

Trauma

C2 Fractures

Fractures of C2 (odontoid fractures) are discussed separately from other spinal fractures because, unlike the more typical high-velocity fractures, they are frequently seen in elderly patients after a relatively minor fall with striking of the head. Fractures of C2 typically cause no neurologic injury because the spinal canal at C1-2 is relatively wide and thus can accommodate a dislocation of the spine at to a large degree without causing any nerve or spinal cord compression.

The **odontoid process**, or **dens**, is a superior projection of the body of C2. It sits just inside the ring of C1 (Figure 6).

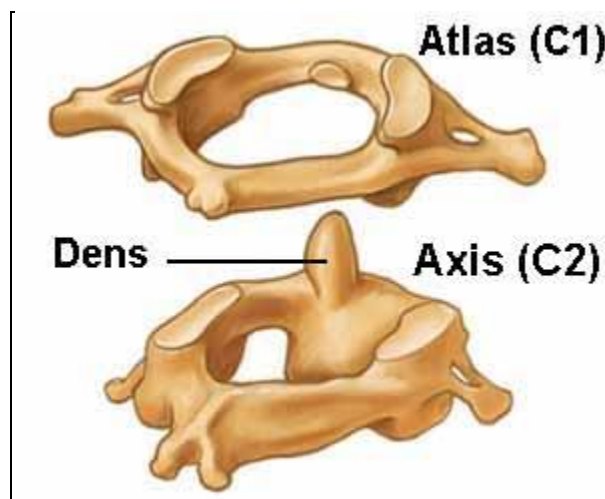


Figure 6: Drawing of C1 and C2 (separated) demonstrating the dens (odontoid process). Posterior is toward left lower corner, anterior toward right upper corner.

Odontoid fractures are classified according to the location of the fracture as follows:

- | | |
|--------|---|
| Type 1 | Fracture through the tip of the odontoid process, usually not unstable. |
| Type 2 | Fracture through the base of the odontoid process, unstable (Figure 7). |
| Type 3 | Fracture through the body of C2, may or may not be unstable. |

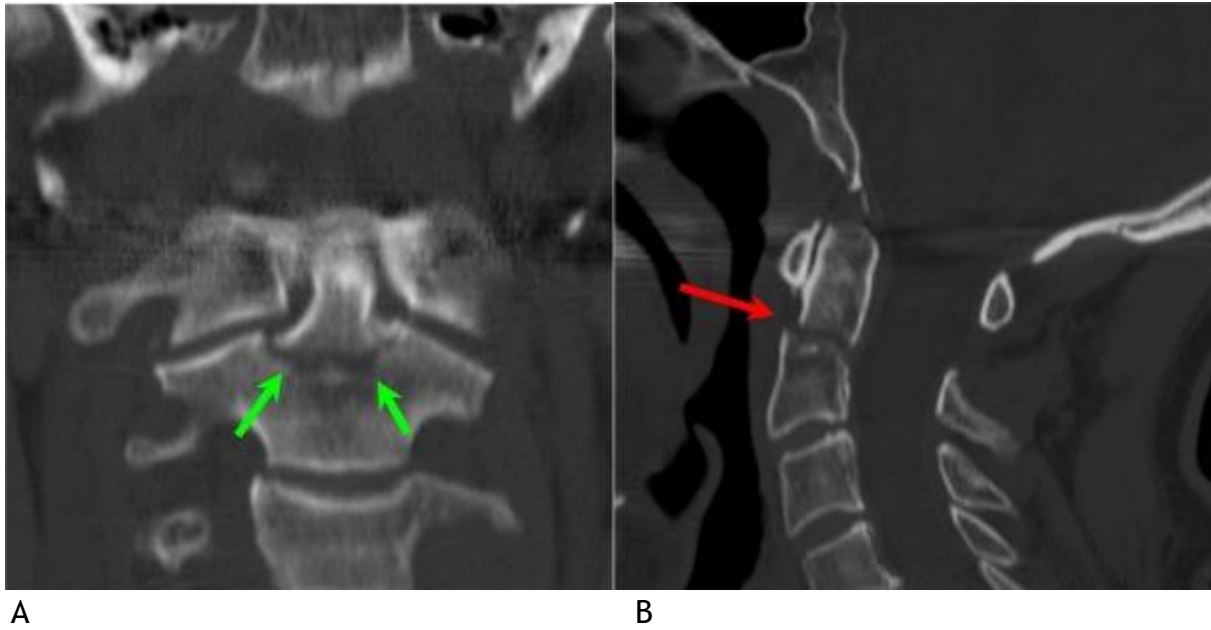


Figure 7: CT scan reconstructions showing Type 2 odontoid fracture (arrows).

A. Coronal view.

B. Sagittal view.

Most odontoid fractures require surgery to stabilize the spine. Some are treated with a halo-vest, and some with a rigid cervical collar or cervical-thoracic orthosis.