

# Atlantoaxial Subluxation in Rheumatoid Arthritis

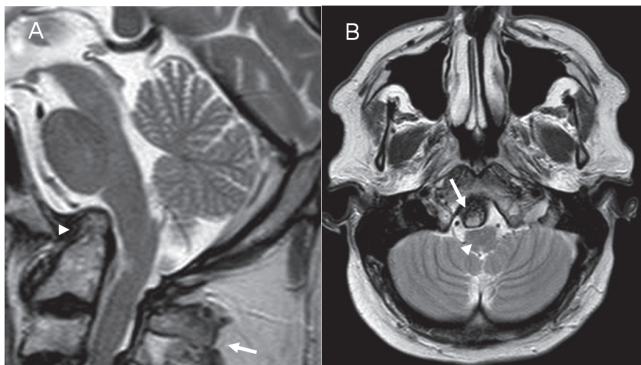
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The first description of the cervical spine involvement in patients with rheumatoid arthritis (RA) dates to 1890 and was made by Sir Archibald Edward Garrod<sup>1</sup>. RA is the most common inflammatory disease involving the cervical spine<sup>2</sup>, and anterior atlantoaxial subluxation, resulting from laxity of the primary and secondary ligamentous restraints, is the most common cervical deformity associated with RA<sup>3</sup>.

In February 2013, a 40-year-old white man presented to our neurological department with subcontinuous hiccups that had started 1 month before. Moreover, he reported occipital pain and mild 4-limb paresthesias and weakness. The patient reported he had been diagnosed with RA 12 years prior and was taking immunosuppressive treatment with steroids. He denied any trauma and so a traumatic

cervical injury such as a Jefferson fracture was ruled out. At neurological evaluation he presented mild weakness of the distal and semidistal upper limb muscles and brisk reflexes in all 4 limbs. Plantar reflex was bilaterally upgoing. A T2-weighted turbo spin-echo magnetic resonance image showed an atlantoaxial subluxation with superior migration of the dens and protrusion of the tip into the occipital foramen, causing compression and dislocation of the medulla oblongata (Figure 1A and 1B). Surgical treatment was recommended but the patient refused.

The involvement of the atlantoaxial articulation may lead to severe neurological symptoms and even to death from acute respiratory failure due to brainstem compression<sup>4</sup>. Because of its potentially lethal effects, cervical spine involvement in RA should be promptly diagnosed and treated. Biologic agents are often sufficient to slow the progression of the disease, but early surgical intervention is often required, especially for RA patients with neurological deficits<sup>5</sup>.



**Figure 1.** A. Sagittal T2-weighted turbo spin-echo (T2 TSE) magnetic resonance image (MRI) showing atlantoaxial subluxation with superior migration of the dens and protrusion of the tip into the occipital foramen, causing compression and dislocation of the medulla oblongata. The spinous process of the axis (arrow) and the large erosion on the ventral side of the dens (arrowhead) are indicated. B. Axial T2 TSE MRI showing protrusion of the dens axis (arrow) compressing the medulla oblongata (arrowhead).

## REFERENCES

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