

Low back pain: Is it significant?

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Case history

A 25-year-old Chinese man presented with low back pain. He had this aching pain for several years, but recently the pain became greater. On examination, he had limitation of spine movements, particularly on flexion and side-to-side bending. Radiographs of the lumbar spine were obtained.

Q.1 What are the radiological findings?

The anteroposterior radiograph (Fig. 1) of the lumbar spine shows haziness of the margins of both sacroiliac joints. Flowing ossification of the outer fibers of the annulus fibrosus across the T12–L1 and L1–L2 intervertebral discs forms syndesmophytes, giving the appearance of a 'bamboo spine'.

Q.2 What is the diagnosis?

The diagnosis is ankylosing spondylitis. Ankylosing spondylitis is part of the seronegative spondyloarthropathies which are a group of disorders characterized by asymmetrical oligoarthritis, spinal involvement and distinctive extra articular features. Ankylosing spondylitis has a male preponderance of 85%. Its exact etiology is still being elucidated, but current evidence indicates an association with HLA-B2704 and HLA-B2705; with a positive family history in 14.3% of the affected patients. The postulated autoimmune mediated chronic synovitis causes destruction of the articular cartilage and bony ankylosis. Most patients have sacroiliac joint involvement upon initial examination. The sacroiliac joints are typically symmetrically involved but may be unilateral or asymmetrical, as in this case. Initial radiographic changes reveal haziness of the sacroiliac joint. Progressive erosions cause pseudo widening of the joint space. This is followed by sclerosis and, ultimately, joint fusion.¹

Q.3 What are the diagnostic criteria for this condition?

Currently, the Modified New York criteria (1984) are widely used for diagnosis of ankylosing spondylitis. The criteria requires the presence of definite radiographic sacroiliitis and one of the following: (i) a history of inflammatory back pain; (ii) limitation of motion of the lumbar spine in both the sagittal and frontal planes; and (iii) limited chest expansion, relative to standard values for age and sex. The typical history consists of a back pain that is worse on arising in the morning and that is relieved on subsequent motion or exercise. The pain is persistent, deep and aching, and it is poorly localized in the buttocks and lower lumbar area. This is consistent with a history of inflammatory back pain. On physical examination, there is a loss of the normal lumbar lordosis. Chest expansion is less than the norm for this patient's age and sex. Schober's test and lateral flexion of the spine reveals a decreased range of motion in both planes.¹

Q.4 What is the radiological pattern of involvement?

Radiographically, axial skeleton involvement consists of vertebral body squaring, development of ligamentous mineralization, production of syndesmophytes and apophyseal joint ankylosis. Osteitis of the anterior corners of the vertebral bodies with subsequent erosion and the ossification of the anterior longitudinal ligament leads to 'squaring' of the vertebral bodies. Progressive ossification of the superficial layers of the annulus fibrosus produces formation of the marginal syndesmophytes. These changes in the axial skeleton create the classic 'bamboo spine'. Apophyseal joints also undergo similar changes. Extra axial joint involvement can occur in the ankles (39.5%), hips (36.1%), knees (29.3%), shoulders (19%), and sternoclavicular joints (14.3%). Extra articular involvement other than uveitis (17%) is rare. Enthesitis or inflammatory erosion of the entheses can occur in regions such as the ischial tuberosity and the greater trochanter. Subsequent healing and mineralization can

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Figure 1 Anteroposterior radiograph of the lumbar spine shows bilateral asymmetrical sacroiliitis (arrowheads) and syndesmophyte formation (arrows).

yield a 'shaggy' or 'whiskered' pattern at the affected regions.¹

Q.5 What are the possible differential diagnoses?

Differential diagnoses to be entertained are the other seronegative spondyloarthropathies such as the enteropathic arthropathies, psoriatic arthropathy and Reiter's syndromes, all of which may give rise to sacroiliitis.²

References

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