

# A Case Report on Ankylosing Spondylitis in a Pakistani Patient

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## Abstract:

**Background:** Ankylosing Spondylitis is the most common type of seronegative spondyloarthropathy. It is characterized by inflammation of multiple articular and para-articular structures, which in turn often leads to osseous ankylosis.

**Objective:** This case is relatively uncommon in Pakistani population especially in females, and to compare the clinical presentation of the condition in this Pakistani patient with what is known around the world using the Criteria widely recognized internationally.

**Materials and Methods:** A case report of a 51-year-old Pakistani woman with a history of back pain and radiographic imagery showing the classical findings of Ankylosing Spondylitis.

**Results:** The Patient is a known case of diabetes mellitus, hypertension and primary hypothyroidism, and has been suffering from chronic lower back pain and stiffness for more than 16 years now. Her symptoms are worst in the morning soon after waking up from sleep. She has restricted movements at hip joints and kyphosis on examination. She also has reduced chest expansion. Her X-rays shows typical bamboo spine appearance with syndesmophytes formation and squaring of vertebral bodies. Her presentation fits both European Spondyloarthropathy Study Group diagnostic criteria for spondyloarthropathies, and the modified New York Criteria.

**Conclusion:** This patient shows typical clinical and radiological findings of the Ankylosing Spondylitis, and fulfills the requirement of the diagnostic criterion

**Keywords:** Ankylosing Spondylitis, Bamboo spine, Lower back pain, sacroiliac joints, spondyloarthropathies

## INTRODUCTION

The term 'Ankylosing' is derived from the Greek word 'ankylos', which means stiffening of a joint, while 'spondylos' means vertebrae. Its prevalence is between 0.5 percent and 0.9 percent worldwide [1], [2], [3]. The prevalence differs from region to region. In Pakistan, the prevalence of ankylosing spondylitis is between 0.5% and 1.0%, and in Europe it can reach up to 1.4% [4].

The most common areas affected by ankylosing spondylitis are the spine and the sacroiliac joints. In addition to these areas, ankylosing spondylitis can affect tendons and ligaments, peripheral joints, eyes, skin and bowel causing enthesitis, arthritis, anterior uveitis, prostatitis, psoriasis and inflammatory bowel diseases [1].

Genetic heritage plays a strong role in the development of ankylosing spondylitis. Studies have linked human leucocyte antigen (HLA)-B27 with Ankylosing Spondylitis [1], [5], [6]. HLA-B27 positive patients represent more than 90 percent of patients with Ankylosing Spondylitis [7], [8] and usually have more severe clinical manifestations compared to HLA-B27 negative patients [6].

## CASE PRESENTATION

Our patient is a 51-year-old Pakistani woman who reported to Quaid-e-Azam International Hospital, Islamabad with complains of lower back pain and fatigue for the last 16 years. Pain begins at the lower back and radiates to the left foot and toes. The pain is severe and has gradually worsened over time. The symptoms were most pronounced early in the morning after sleep. Spinal movements have become very restricted in all directions. She cannot sit in a squatting position because of the painful hip joint restriction. There's no weakness of limbs. There's no history of fall or trauma. She is a known case of hypertension, type 2 diabetes mellitus, and primary hypothyroidism. There is a history of maculopapular rash 2 years ago. Rash was itching, and the fingers were swollen and erythematous, but warm. There is also a history of photosensitivity, but no oral ulcers. There has been no history of cough, chest pain, hemoptysis, abdominal pain, bowel and urinary complaints. She moved to Dubai 8 years ago and received physiotherapy for two years, but her problem continues to worsen over time.

**Examination:** conscious, oriented and Afebrile. General condition: stable, blood pressure 140/90 mm Hg, pulse 70

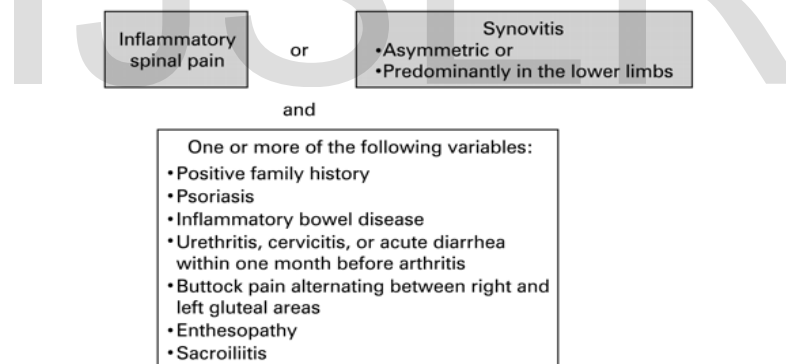
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bpm, edema or lymphadenopathy not seen. CVS examination revealed normal heart sounds without any murmurs or extra sounds. Examinations of her chest, abdomen, and CNS were normal except for 2 cm chest expansion. Examination of her musculoskeletal system revealed thoracic spine kyphosis. The movement of both hip joints was painful and restricted. She could not move her lumbar spine in any direction. There was mild tenderness over sacroiliac joints, spinal processes and iliac crests. She could sit with extreme difficulty. The modified schober test revealed an increase in distance of 3 cm. [The modified Schober test is a useful measurement of lumbar spine flexion. The patient stands upright with heels, and marks are made on the spine at the lumbosacral junction (identified by a horizontal line between the posterosuperior iliac spines) and 10 cm above. The patient then bends forward with fully extended knees, and the distance between the two marks is measured. In case of normal mobility, this distance increases by 5 cm and in case of decreased mobility, it is < 4 cm].

Her total blood count was normal with WBC= 7300/cmm, RBC= 3500, 000/cmm, HB= 12.3g / dl, platelets= 220000/cmm. Fasting blood sugar=123mg / dl, HbA1C=6.1 %. Blood urea= 29mg / dl and Creatinine= 0.79mg / dl. Liver function tests showed low albumin= 2.5gm. Total serum bilirubin-0.7mg / dl, unconjugated bilirubin-0.5mg / dl, conjugated bilirubin-0.2mg / dl, AST-26U / L, ALT-19U / L and ALP-86U / L. His serum cholesterol was slightly elevated (234mg / dl) with 149mg / dl serum triglyceride. ESR was high (39mm/1hr), but RF, ANA and CRP tests were negative. TSH = 7.40, fT4 = 1.14. Her ECG was normal. The human leukocyte antigen (HLA) type was negative for HLA B27.

An X-ray of lumbar spine was taken that showed bamboo spine appearance with squaring of vertebral bodies. [Fig1] X- ray of the pelvis revealed inflammation of sacroiliac joints. [Fig 2] Echocardiography revealed a 55 percent ejection fraction, no abnormality was seen. Ultrasound of the abdomen and pelvis showed fatty liver. A diagnosis of AS was made based on the modified New York criteria [Table1].

#### BOX 1: EUROPEAN SPA STUDY GROUP CLASSIFICATION CRITERIA FOR SPA



## DISCUSSION

Ankylosing spondylitis, also known as Bekhterev's disease and as Marie Strumpell disease [9], is a chronic inflammatory disease that mainly affects the spine. The onset of the disease is insidious, starts at night; pain improves with exercise but not with rest, associated with morning stiffness lasting more than 30 minutes [13]. AS is more common in men than in women, and its first symptom usually appears after the third decade of life [12]. Most patients are diagnosed after 40 years of age and the average delay between the onset of the disease and the time of diagnosis is between 5 and 8 years [13].

Low back pain is the first and most common symptom of AS [3]. The inflammation first affects the spine and then leads to the rib cage. Other sites may also be involved, such as sacroiliac joints, greater trochanters, spinal processes, ischial tuberosity, patella and calcaneum [14]. The early differential diagnosis is mainly lumbar disc lesions. The main feature that helps to distinguish disc lesions from AS

is that disc lesions are related to traumatic incidents in young people.

Ankylosing spondylitis is associated with reactive arthritis, psoriatic arthritis and arthritis associated with inflammatory bowel disease [7] as well as undifferentiated spondyloarthropathies.

Spondyloarthropathies are usually diagnosed according to the European study group classification (box1)[10].

Once the diagnosis is confirmed, the patient should be educated about the progression and complications of the disease. A regular lifelong exercise is the cornerstone of treatment along with other methods, such as disease - modifying drugs and surgical correction of skeletal deformities. Although the disease has been present for quite a long time now, but due to its causes and mechanisms, it is still one of the diseases that is difficult to diagnose early [3].

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**TABLE 1: THE MODIFIED NEW YORK CRITERIA WHICH IS USED TO DIAGNOSE ANKYLOSING SPONDYLITIS CRITERIA**

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Clinical criteria

- a. Low back pain and stiffness for more than 3 months which improves with exercise, but is not relieved by rest.
- b. Limitation of motion of the lumbar spine in both the sagittal and frontal planes.
- c. Limitation of chest expansion relative to normal values corrected for age and sex.  
( $<5\text{cm}$ =Abnormal in young adult)

Radiologic criterion of sacroiliitis grade greater than or equal to 2 bilaterally or sacroiliitis

Grade 3-4 unilaterally. Grades are as follows:

- a. 0 = normal
- b. 1 = suspicious changes
- c. 2 = minimum abnormality (small localized areas with erosions or sclerosis)
- d. 3 = unequivocal abnormality (moderate or advanced sacroiliitis with erosions, evidence of sclerosis, widening, narrowing or partial ankylosis)
- e. 4 = severe abnormality (total ankylosis)

Grading

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- 1. Definite Ankylosing spondylitis diagnosis if the radiologic criterion is associated with at least 1 clinical criterion.
- 2. Probable Ankylosing spondylitis if:
  - a. Three clinical criteria are present.
  - b. The radiologic criterion is present without any signs or symptoms satisfying the clinical criteria. (Other causes of sacroiliitis should be considered. )

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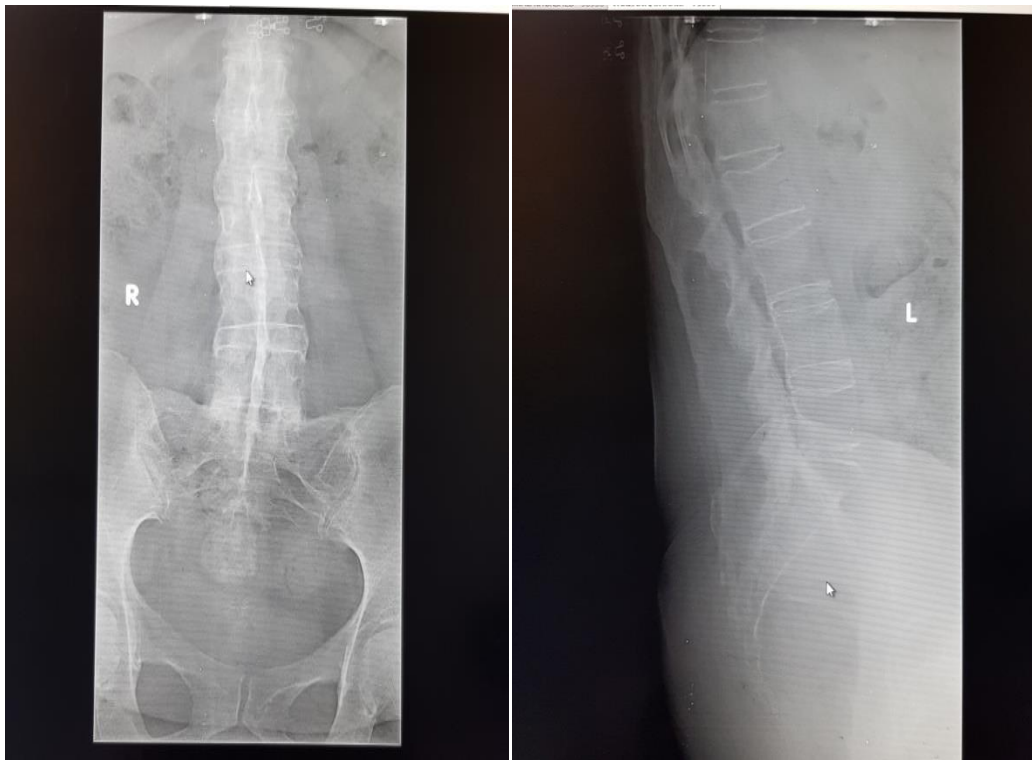


Figure 1: The X-rays of the patient (AP and Lateral views) showing bamboo spine and dagger spine signs with syndesmophytes formation and squaring of vertebral bodies.

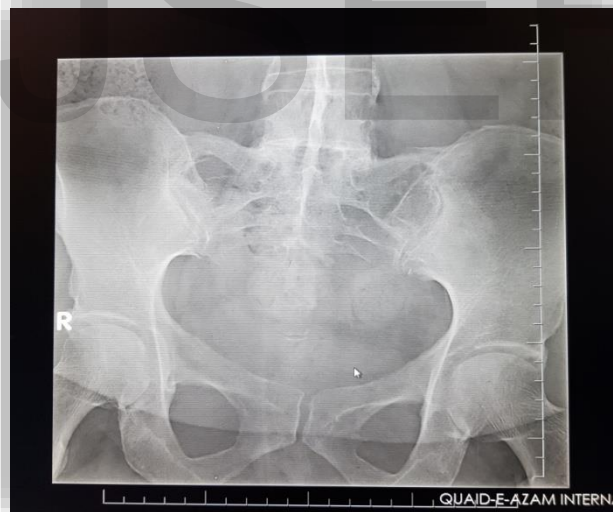


Figure 2: The X-ray pelvis of the patient showing inflammation of sacroiliac joints.

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