

# Clearing C-Spine

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# “Clearing” the C-spine

- Standardized Protocol
- no consensus



**Stable or Unstable?**

# Unstable Spine

White & Panjabi, 1984

*“.....the loss of ability of the spine under physiological loads to maintain relationships between vertebrae, in such a way that there is neither damage nor subsequent irritation of the spinal cord or nerve roots and, in addition, no development of deformity with excessive pain”*

## **Under normal physiological loads,**

- No increased mobility between adjacent vertebrae
- No neurological deficit
- No incapacitating pain
- No deformity

**Who needs an x-ray??**

**Who needs an x-ray??**

NEXUS

# Who needs an x-ray??

NEXUS

Canadian C-Spine Study

## Or.....Who does not?

1. Absence of tenderness in the posterior midline
2. Absence of a neurological deficit
3. Normal level of alertness (GCS15)
4. No evidence of intoxication
5. No distracting pain elsewhere

## Further,.....

**1. Was there any high risk factor that mandates radiography?**

- age > 65
- dangerous mechanism of injury
- presence of paraesthesias

If yes, X-ray

## 2. Were there any low risk factors that allow some assessment of range of motion?

- Included simple rear end MVC
- sitting position in ER
- ambulatory at any time
- delayed onset of neck pain
- absence of midline c-spine tenderness

If none, need X-ray

**3. Was the patient actively able to move their neck?**

- If yes, then no x-ray

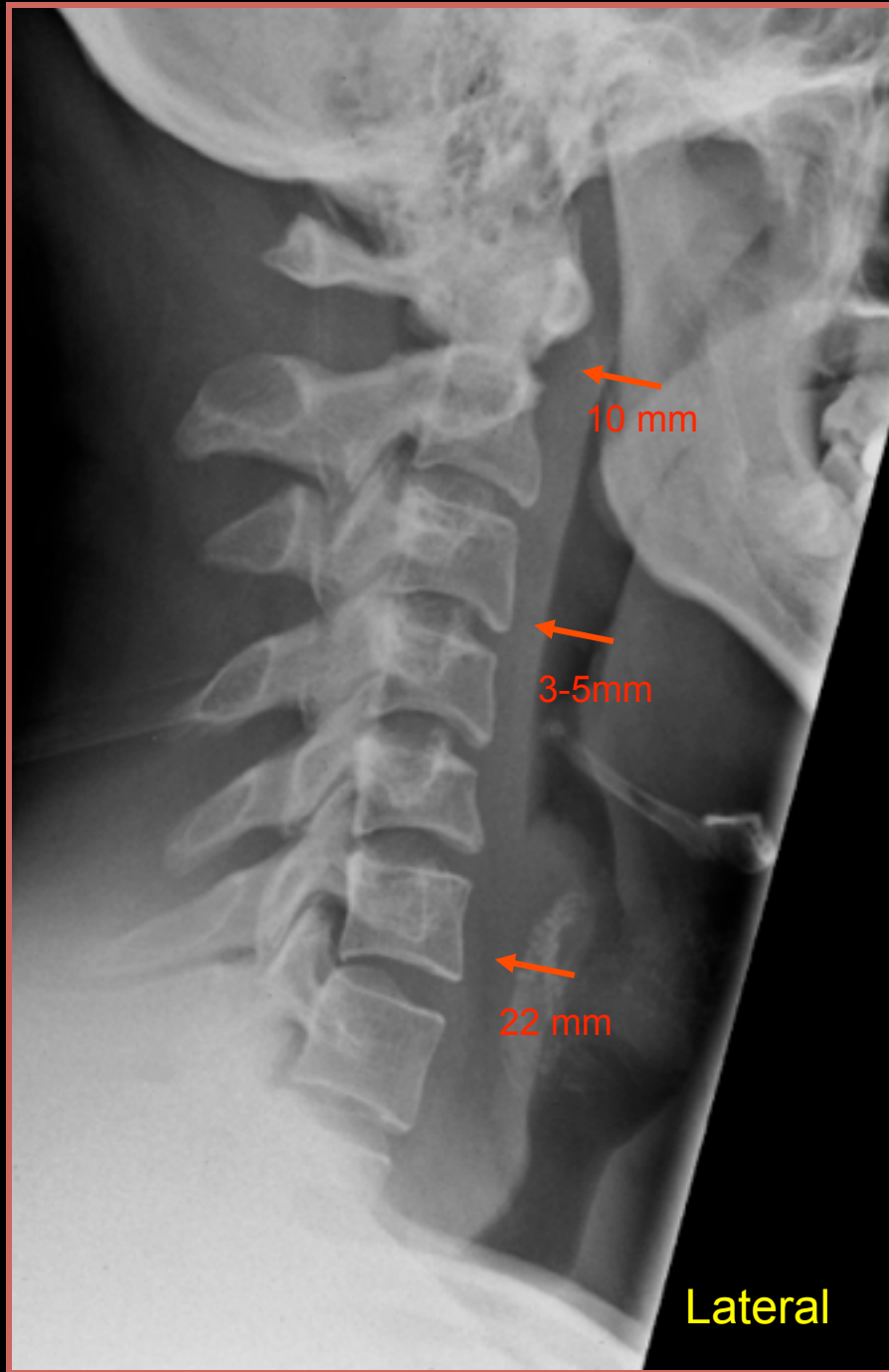




















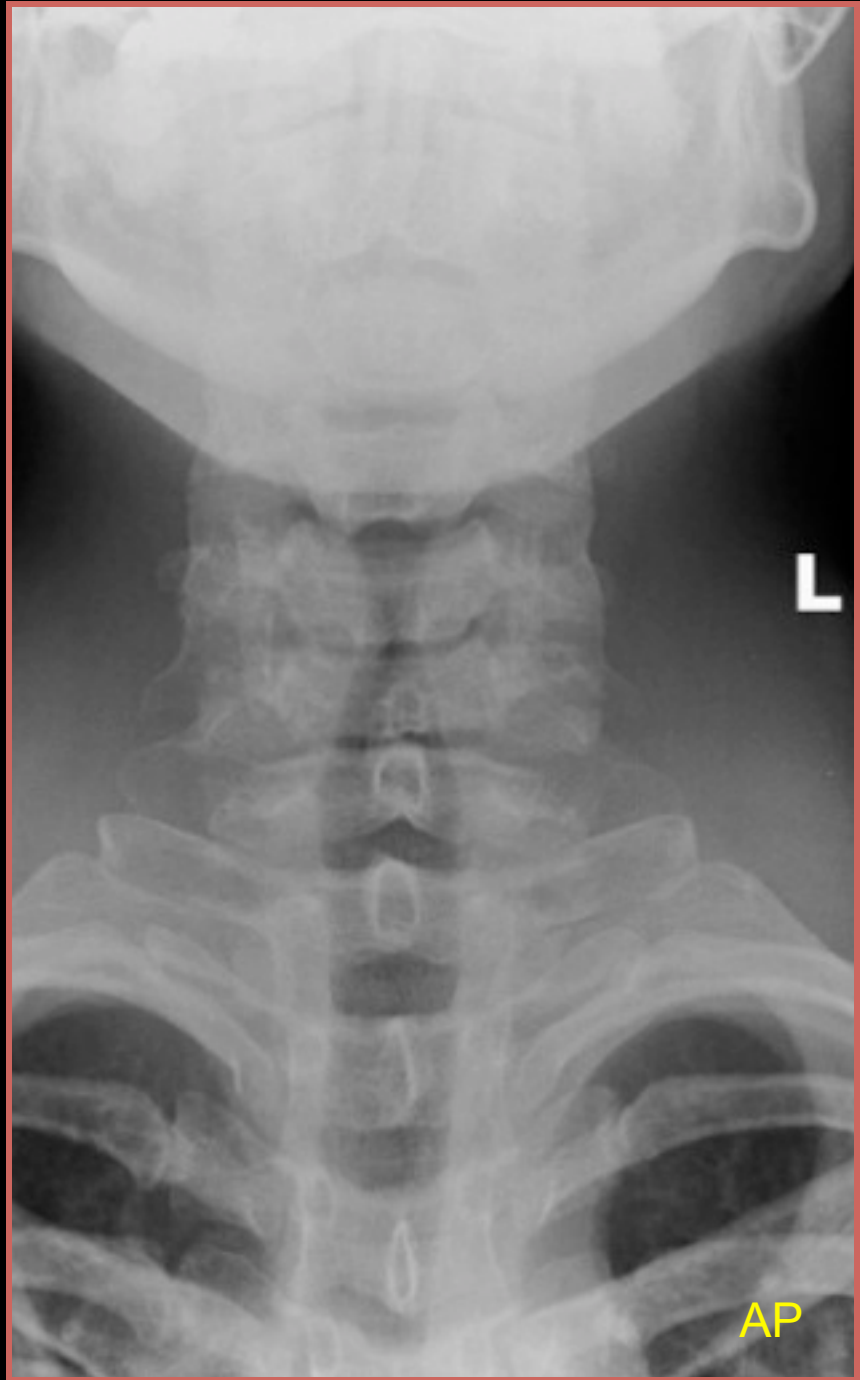








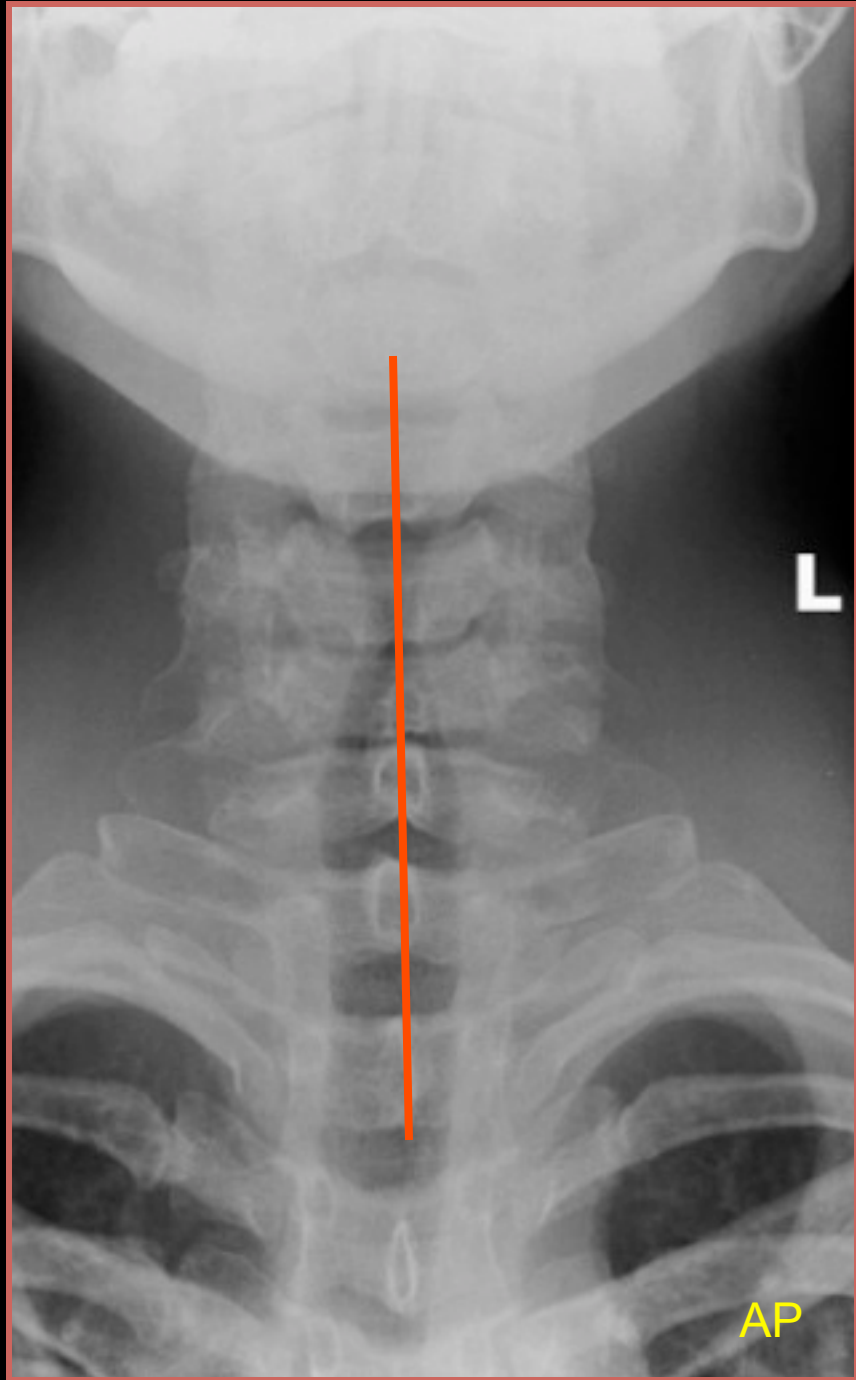


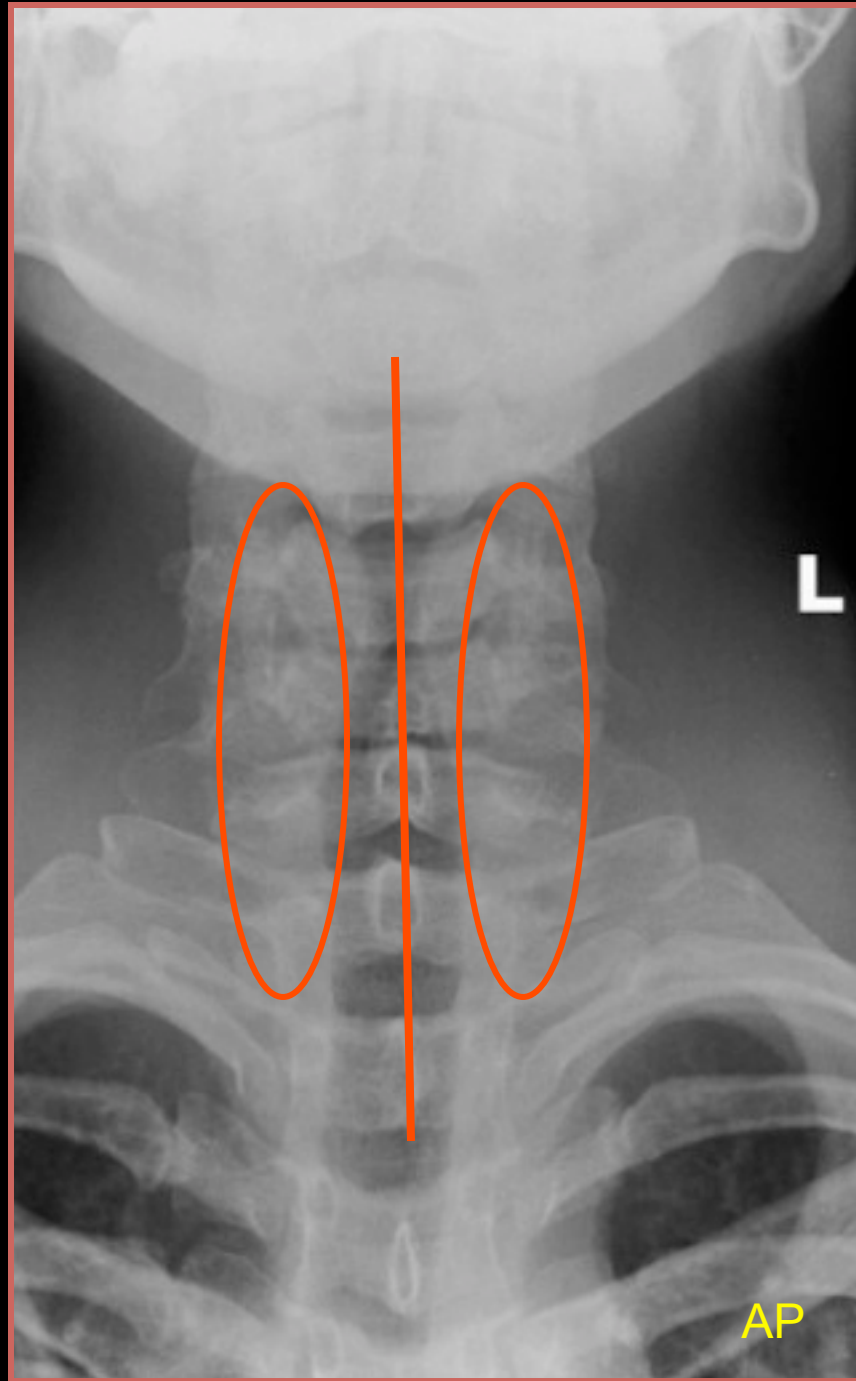






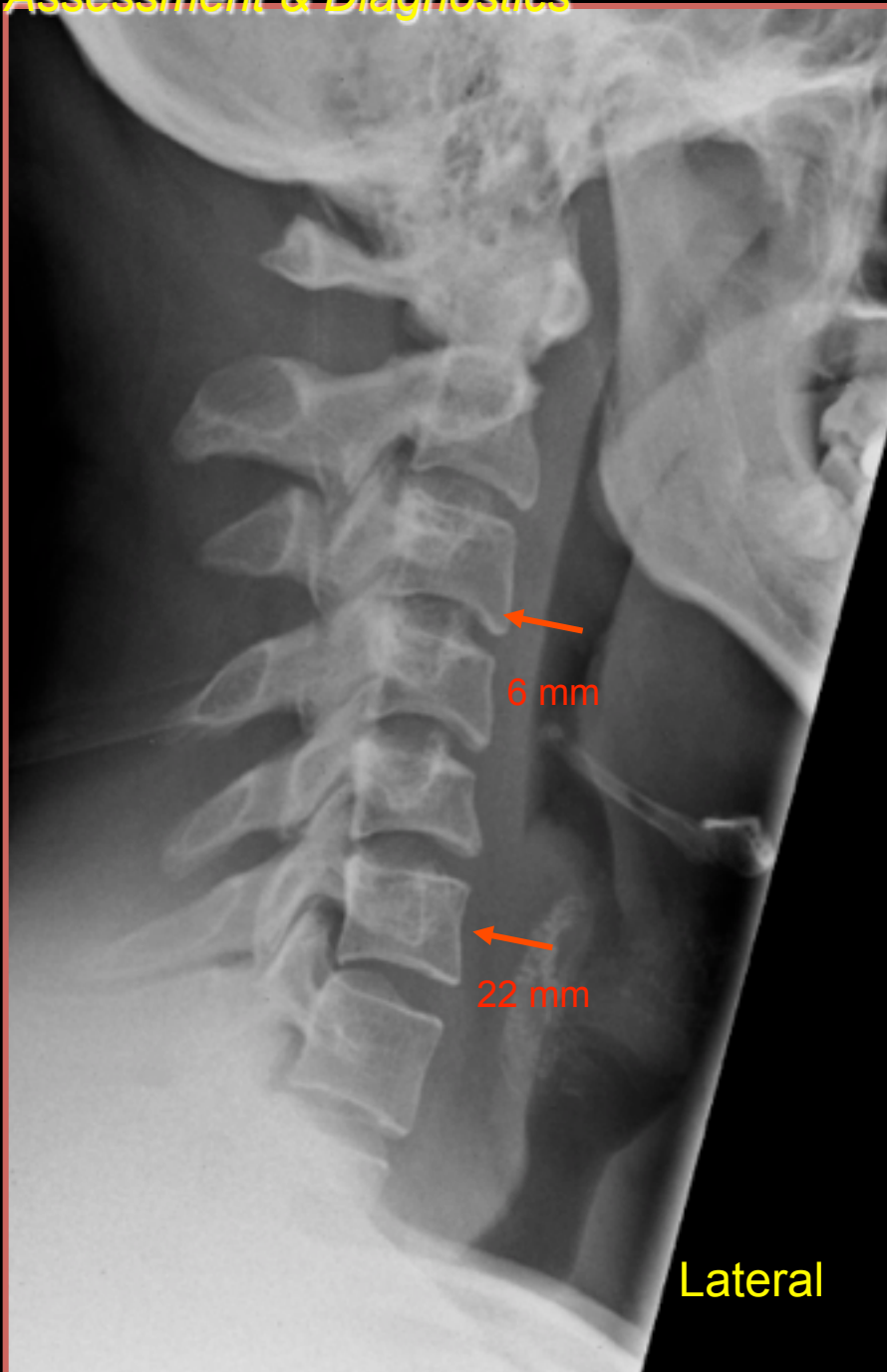




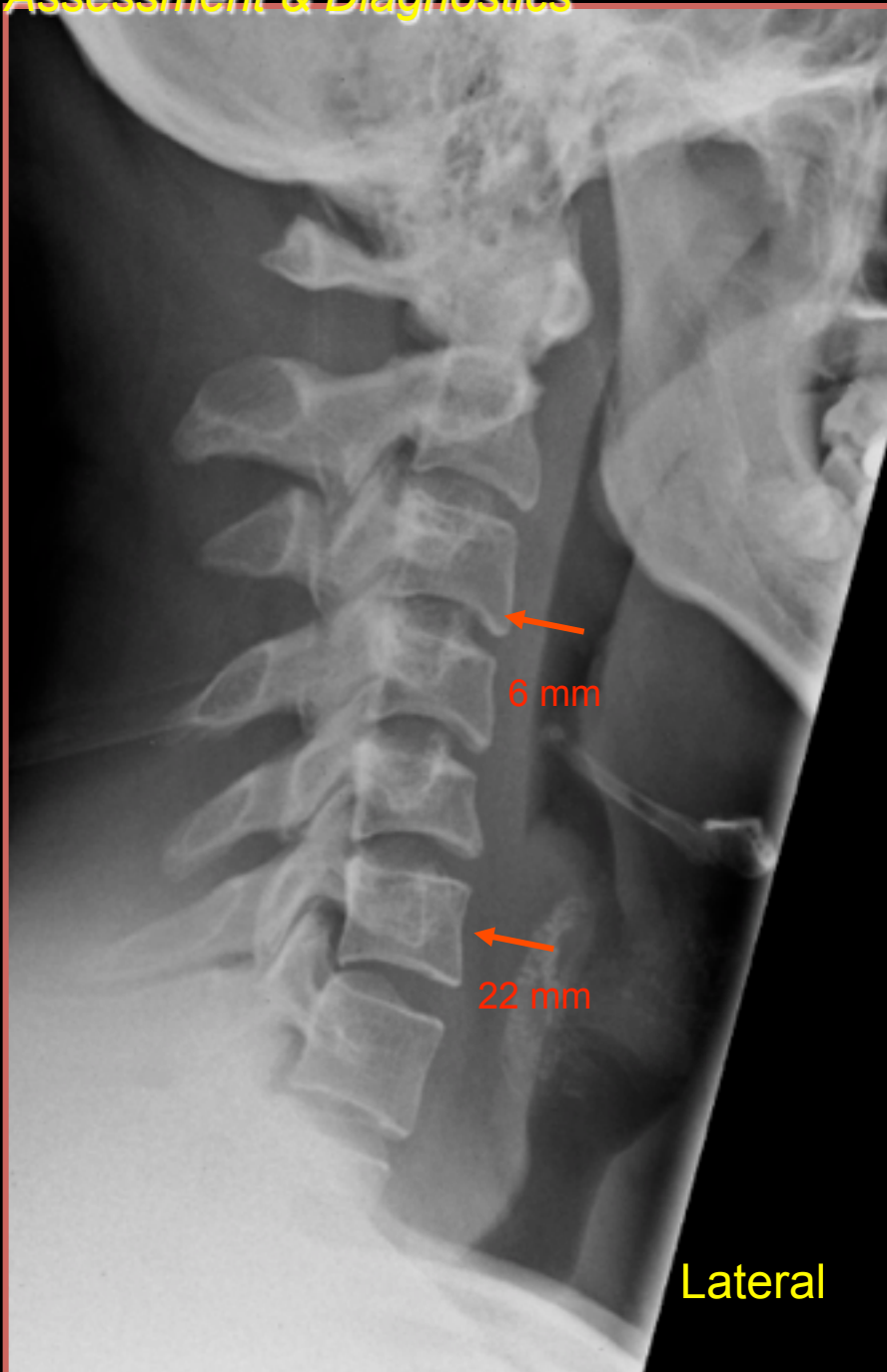


**Assessment & Diagnostics**

*Plain x-ray*



**Lateral**



Review of prevertebral  
haematoma:

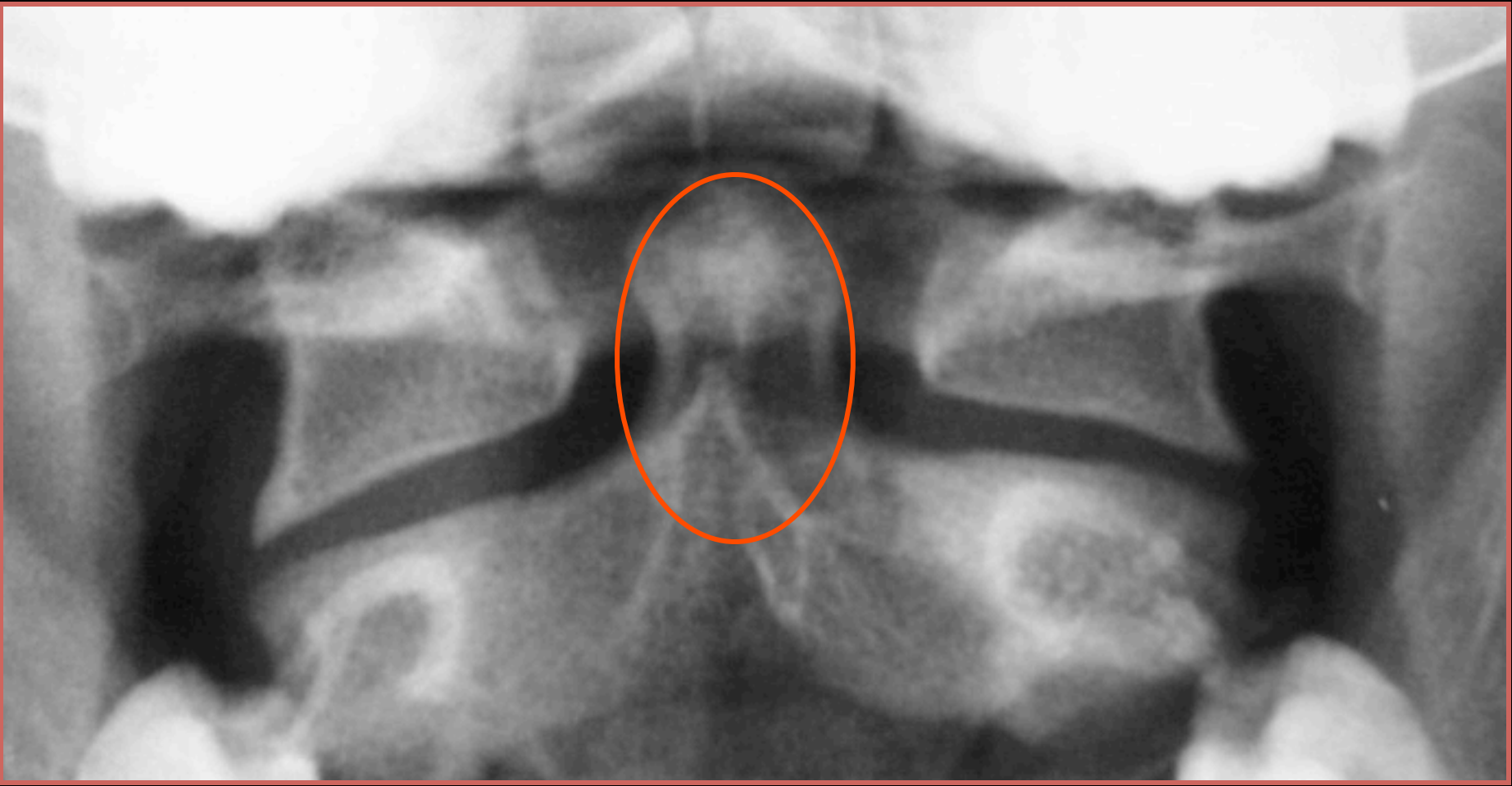
- *unreliable*

low sensitivity (5% C6, 59-66%  
C3)

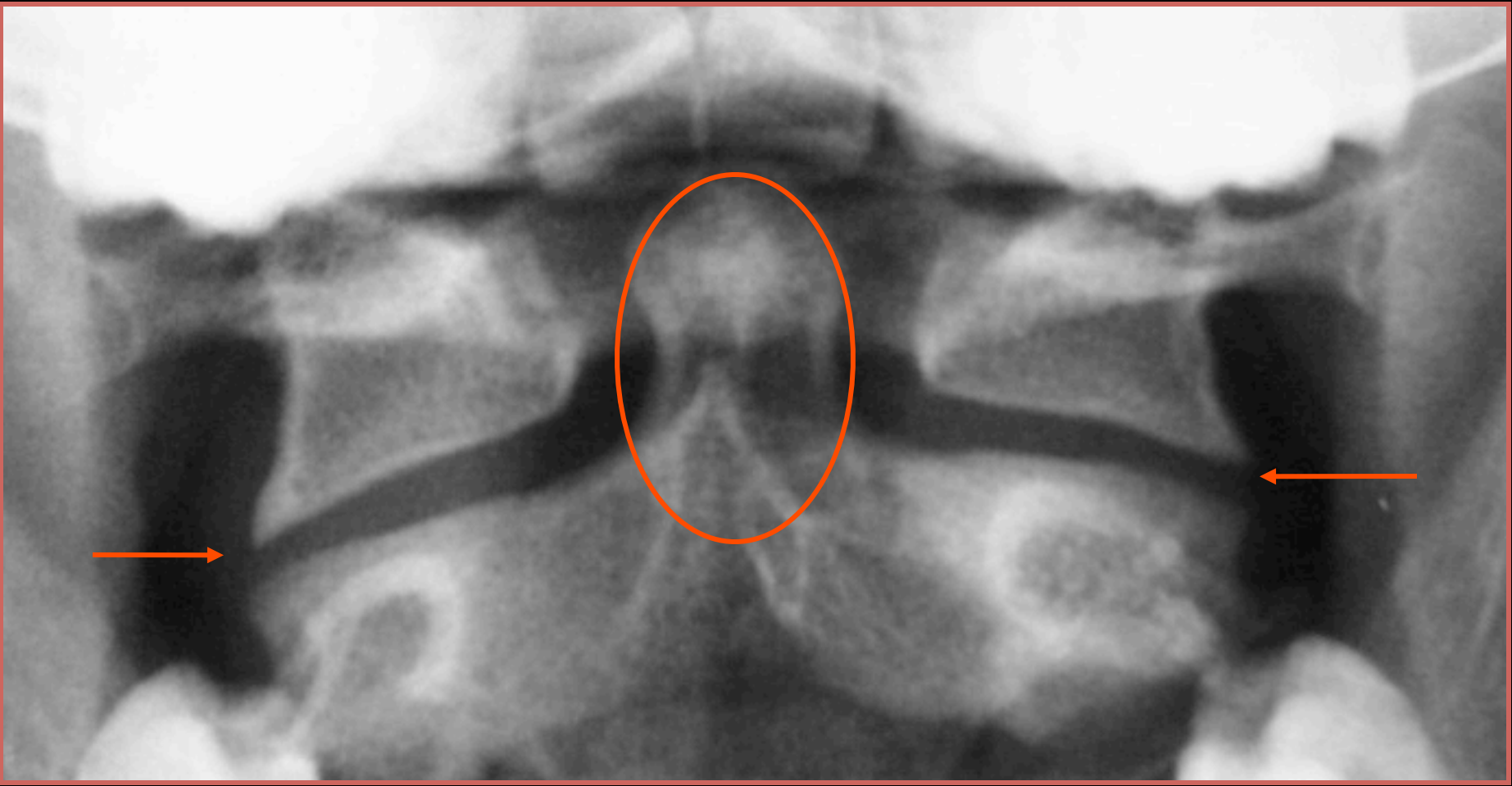
*DeBehnke and Havel, 1994 (C2 and C6)*



Odontoid view



Odontoid view



Odontoid view