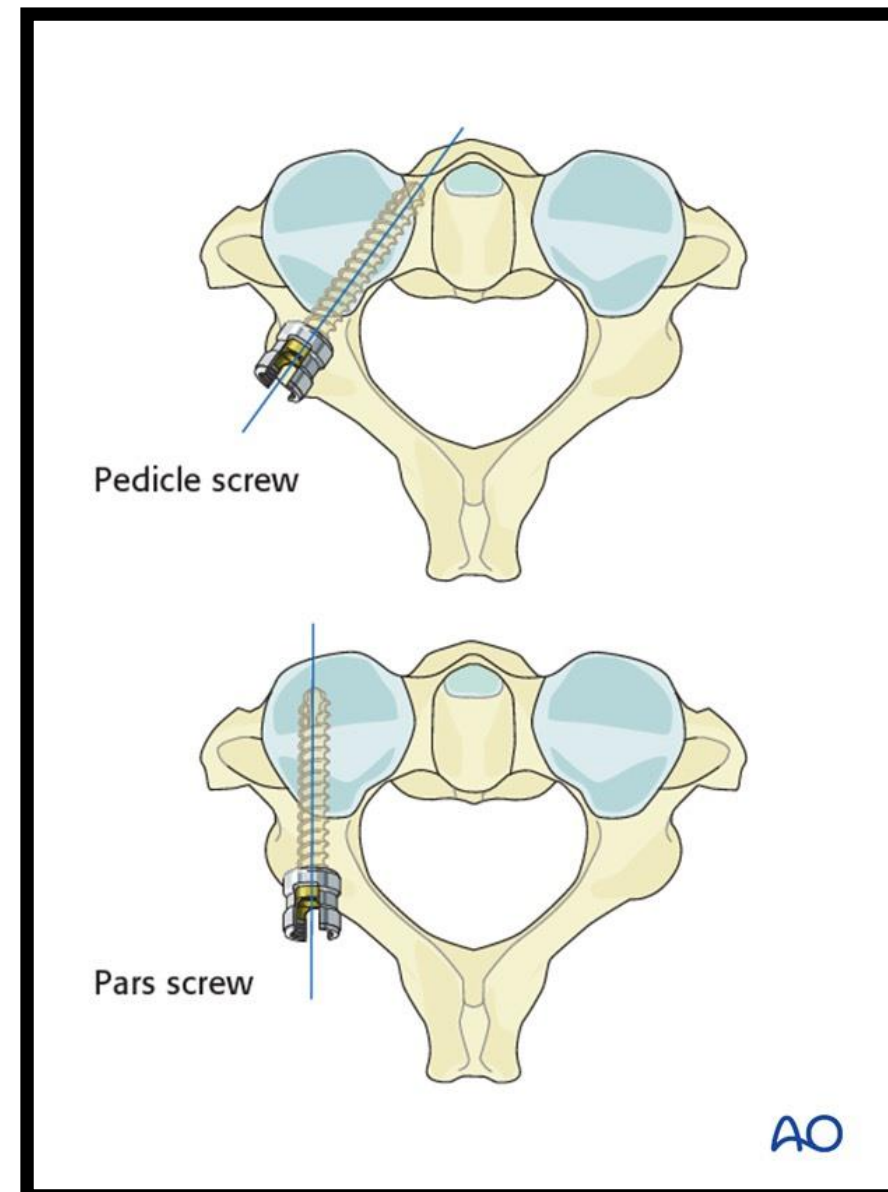
C.I. massa lateralis csavar

- Entry point a massa lateralis közepe
- Ha elég vastag akkor a hátsó ív
- Target: C.I. tuberculum anterior
- Egyenesen, vagy 10-15 fokban konvergálva

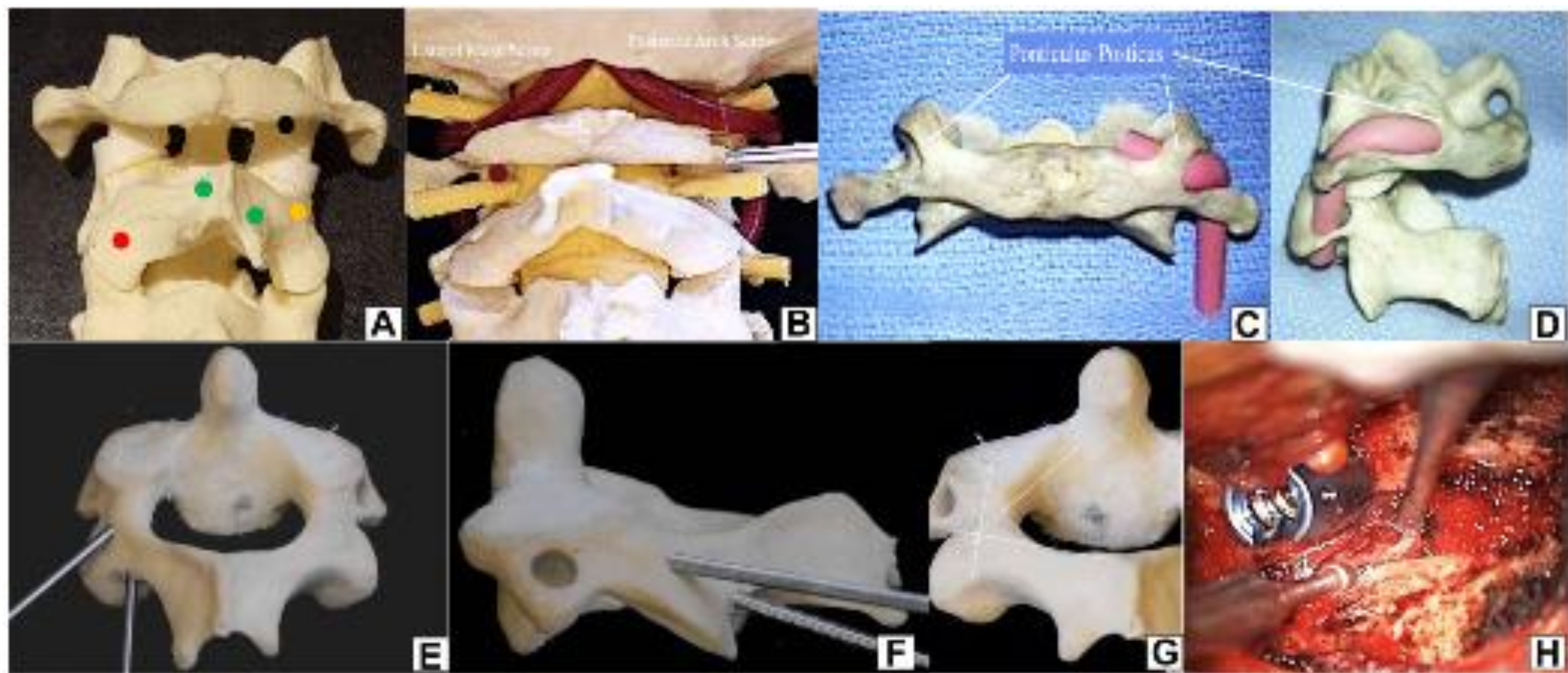


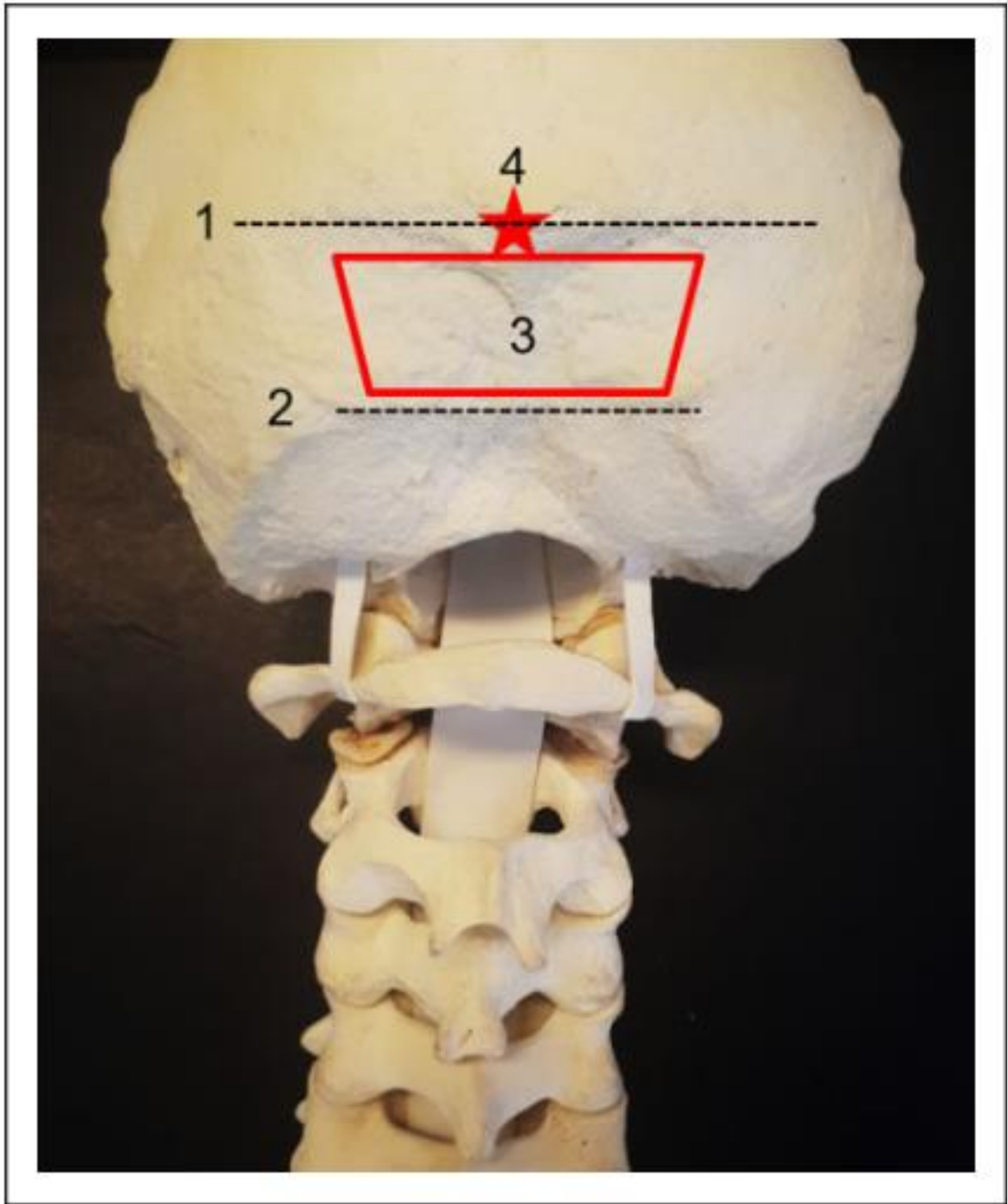
C.II. csavar

- Pars
- Pediculus
- C.I.-C.II. transarticularis
- Intralaminaris



Type of Axis Fixation	Surgical Techniques ³⁰	Special Considerations—Pearls for Practice ³⁰
Pars screws	<p>Entry point: 3-5 mm above the C2-3 junction, medial position without violating the spinal canal.</p> <p>Trajectory: Parallel trajectory to the pars, may be guided by lateral fluoroscopy</p>	<p>Average screw length is 12-18 mm.</p> <p>Evaluate the foramen transversarium: Generally, just anterior to the posterior vertebral line—more vertical trajectory increases the risk of vertebral artery injury</p>
Transarticular C1-2 screws	<p>Same entry point as a pars screw with greater craniocaudal direction.</p> <p>Palpating the medial and superior border of C2 pedicle to avoid breaking the cortical bone.</p> <p>Removal of the C1-2 articular cartilage—improves fusion rates.</p> <p>Trajectory: Guided by lateral fluoroscopy, through the pars into the lateral mass of C1</p>	<p>Average screw length is 20-30 mm.</p> <p>Computed tomography (CT) scan: The entire pars should be visualized on a single image slice of a parasagittal CT scan (average CT scan cut is 3 mm)—failure to identify a medial located vertebral artery may result in vascular injury</p> <p>C1-2 joints must be aligned on fluoroscopy</p> <p>Axial support in the vertex may be useful to avoid C1-2 joints distraction</p> <p>Excessive angulation may cause: (1) cranial—may violate the condyle-C1 joint, (2) caudal—inadequate fixation of C1, (3) medial—spinal cord injury, (4) lateral—vertebral artery injury</p>
Pedicle screws	<p>Entry point: The entry point in the cranio-caudal direction is an imaginary line extending the rostral border of the C2 lamina. Medial-laterally, it is 2 mm lateral to the midpoint of the pars</p> <p>Trajectory: Palpating the medial and rostral portion of the pedicle for guidance</p>	<p>True pedicle screws—cross obliquely into the pedicle toward the body of the axis</p> <p>CT scan: The entire pars should be visualized on a single image slice of a parasagittal CT scan (average CT scan cut is 3 mm)—failure to identify a medial located vertebral artery may result in vascular injury</p> <p>Up to 20% of the patients do not have pedicles large enough to allow for pedicle screw cannulation</p>
Laminar	<p>Entry point: Junction of the spinous process and lamina. The trajectory is directly into the lamina but avoiding a ventral breach (dorsal perforation is possible and may also improve purchase with a bicortical screw)</p>	<p>Free hand technique. May require of head screw extension to capture the rod</p> <p>Contraindicated when there is a hemilaminectomy of C2</p> <p>Alternative to pedicle and transarticular screws given 20% of the patients cannot have safely placed pedicle screws</p> <p>With a dissector it is possible to palpate the inner portion of the lamina, which may help in selecting trajectory</p>



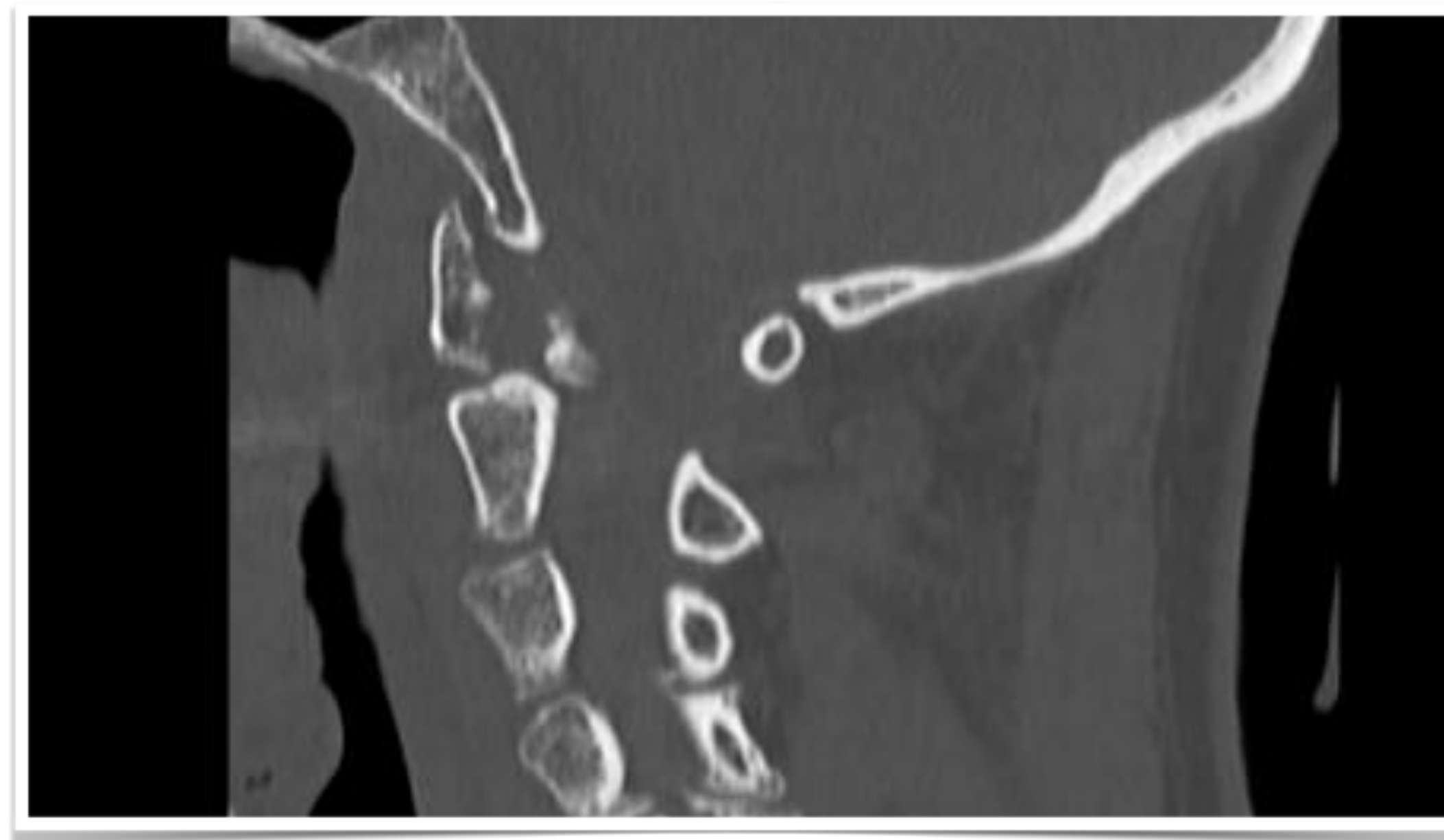
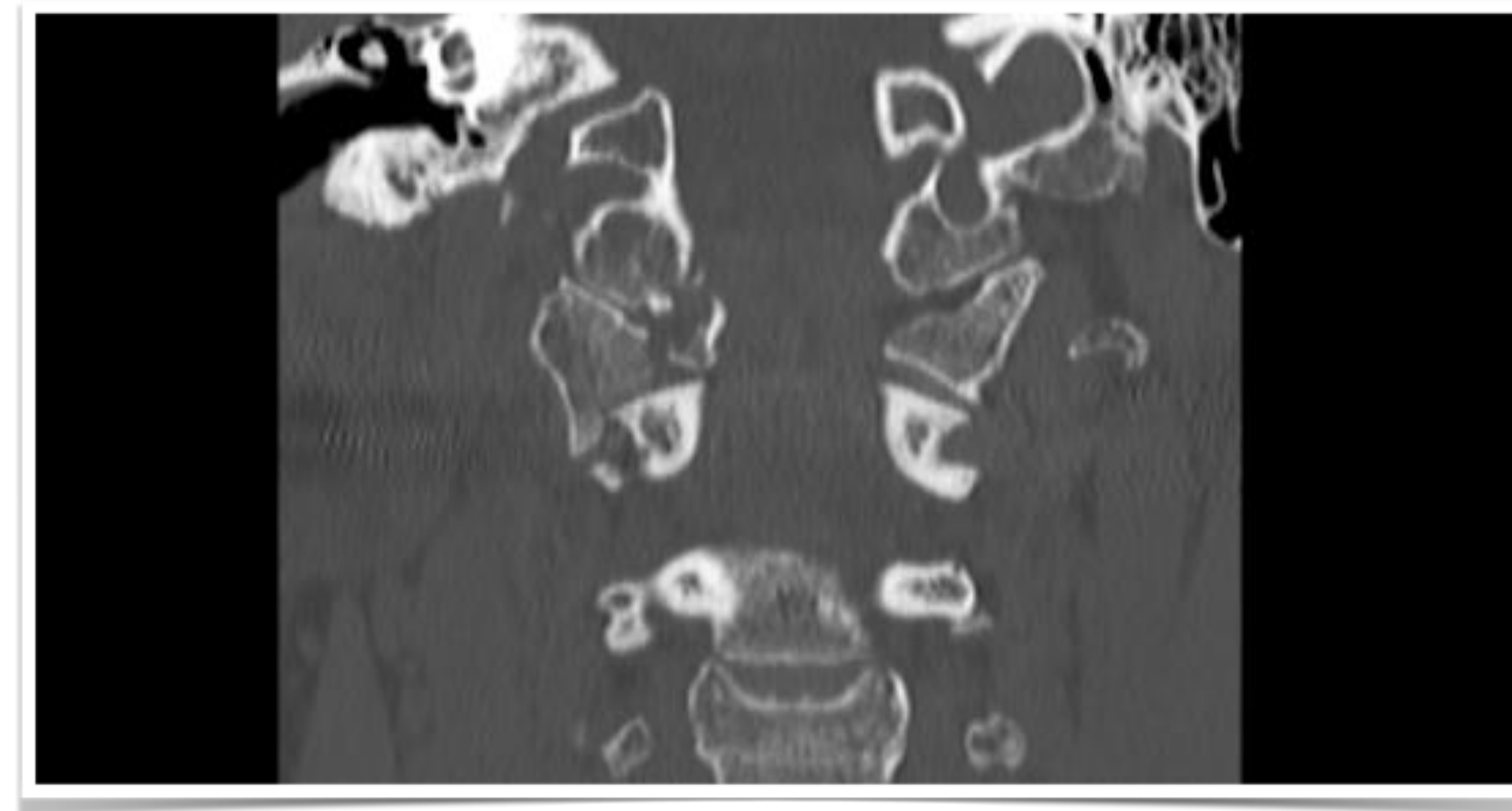
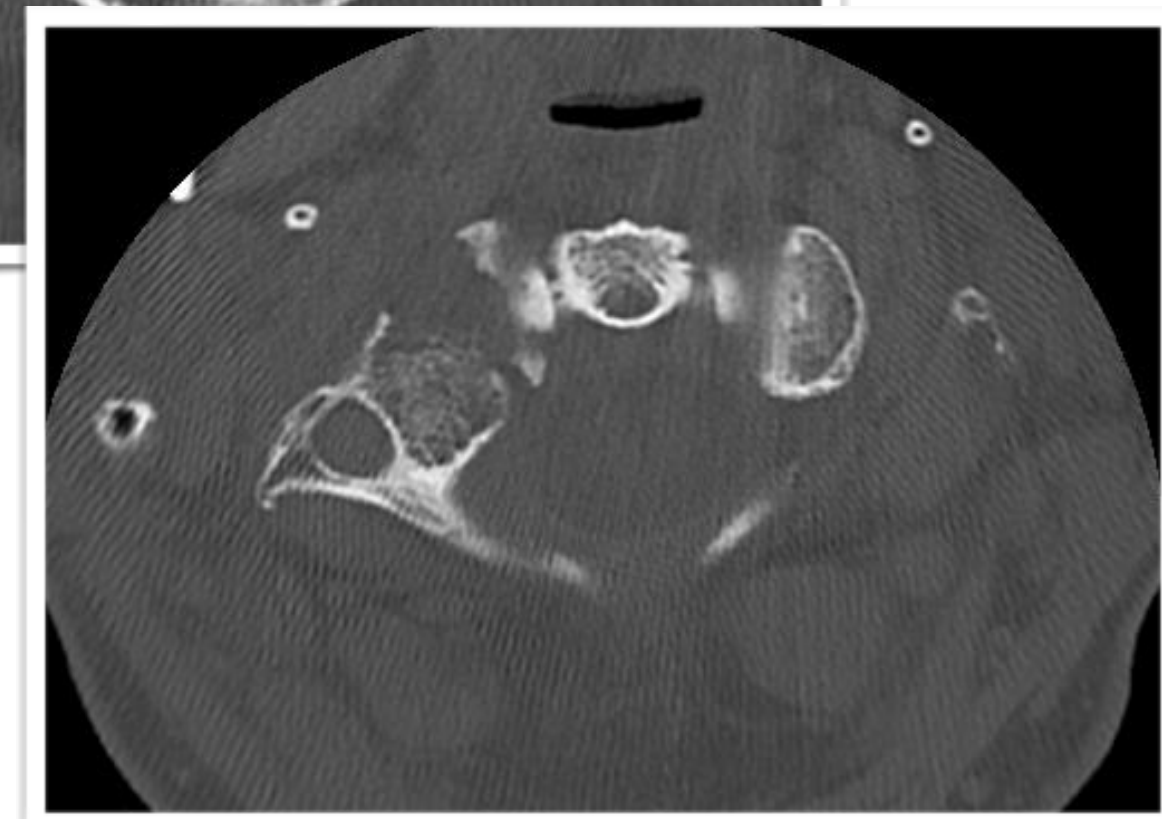
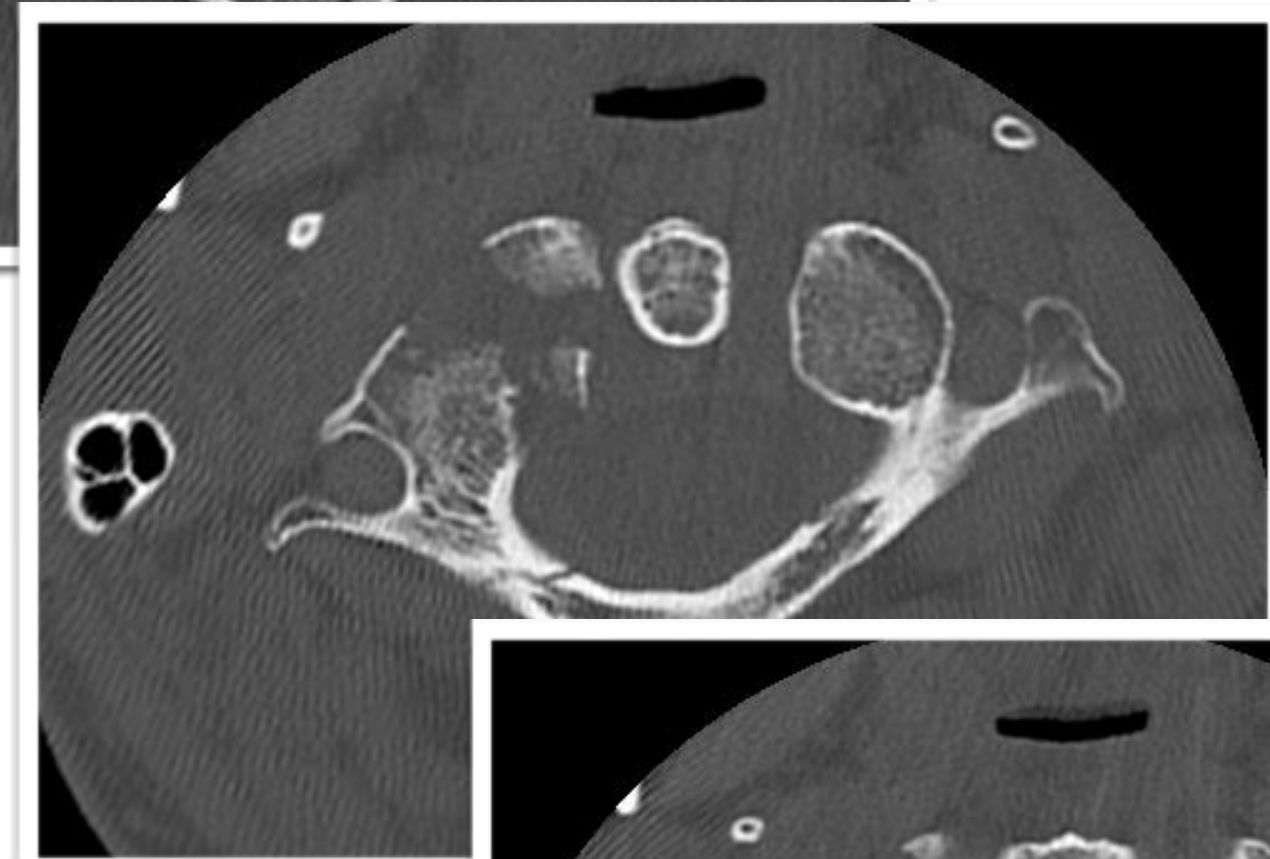
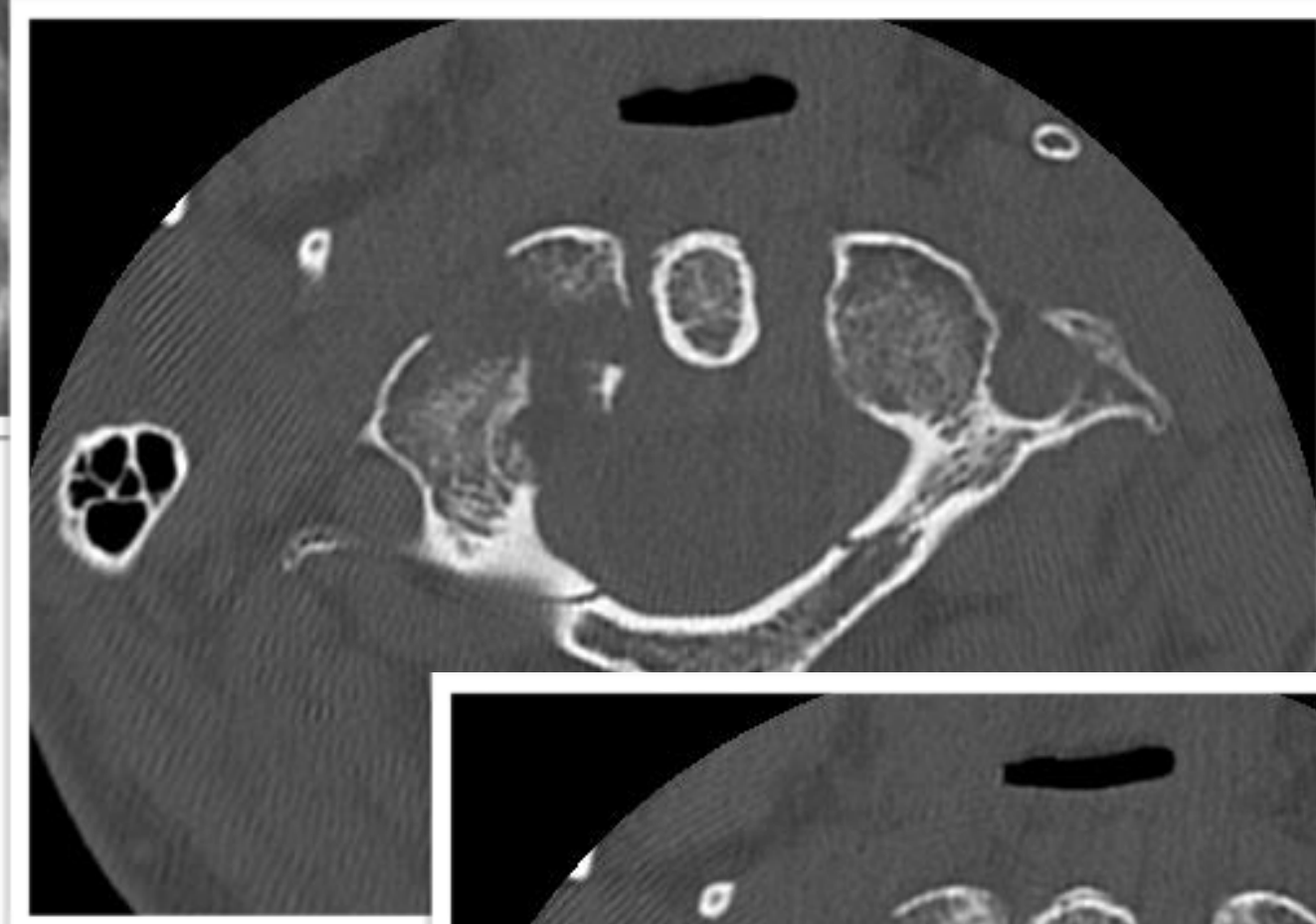
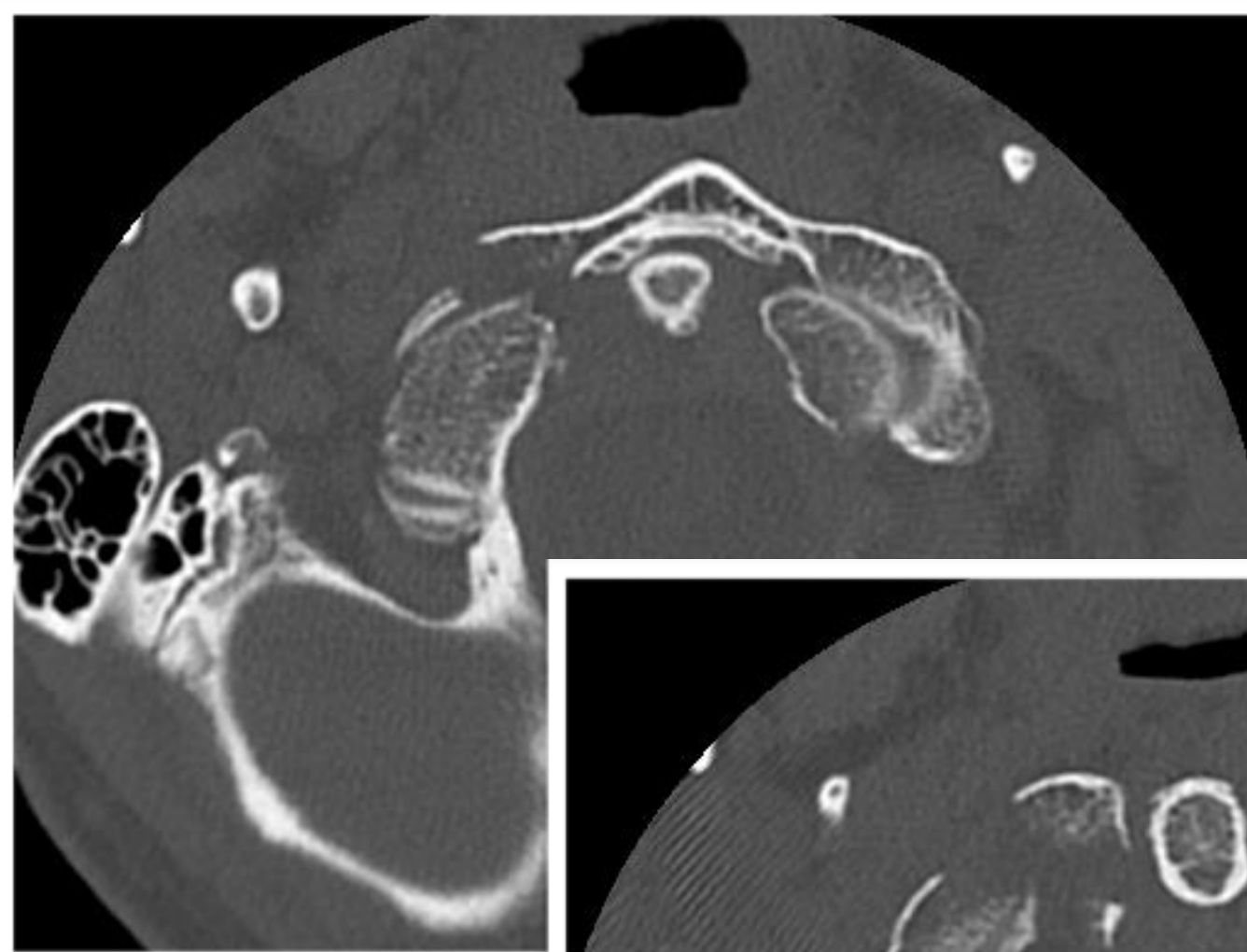


Esetismertetés

- 62 éves nő beteg
- Kórelőzmény: hypothyreosis
- Műtétek: appendectomia, tonsillectomia
- Orosházi Kórház SBO-ról vesszük fel klinikánkra.
- 2 nappal felvétele előtt fürdőszobában megcsúszott, szemből arccal a falnak csapódott, majd hanyatt vágódott.
- Másnap erős nyaki fájdalmak miatt fordult orvoshoz, neur.stat. negatív

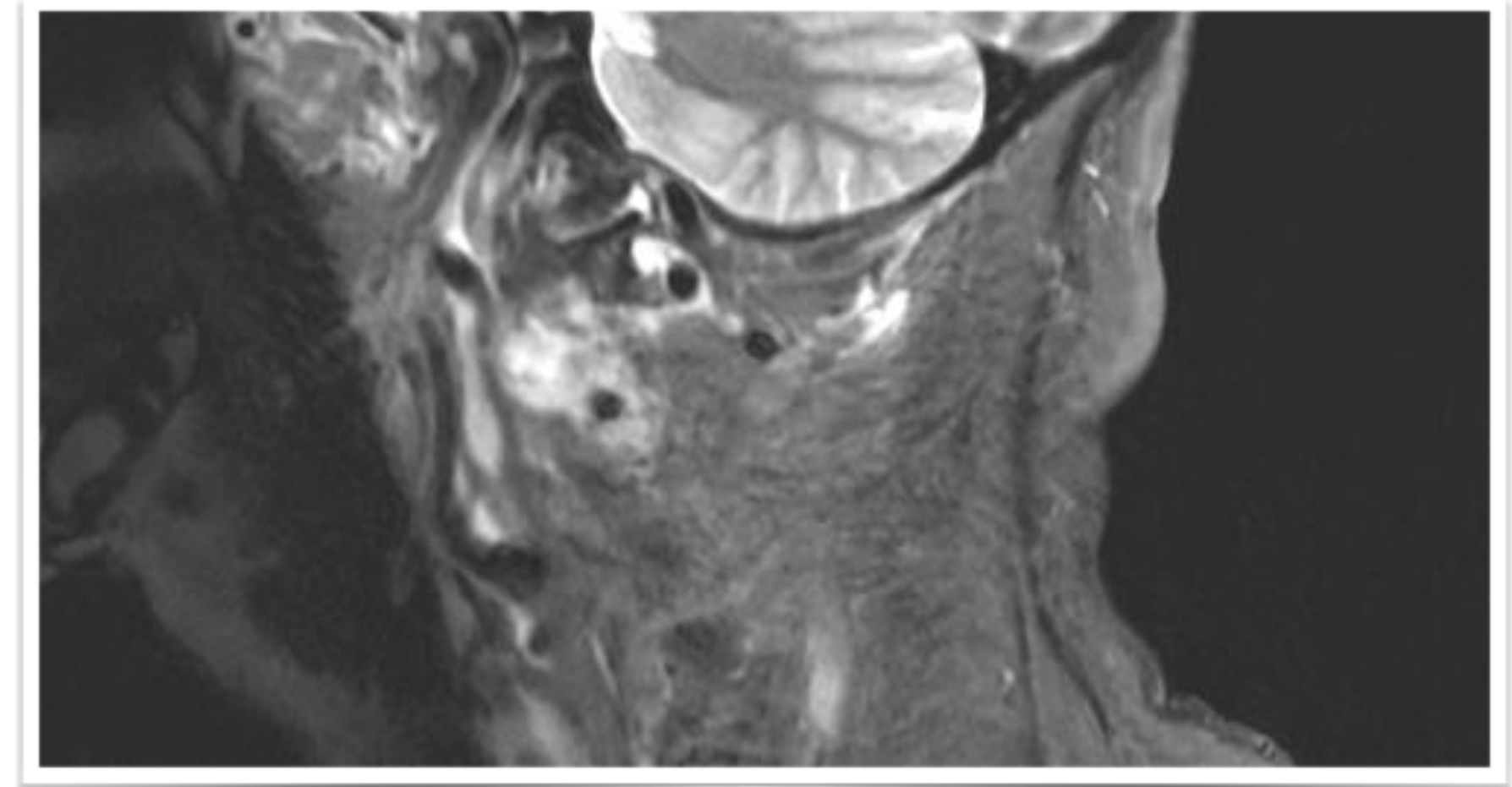
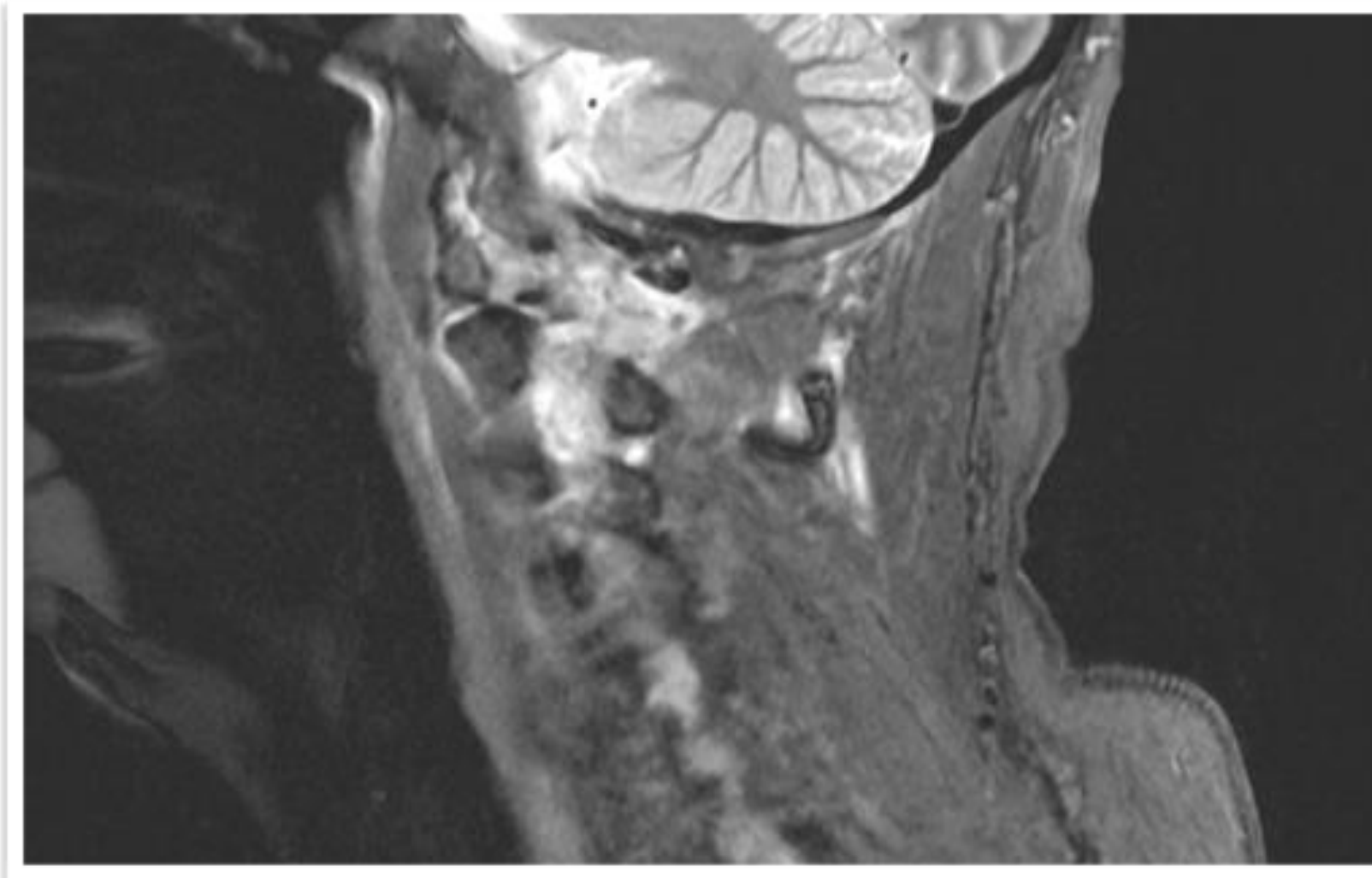
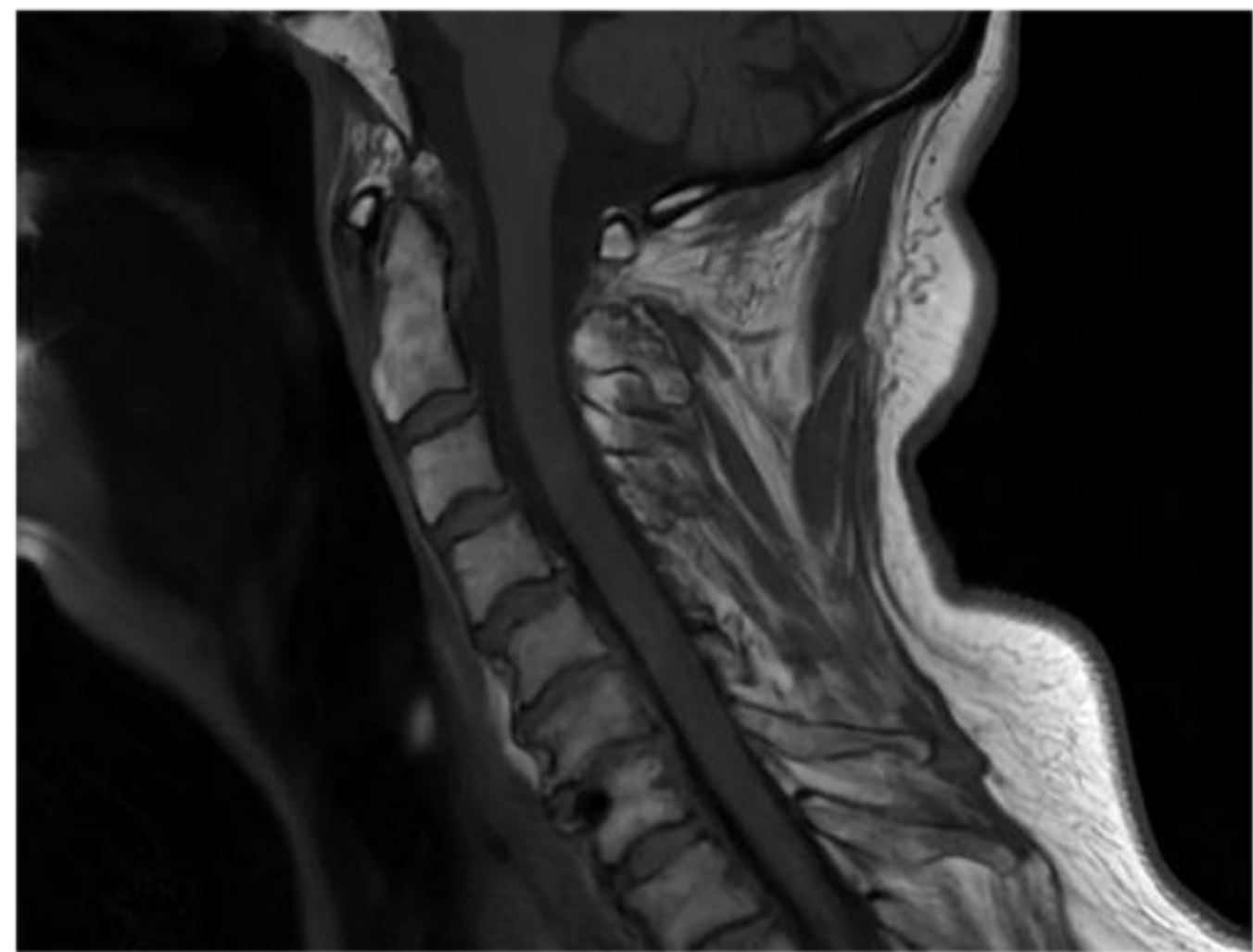
CT

- C.I. hátsó ívtörés két ponton
- C.I. elülső ívtörés jobb oldalon
- C.I. jobb oldali massa lateralis darabos törése

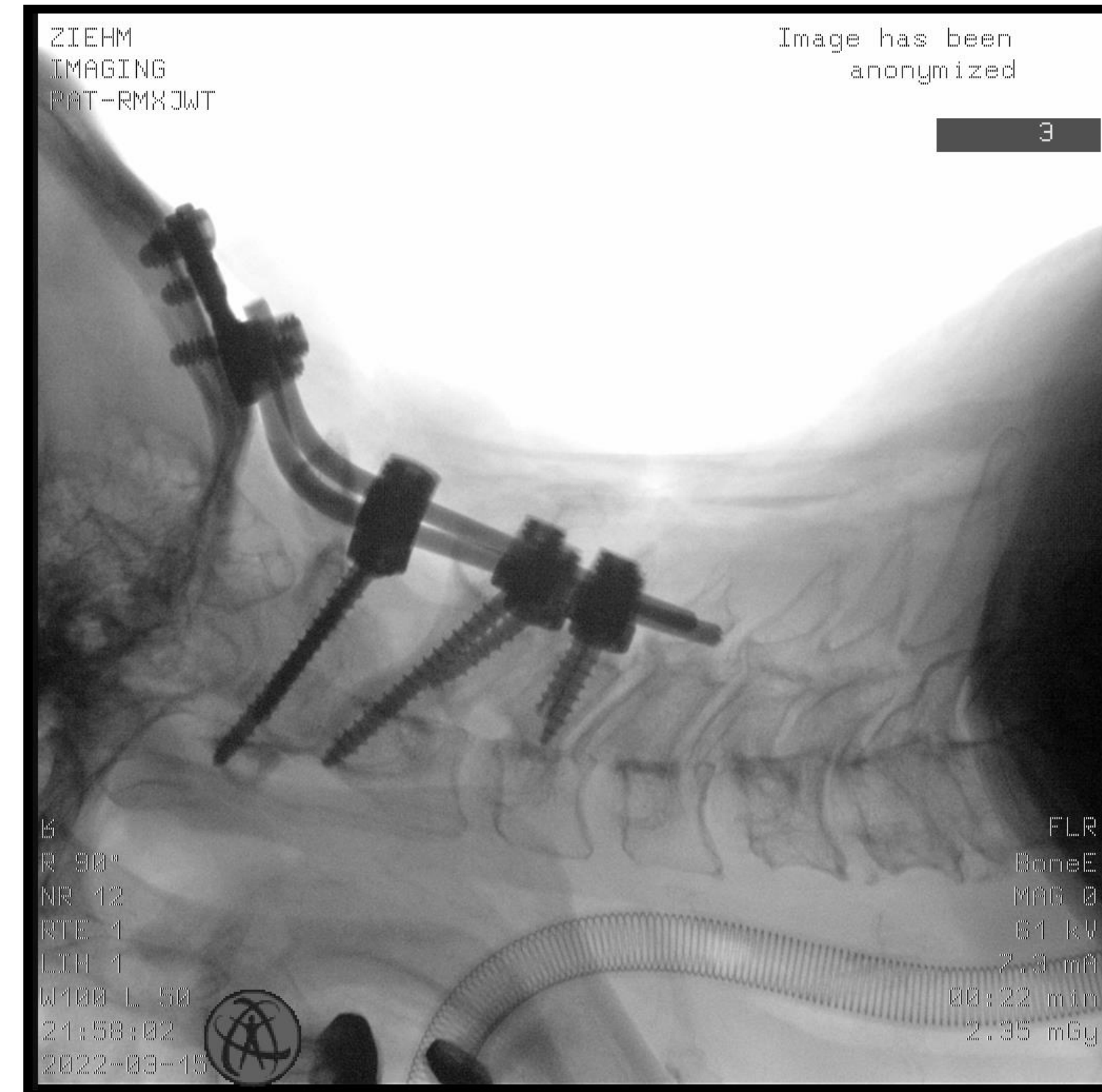
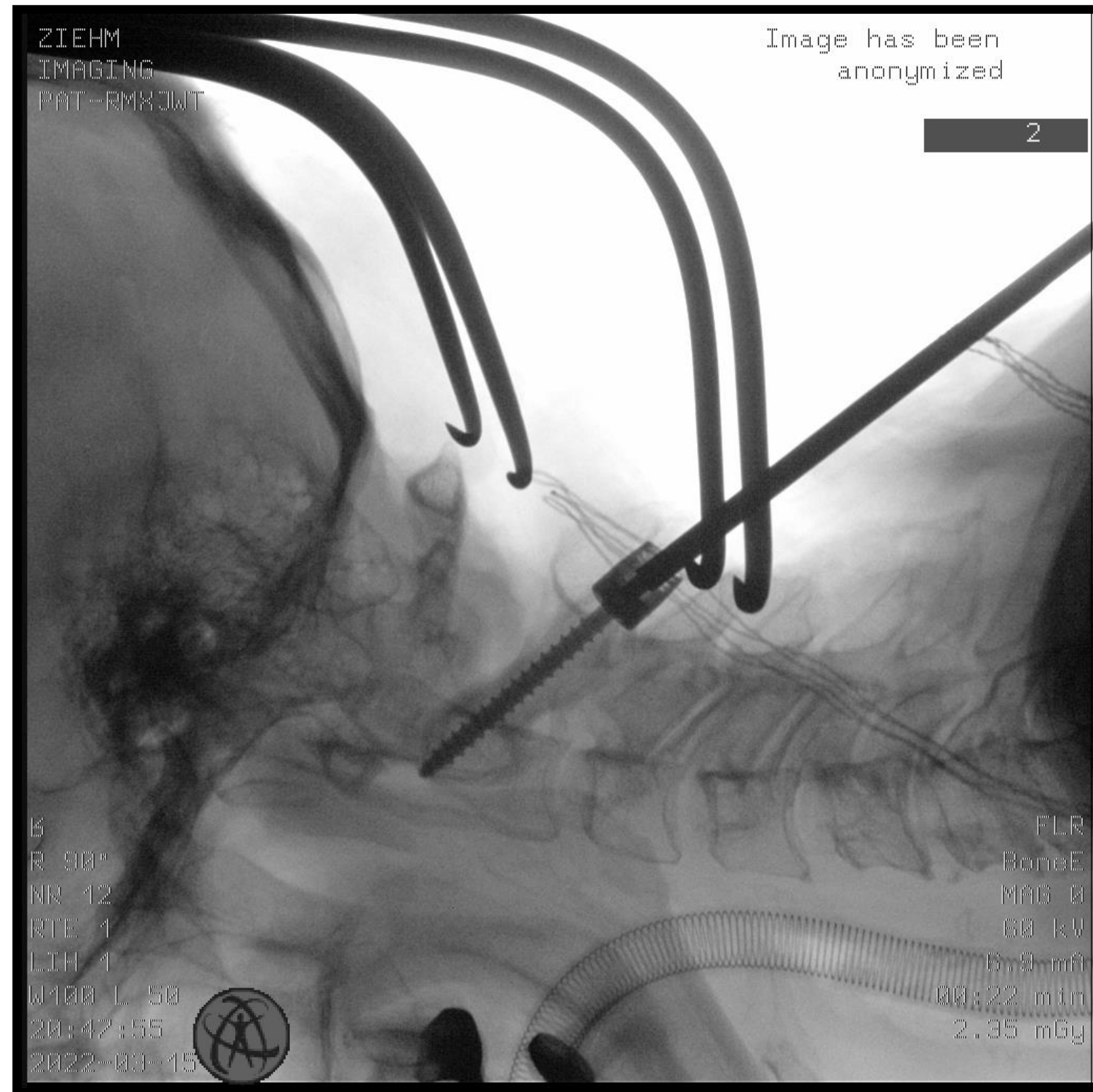


MRI

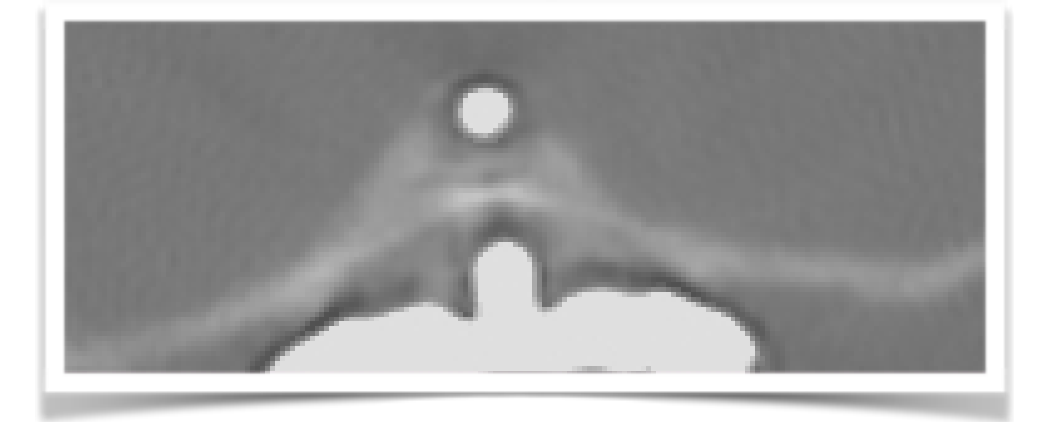
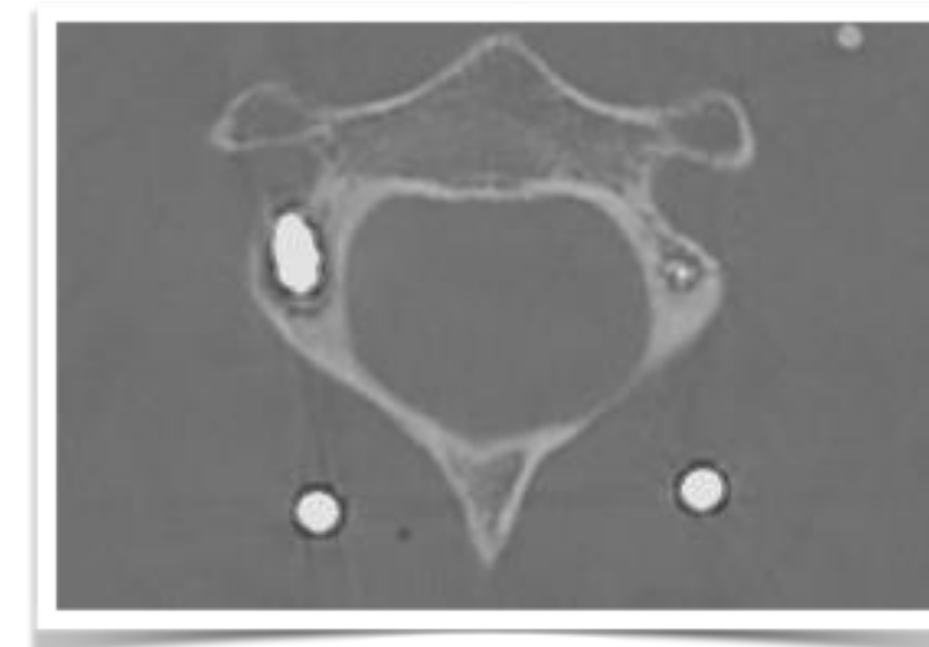
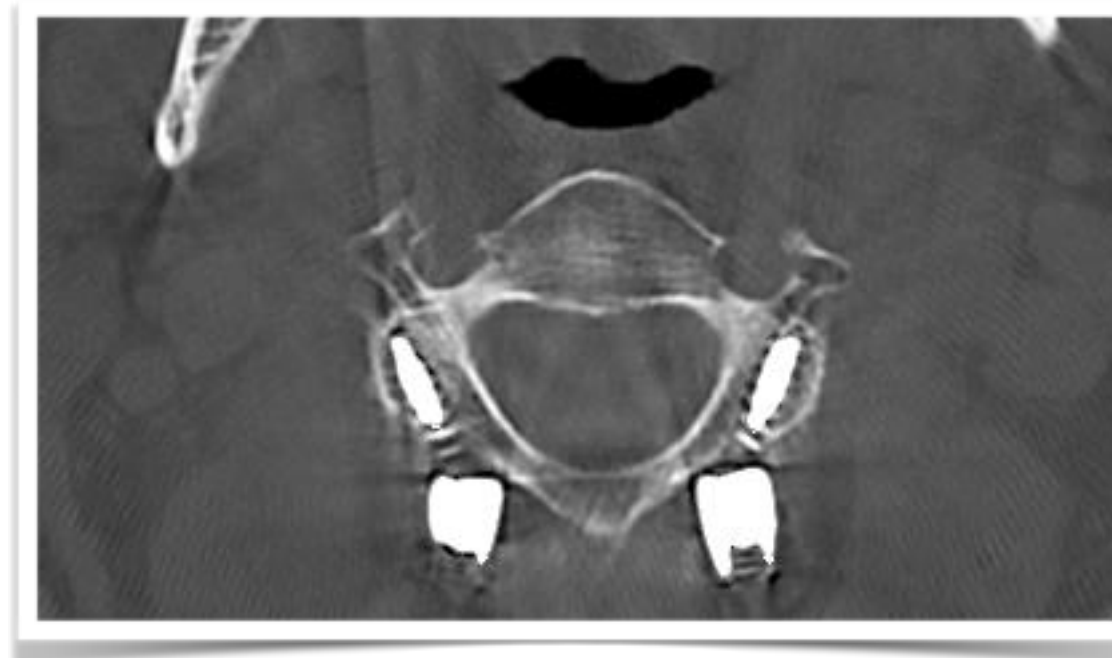
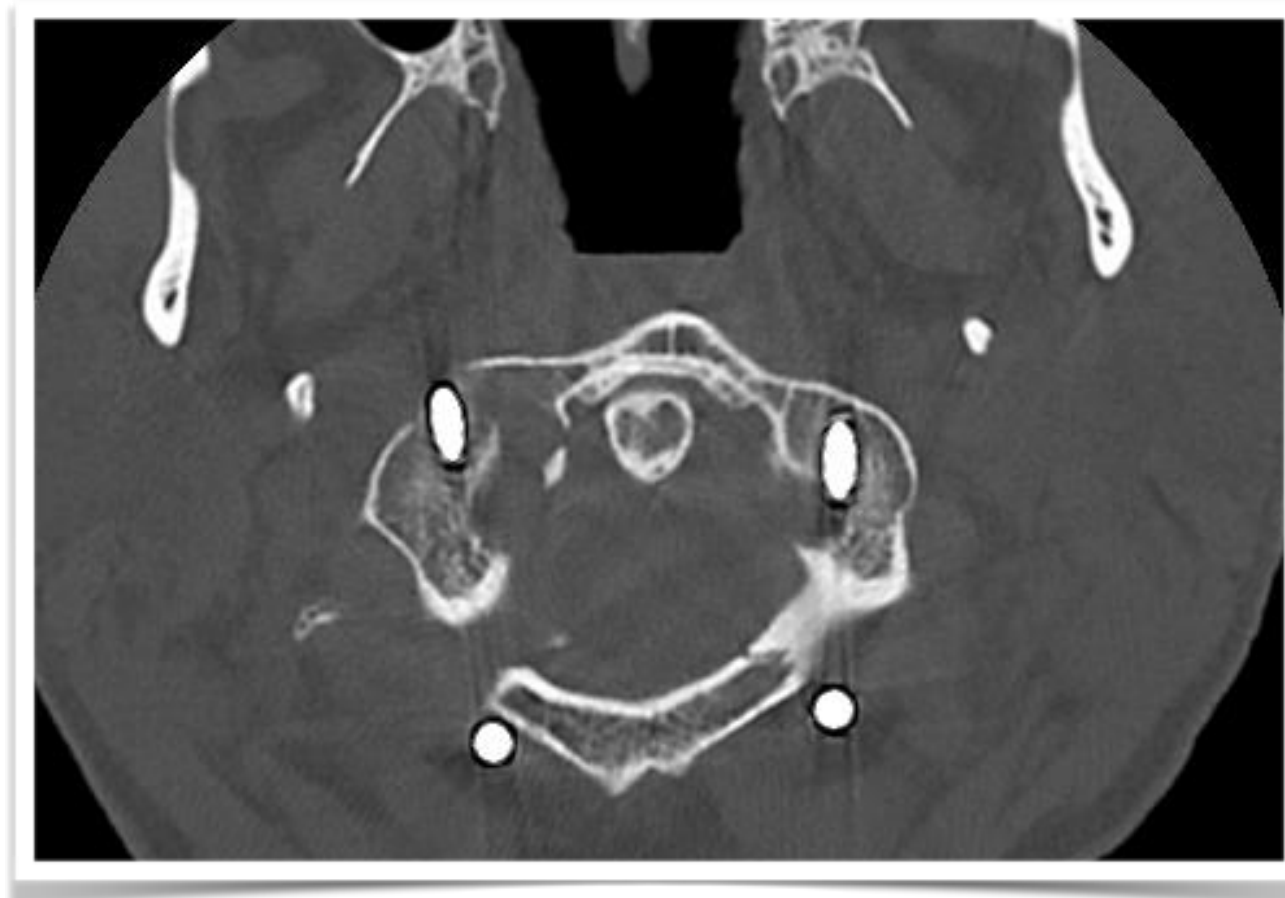
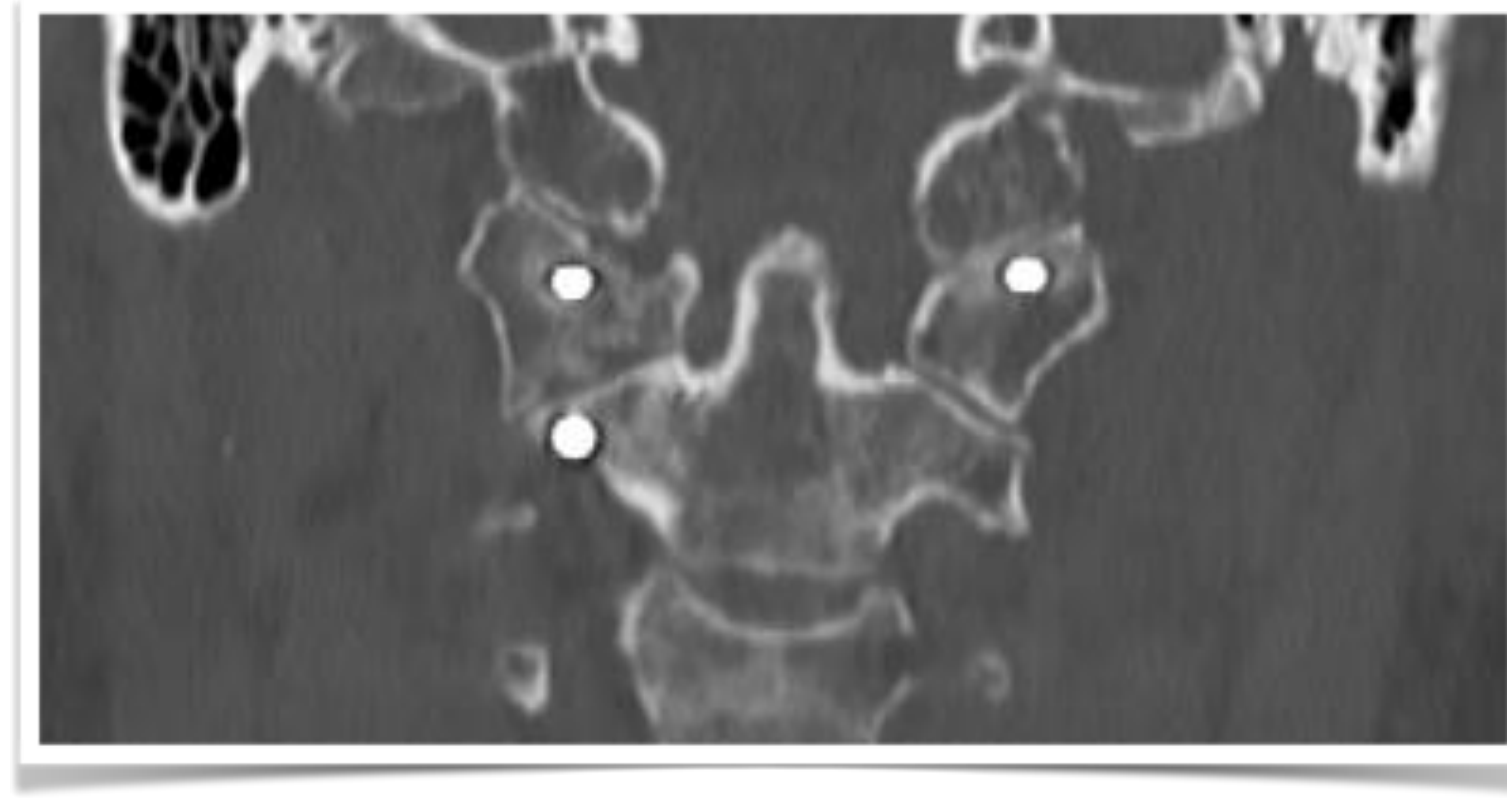
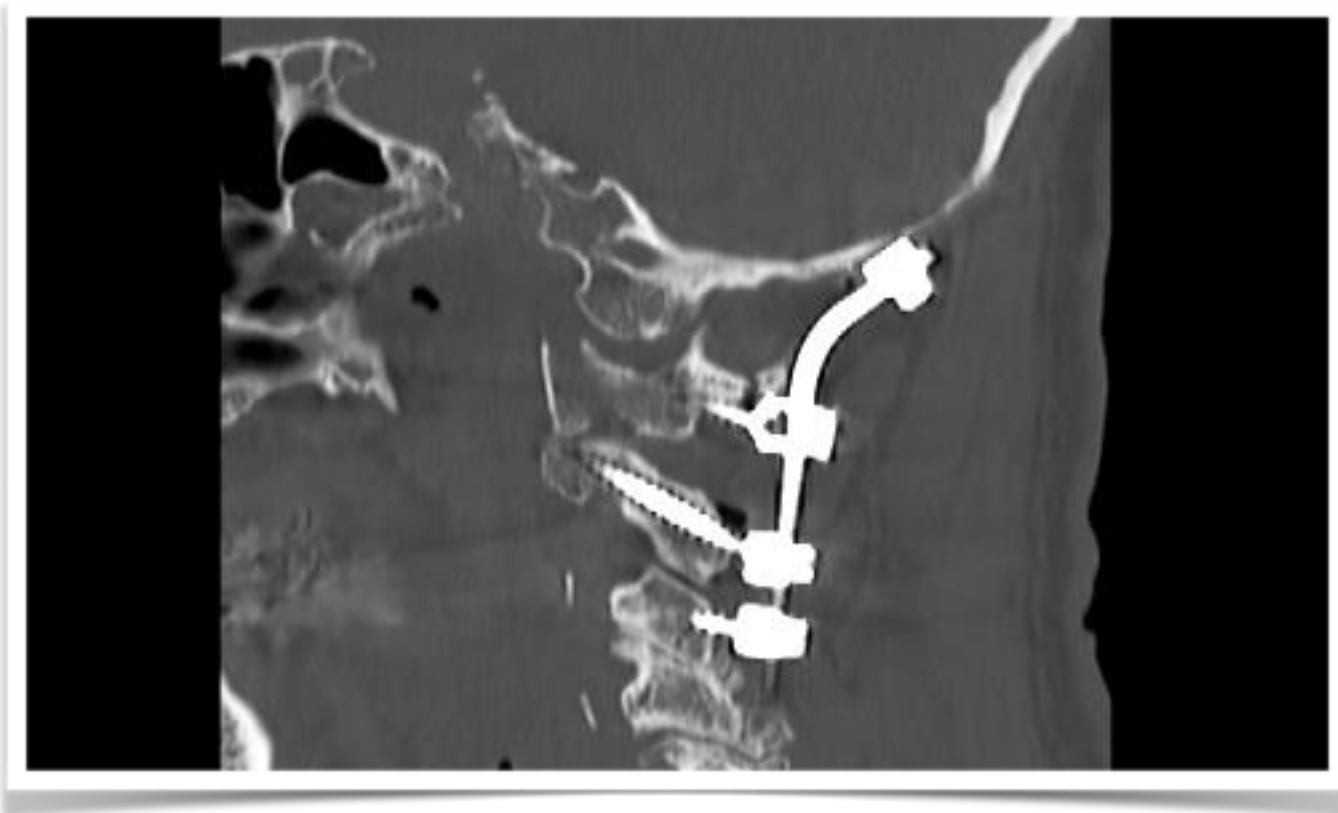
- Tünetmentes beteg, MRI vizsgálat is készült
- Lágyrész jelintenzitás fokozódás látható



Intraop RTG

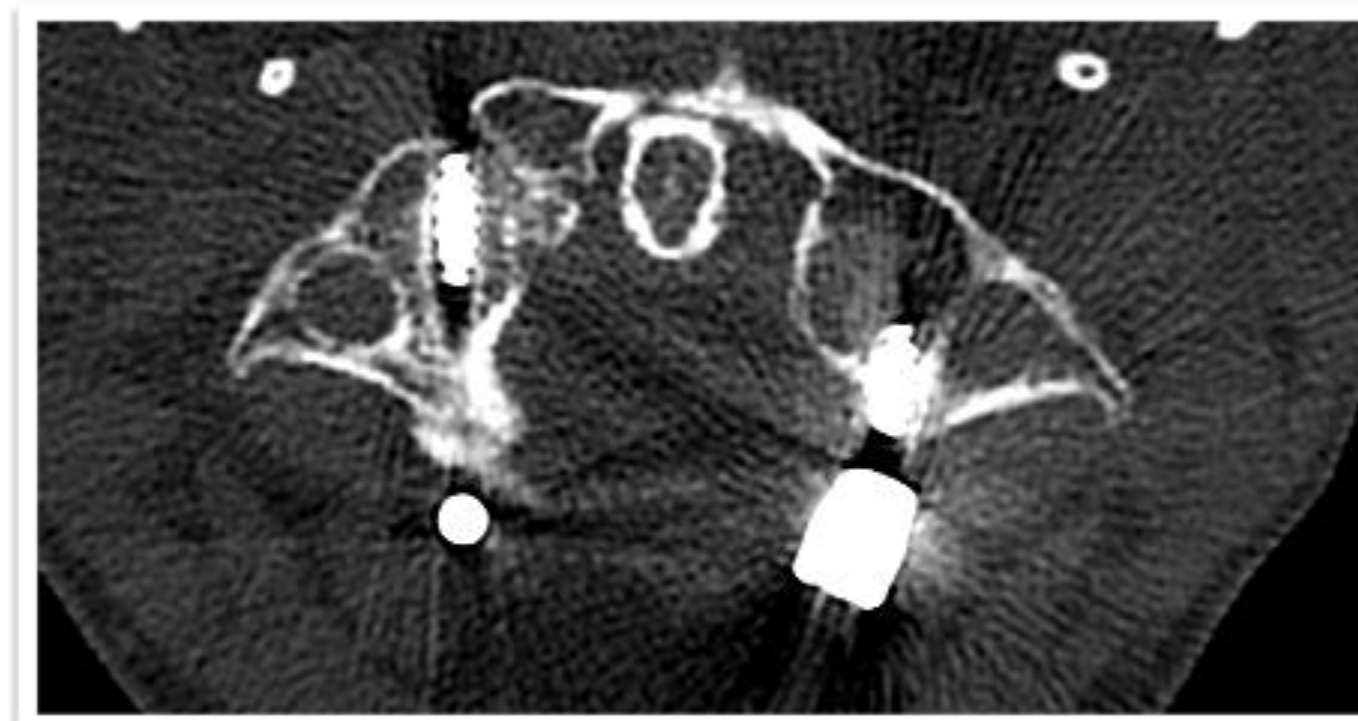
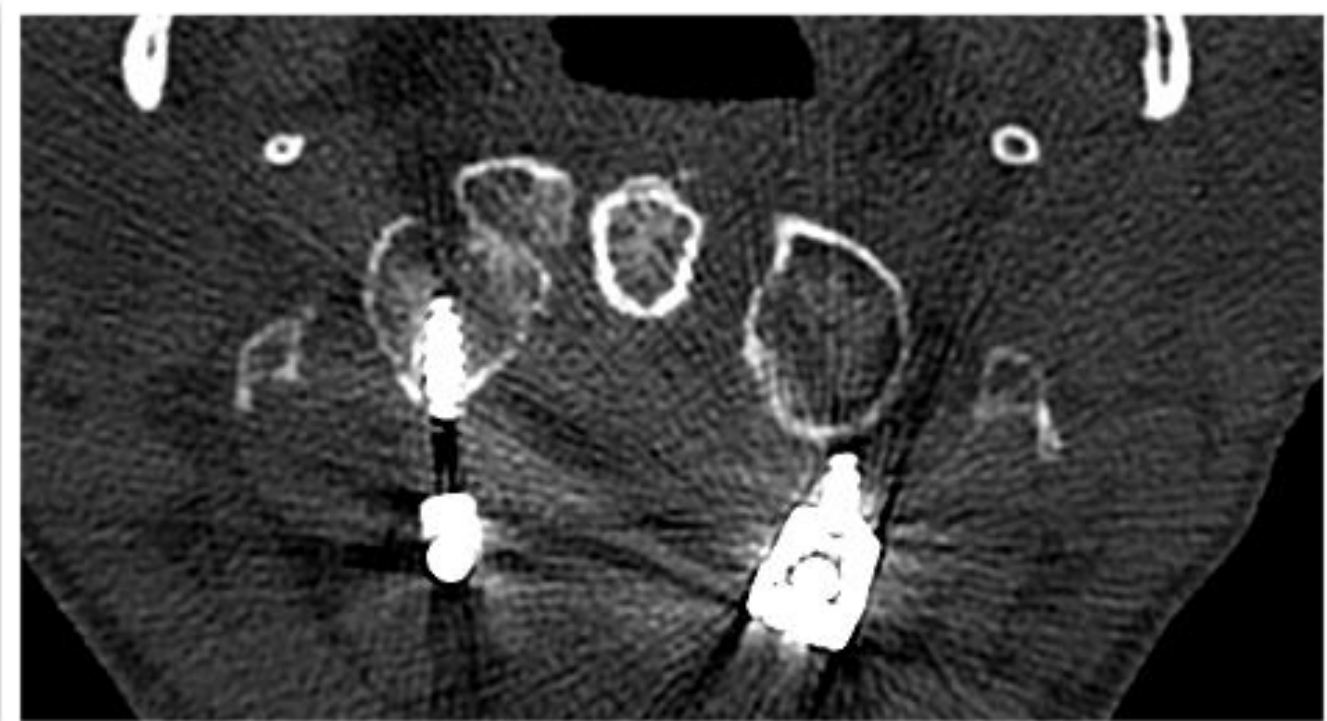


Postop kontroll CT



Örülünk Vincent?

- A csavarok jó helyzetűek, a konstrukció megfelelő
- A beteg nyaki fájdalma megszűnt
- DE! A száját nehezen nyitja, az evés problémás



Szövődmények

- Liquor csorgás- fistulla
- Pseudomeningocele
- Idegelem sérülés (agytörzs/gv/ideggyök)
- Vertebralis arteria sérülése
- Sinus sérülés
- Implantátum malpozíció
- Nyelés nehezítettség
- Látás probléma
- Légembólia

Köszönöm a figyelmeteket!