Cauda Equina Syndrome in Ankylosing Spondylitis

Anatomical, Diagnostic, and Therapeutic Considerations

By

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With 4 Figures

Summary

This article describes a case of cauda equina syndrome associated with ankylosing spondylitis, and reviews 28 additional cases in the literature. The neurological symptoms appear late in the evolution of spondylitis, when it is at an inactive stage. The diagnosis is easily confirmed by myelography, with water-soluble contrast and performed in a supine position, and by computerized tomography (CT) scan of the lumbar spine. The typical features are a dilated lumbar sac with multiple dorsal diverticula. The pathogenesis of this entity remains the subject of speculation. Arachnoiditis with subsequent adhesions is the most likely explanation. No treatment has proved helpful so far. Surgery is not indicated.

Keywords: Ankylosing spondylitis; Bechterew’s disease; rhizomelic arthritis; cauda equina syndrome; CT Scan.

Introduction

The cauda equina syndrome is a rare complication of ankylosing spondylitis (AS), but should be diagnosed easily. We report a case, and review 28 additional reports. From our personal experience and the analysis of surgical and post-mortem reports, surgical exploration appears to be contra-indicated.

Report of a Case

The patient, a 51-year-old man, was referred to us for urinary incontinence. He had had ankylosing spondylitis for 34 years. At the age of 17 he was hospitalized for pain in both hips. He remembered that, at that time, he had
bilateral ankle clonus. The diagnosis of AS, based upon radiological abnormalities, was firmly established at the age of 21, and he has suffered since from progressive limitation of motion in the back and hips. No radiotherapy was given. Walking was temporarily ameliorated by bilateral arthroplasty of the hips, but the prostheses had to be removed later on. On admission, he was walking with crutches.

From the age of 32 he had been impotent; he had been incontinent of urine for 10 years.

On clinical examination, this thin man showed a diffuse muscular wasting of both lower limbs, particularly in the buttocks. The entire spine was ankylosed, and movements of the hips were restricted to \(30^\circ\). Chest expansion was very limited. Walking was difficult, even with crutches. Knee jerks were normal, ankle jerks were absent, plantar reflexes were flexor. Cutaneous sensation was reduced in the first sacral dermatome bilaterally and absent in the perineal area (2nd to 5th sacral dermatomes). There was no anal reflex. The feet were anhydrotic. Incontinence of urine required a clamp on the penis. Physical examination was otherwise normal.

Inflammatory blood tests were normal, including erythrocyte sedimentation rate.

Radiographs of the spine confirmed classical ankylosing spondylitis with syndesmophytes bridging adjacent vertebrae (classic “bamboo spine”), and fusion of the sacro-iliac joints. The vertebral bodies were demineralized. Both femoral heads were absent due to the previous arthroplasties.

Electromyography in the muscles supplied by L 4, L 5, S 1 showed neurogenic abnormalities (polyphasic motor units pulsating at increased velocity; intermediate pattern on maximal muscular contraction).

The CT scan of the lumbar spine disclosed heterogeneous density of the vertebral bodies; the spinal canal was dilated irregularly, and had a rectangular

Fig. 1. CT scan. The lumbar spinal canal is irregularly dilated; erosion of the laminae