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Letter to the Editor

Atlantoaxial rotatory dislocation in a patient with psoriatic spondyloarthritis

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We report the case of a 33-year-old male patient referred neck pain during the last year, with a progressive limitation of mobility, which worsened rapidly after a cervical whiplash injury. Physical exploration showed cervical spine in flexion and right rotation, great limitation and muscle contracture. Neurological exploration was normal. Simple X-ray, computed tomography and magnetic resonance (MRI) showed a Type III atlantoaxial rotatory dislocation with no compressive myelopathy and left mass displacement (Fig.1a, Fig. 2). The patient was treated with a sternal-occipital-mandibular immobilizer and Gardner-Wells tongs with traction without improvement. Finally, surgical cervical fixation of C1-C2 was performed through posterior approach (Fig.1b). Intraoperatively, the neurosurgeon observed the fusion of the spinous apophyses of the fifth and sixth cervical vertebrae. Inflammatory spondyloarthritis was suspected and he was referred to Rheumatology. The patient referred intermittent episodes of inflammatory back pain since the age of 16. He didn't present arthritis, enthesitis, diarrhoea or uveitis neither relevant family history. Physical exploration showed total fixation of the cervical spine. An erythematous cutaneous plaque was diagnosed as psoriatic by a dermatologist. An increase in the acute phase reactants was found. The patient was negative for rheumatoid factor and HLA-B27. Radiographic images showed grade III-IV bilateral sacroiliitis, fusion of the spinous cervical apophyses and cervico-dorsal syndesmophytes. Psoriatic spondyloarthritis was diagnosed and remission of inflammation was achieved with infliximab 5 mg/kg.

Rotation of the spine mainly depends on the atlantoaxial joint. The transverse ligament and atlantoaxial facet joint prevent anterior dislocation and alar ligaments prevent excessive rotation and anterior shift of the atlas. C1-C2 diastasis = > 4 mm entails affectation of the transverse ligament and >6 mm a lesion of both the alar and transverse ligaments [1].

According to Fielding and Hawkins classification of atlantoaxial rotatory subluxation (AARS) [2], our patient presents a Type III AARS with anterior displacement of the atlas of 20 mm, which means total insufficiency of the transverse and alar ligaments.

Typical clinical presentation includes cervical pain and torticollis [1,2]. AARS is mostly seen in paediatric patients with conditions

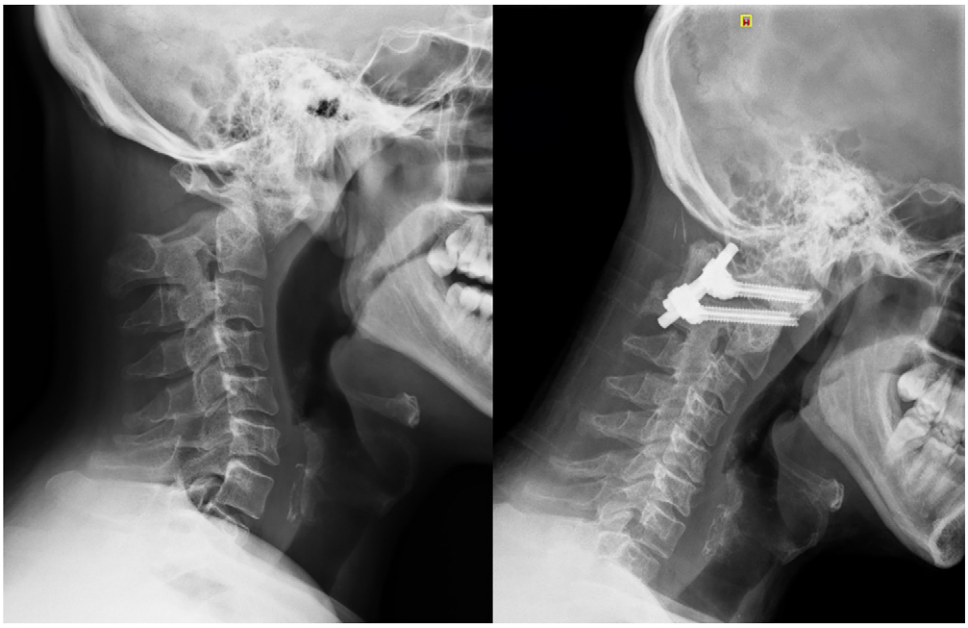

Fig. 1. Radiograph of the cervical spine.

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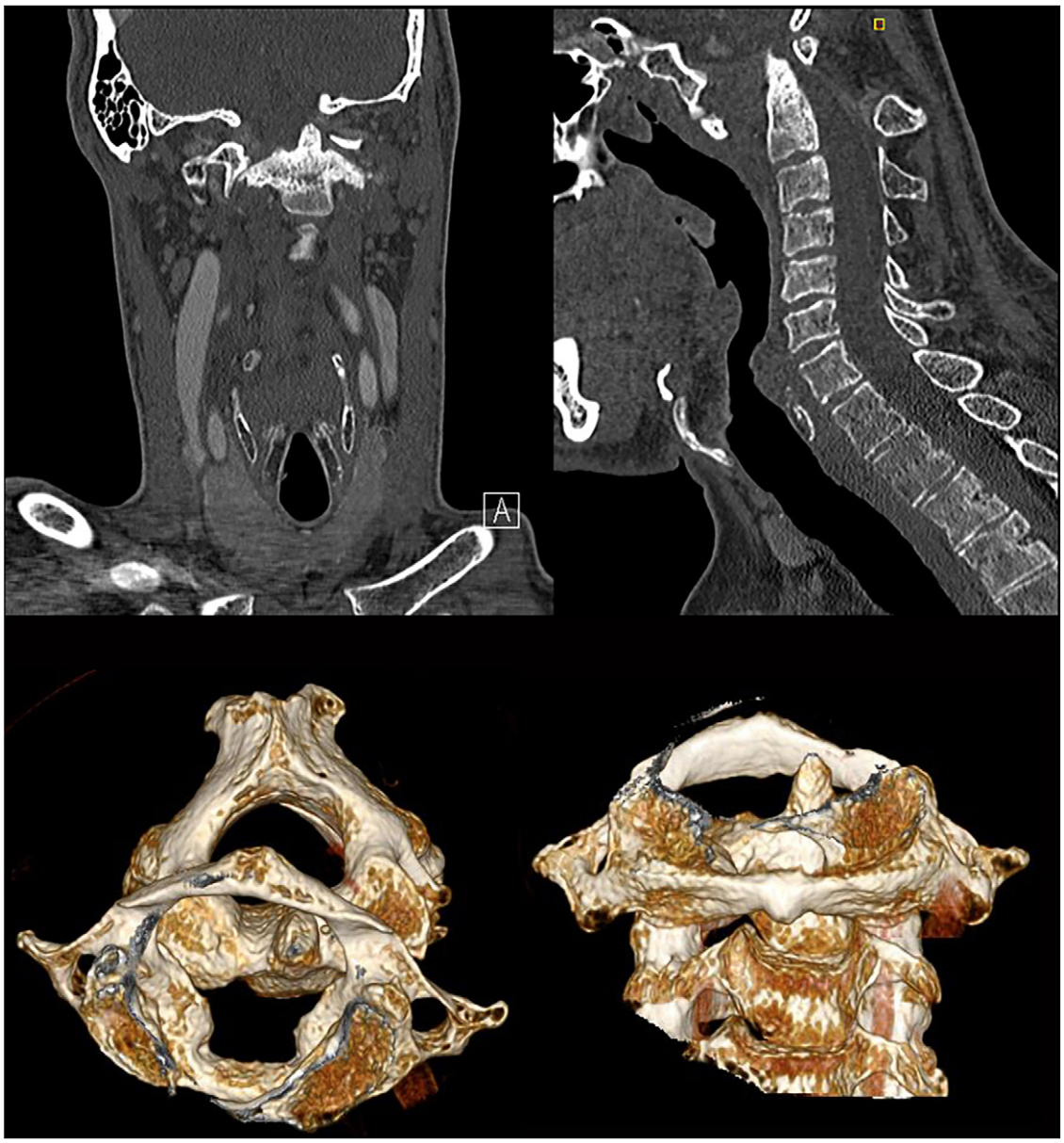

Fig. 2. Computed tomography of the cervical spine.

that predispose them to ligamentous laxity. In contrast, it has rarely been described in adults and is usually associated with trauma. Only four cases associated with spondyloarthritis have been described in literature: two children with undifferentiated forms and two young adults with ankylosing spondylitis (AS) [3–6].

Atlantoaxial subluxation(AAS) is a rare complication of spondyloarthritis with a prevalence of 2–21% in patients with AS and 5–23% in those with psoriatic arthritis (PsA), being anterior AAS the most frequent. Two pathophysiologic mechanisms are postulated: the enthesitis of the transverse ligament and the formation of pannus around the odontoid process, as in rheumatoid arthritis (RA), may invade periarticular tissues and destroy bones and ligaments [7].

One of the complications is myelopathy caused by the compression of odontoid subluxation or by the mass effect of the pannus. Some studies suggest that atlantoaxial instability causes periodontoid pannus formation and that surgical stabilisation produces a spontaneous regression of the synovial hypertrophy and favours medullary decompression [8].

Cervical involvement in psoriatic arthritis (PsA) is found in 35–75% of patients, although 41% are asymptomatic. Usually presents a polyarticular pattern, with an increase of acute phase reactants and a long evolution of the disease [7–9], although in some cases it can be an initial symptom [5,10].

Our patient probably suffered psoriatic spondyloarthritis with cervical involvement since childhood. The mechanism implied seems to be ligament enthesitis as no pannus formation was observed in cervical MRI. Cervical instability was worsened by a traumatic mechanism of injury that led to dislocation.

Consequently, when a spondyloarthritis patient presents cervical pain with torticollis, the possibility of an AARS due to involvement of the transverse or alar ligaments should be considered.

Disclore of interest

The authors declare that they have no competing interest.

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