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IMAGES OF SPINE CARE

Spontaneous atlantoaxial rotatory dislocation in a patient with ankylosing spondylitis

In July 2012, a 24-year-old man with a 13-year history of ankylosing spondylitis presented with cervical pain and weakness of both the upper and lower extremities. These conditions had initially developed 4 months ago and had progressed rapidly over the preceding 2 months, resulting in dyspnea on admission. Physical examination revealed decreased muscle strength throughout the limbs (Grade 2 of 5) and generalized hyperreflexia. A lateral plain radiograph showed severe anterior dislocation of the atlas on the axis that markedly compromised the spinal canal (Fig. 1). A sagittal computed tomographic scan revealed marked anterior and vertical migration of the dens with narrowing of the spinal canal at the level of C1, resulting in substantial cervicomedullary compression (Fig. 2, Left). A coronal computed tomographic reconstruction showed marked displacement of the C1–C2 facet joints concurrrent with rotatory subluxation (Fig. 2, Right). A halo-dependent traction followed by occipitocervical arthrodesis was performed according to the guidance of Chien et al. [1]. Postoperatively, the patient experienced improvement in muscle power and sensory function and discharged from hospital 16 days after the initial surgery. At the 2-year follow-up, he was able to walk with the aid of a walker, along with a favorable radiologic outcome (Fig. 3).

Fig. 1. Lateral cervical radiograph demonstrating marked anterior and vertical migration of C1 on C2 and severe ankylosis of the subaxial cervical spine.

Reference

[1] Chien JT, Chen IH, Lin KH. Atlantoaxial rotatory dislocation with hypoglossal nerve palsy in a patient with ankylosing spondylitis. A case report. J Bone Joint Surg Am 2005;87:1587–90.

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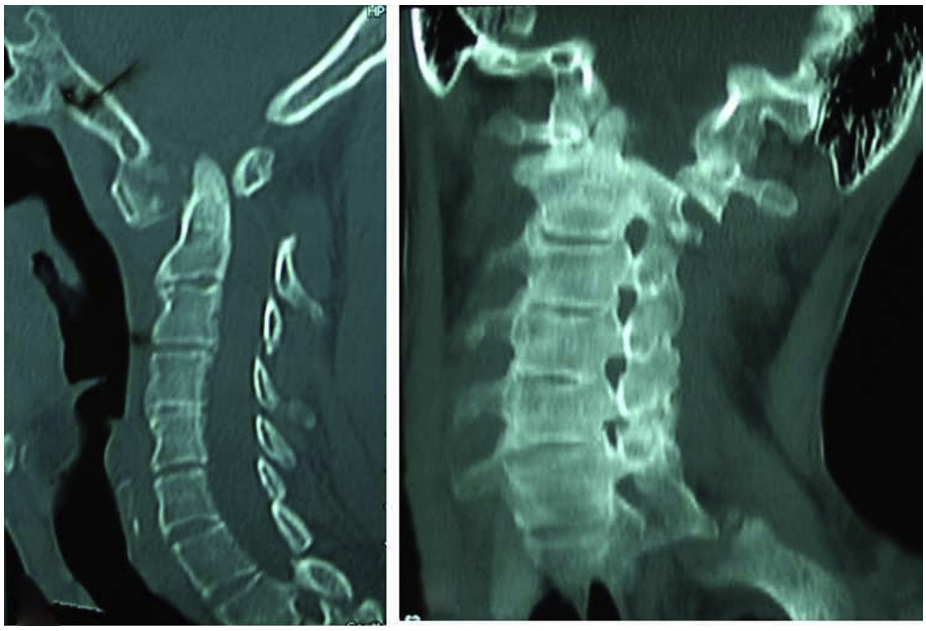

Fig. 2. (Left) Sagittal computed tomographic reconstruction demonstrating anterior subluxation and vertical migration of the dens with marked cervicomedullary compression. The anterior atlantodental interval measures 14 mm. (Right) A coronal computed tomographic reconstruction showed marked displacement of the C1–C2 facet joints concurrent with rotatory subluxation.

Fig. 3. Two years after the initial surgery, lateral cervical radiograph of the same patient revealed a favorable radiologic outcome with a solid occipitocervical fusion and without the loss of correction.