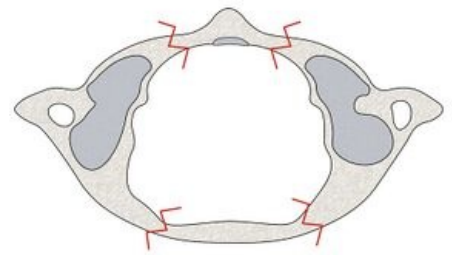


Atlas injury (C1)

Injury to the first cervical vertebra (C1) is caused by force applied in the axial direction to the top of the head. The atlas can be injured within the vertebral arch in both anterior and posterior parts. A specific type of fracture is the so-called **Jefferson fracture**, in which the arch is fractured twice in the anterior and posterior part. In this case, there is dislocation of the fragments laterally and widening of the spinal canal.

Neurological lesions in this area, due to the width of the spinal canal, are not common.



Jefferson fracture (atlas upside view)

Treatment

Determining the stability of the fracture is essential for treatment. Stable C1 fractures are not indicated for surgery and are treated by immobilization in a halo-vest. In case of instability, we indicate operative osteosynthesis.

Diagnostic

X-ray examination of the craniocervical transition is essential, in anteroposterior, lateral and transoral projections. A CT scan is necessary to classify the type of fracture.

References

Related articles

- Axis injury (C2)
- Atlantooccipital dislocation
- Vertebrae

External reesources

- Halo-vest (<https://kidshealth.org/en/parents/halo-brace.html>)

Resources

- SAMEŠ, M, et al. *Neurochirurgie*. 1. edition. Praha : Jessenius Maxdorf, 2005. 127 pp. ISBN 80-7345-072-0.
- KOUDELA,, et al. *Ortopedická traumatologie*. 1. edition. Karolinum, 2002. 147 pp. ISBN 80-246-0392-6.