rheumatoid arthritis assessed using stable isotopes. J Rheumatol 1993;20:1196-200.
16. Steinbrocker O, Traeger CH, Batteman RC. Therapeutic criteria in rheumatoid arthritis. JAMA 1949;140:659-62.
17. Cimaz R. Osteoporosis in childhood rheumatic diseases: prevention and therapy [review]. Best Pract Res Clin Rheumatol 2002; 16:397-409.
18. Rooney M, Davies UM, Reeve J, Preece M, Ansell BM, Woo PM. Bone mineral content and bone mineral metabolism: changes after growth hormone treatment in juvenile chronic arthritis. J Rheumatol 2000;27:1073-81.
19. Reed A, Haugen M, Pachman LM, Langman CB. 25-hydroxyvita$\min \mathrm{D}$ therapy in children with active juvenile rheumatoid arthritis: short-term effects on serum osteocalcin levels and bone mineral density. J Pediatr 1991;119:657-60.
20. Lepore L, Pennesi M, Barbi E, Pozzi R. Treatment and prevention of osteoporosis in juvenile chronic arthritis with disodium clodronate. Clin Exp Rheumatol 1991;9 Suppl 6:33-5.
21. Warady BD, Lindsley CB, Robinson FG, Lukert BP. Effects of nutritional supplementation on bone mineral status of children
with rheumatic diseases receiving corticosteroid therapy. J Rheumatol 1994;21:530-5.
22. Gravallese EM. Bone destruction in arthritis [review]. Ann Rheum Dis 2002;61 Suppl 2:ii84-6.
23. Papanicolaou DA, Wilder RL, Manolagas SC, Chrousos GP. The pathophysiologic roles of interleukin-6 in human disease [review]. Ann Intern Med 1998;128:127-37.
24. Marzo-Ortega H, McGonagle D, Haugeberg G, Green MJ, Stewart SP, Emery P. Bone mineral density improvement in spondyloarthropathy after treatment with etanercept. Ann Rheum Dis 2003;62:1020-1.
25. Hermann J, Mueller T, Fahrleitner A, Dimai HP. Early onset and effective inhibition of bone resorption in patients with rheumatoid arthritis treated with the tumor necrosis factor $\alpha$ antibody infliximab. Clin Exp Rheumatol 2003;21:473-6.
26. Antoni C, Kavanaugh A, Krueger GG, Guzzo C, Wagner C, Buetler A, et al. Evidence for infliximab-induced improvement of bone metabolism in psoriatic arthritis. Arthritis Rheum 2004;50: S214-5.

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Clinical Image: Coexistence of diffuse idiopathic skeletal hyperostosis and ossification of the posterior longitudinal ligament of the cervical spine in a patient with ankylosing spondylitis


The patient, a 53-year-old man, presented with low back pain and limitation of motion of the entire spine. He had had ankylosing spondylitis (AS) of 11 years' duration. The pain had previously been tolerable with nonsteroidal antiinflammatory drug and tramadol treatment. He did not have peripheral arthritis or uveitis. The C-reactive protein level was $0.6 \mathrm{mg} / \mathrm{dl}$, and the erythrocyte sedimentation rate was $6 \mathrm{~mm} /$ hour. Radiography of the pelvis revealed bilateral sacroiliitis with syndesmophytes and ossification of the iliolumbar ligaments (not shown). Findings on lumbar spine and chest lateral radiographs were typical of AS and did not demonstrate heterotopic ossification of the anterior or posterior longitudinal ligaments (not shown). Radiography of the cervical spine revealed syndesmophytosis at $\mathrm{C} 2-\mathrm{C} 4$, with flowing ossification along the anterolateral margins of 4 contiguous vertebrae (C4-C7), with preservation of the intervertebral disc space and ossification of the posterior longitudinal ligament (OPLL) at C2-C5. Diffuse idiopathic skeletal hyperostosis (DISH) and OPLL are common hyperostotic spinal disorders in the elderly. These disorders sometimes coexist in a patient. However, whereas there have been reports of DISH or OPLL in patients with AS, to our knowledge the simultaneous occurrence of both DISH and OPLL in a patient with AS has not previously been reported.

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