

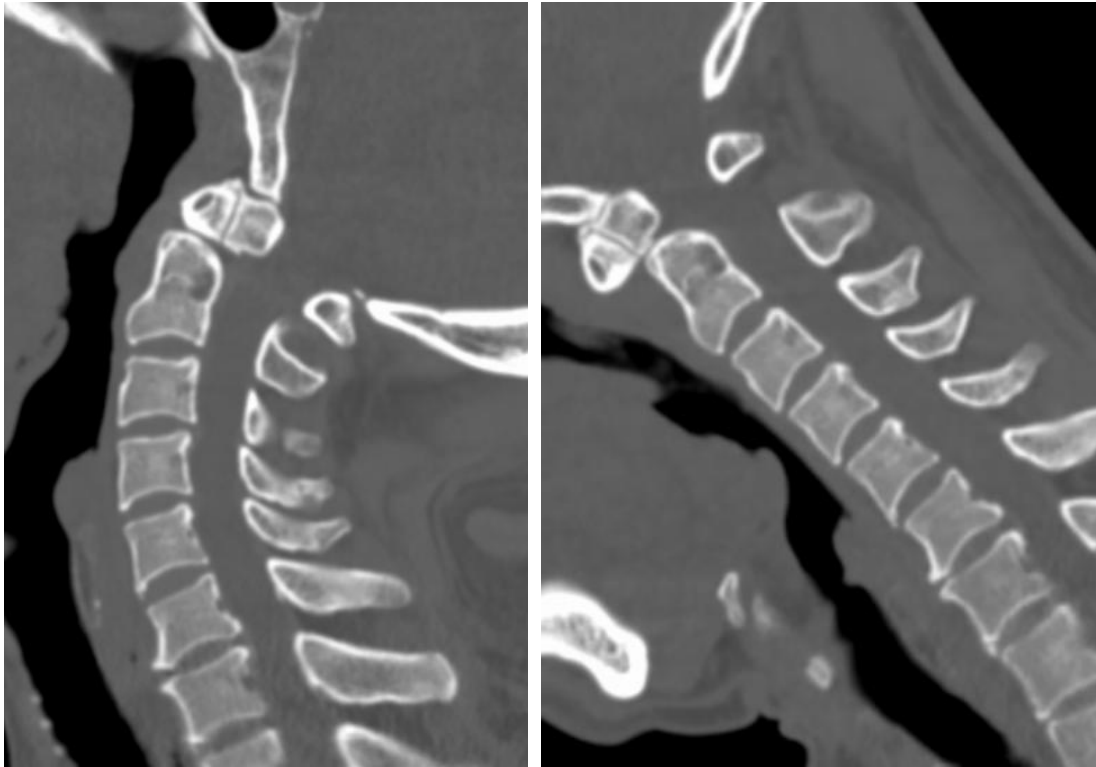
Dynamic CT imaging of the cervical spine in patients with atlantoaxial instability

Objective: We proposed to evaluate more details of the facet alignment and the implications of mal-alignment of facets by dynamic CT imaging of the cervical spine in patients with atlantoaxial instability.

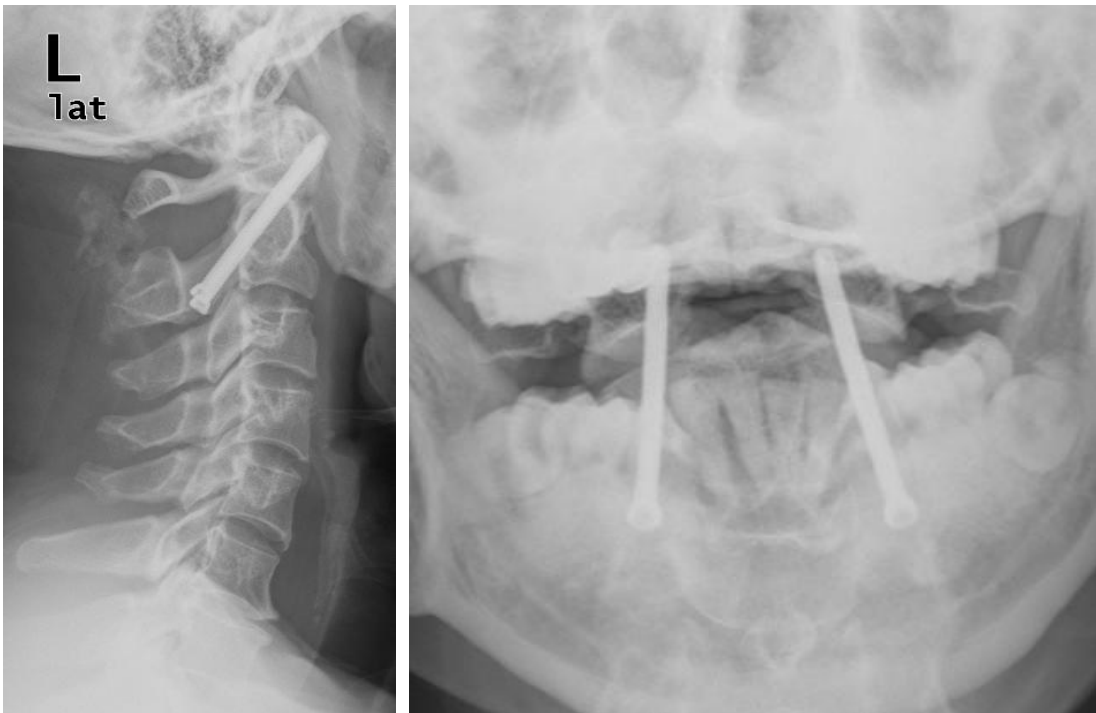
Methods: This retrospective study included 16 patients (9 males, 7 females) with or without atlantoaxial instability. Radiography and CT were performed with the neck in the neutral position, flexed and extended position. MR imaging was performed in the neutral position in all patients. Atlanto-dental interval (ADI), dynamic change of the facet joints congruence were taken.

Results: In this study, dynamic CT was performed for 16 patients. Of 7 patients were diagnosed atlantoaxial instability, 8 cases combined with Os Odontoideum , 5 cases associated with basilar invagination. Posterior instrumentation and fusion at only the C1–2 level was performed in 9 patients. Whereas C1–2-level fixation and fusion using Margel's technique was performed in 2 patients with anomalous VA, and occipitocervical fusion combined with transoral anterior decompression was performed in 5 patients with basilar invagination. Another one patient with bilateral partial bony avulsion fracture of transverse atlantal ligament, without atlantoaxial instability, received conservative treatment. All these patients have good and excellent improvement after treatment at the following-up.

Conclusions: The alignment of the upper cervical spine may change significantly according to the neck position. Dynamic computerized tomography scan can provide usefully more detailed information to the diagnosis and the management of atlantoaxial instability.



Pre-OP dynamic CT scan



Post-OP X ray