

Continuing Education

MODULE 1: Autoimmune diseases

PART 4

Ankylosing spondylitis: Teaching case studies

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ANKYLOSING spondylitis is a chronic inflammatory disorder typically involving the spine and the sacroiliac joints. This disease is a cause of chronic back pain in the younger population and affects typically young adults from the teens to early 20s. This disease is relatively common; the prevalence is approximately one per 200. Presented below are four short clinical cases of ankylosing spondylitis.

Case 1

Andrew is a 21-year-old trainee carpenter who has a two-year history of low back pain radiating down both buttocks and down the posterior aspect of his thighs. The pain and stiffness is eased with movement and exercise, but is much worse at night and with prolonged inactivity. The patient has significant night pain, which prevents him from sleeping properly. The patient also has profound fatigue and difficulty continuing work as a carpenter.

Examination revealed a reduced forward flexion of the spine. The patient also had reduced chest expansion of 2cm across the fourth rib space. The routine bloods (FBC and biochemistry) were normal but the inflammatory markers were elevated ESR = 41, CRP = 21.

X-rays of the lumbar sacral spine revealed early syndesmophyte formation. X-rays of the sacroiliac joints showed sclerosis of the lower one-third of the sacroiliac joint, indicating sacroiliitis.

Andrew was referred to a rheumatologist and was diagnosed with ankylosing spondylitis.

Teaching point

This is a case of inflammatory back pain. The history of improved symptoms with exercise and activity is more consistent with an inflammatory arthritic process. The onset of back pain is often slow and insidious as opposed to an abrupt onset. The disease usually begins in young individuals in the late teens or early 20s. It is very uncommon for the disease to begin after 45 years of age.

Case 2

Alan is an 18-year-old schoolboy who has had chest pain and back pain for the last six months. Alan also has a two-year history of right eye uveitis. The patient attended the services of a rheumatologist, who diagnosed ankylosing spondylitis with ocular disease.

The patient had confirmed sacroiliitis on the MRI scan of the sacroiliac joints. The scans below illustrate the bone marrow oedema at the sacroiliac joint.

Teaching point

Ankylosing spondylitis is a chronic systemic inflammatory disorder that primarily affects the axial skeleton (sacroiliac joints and spine). The disease can cause arthritis of the girdle joints (hips and shoulders) and peripheral arthritis can be a manifestation, though this is uncommon. Enthesitis and tendonopathy is a more common manifestation of ankylosing spondylitis. This teenager had chest pain as a presentation of ankylosing spondylitis with enthesitis of the costosternal areas.

Patients with ankylosing spondylitis can have extra-skeletal manifestations such as uveitis, pulmonary fibrosis, neurological, cardiac and renal involvement.

Extra-skeletal manifestations of ankylosing spondylitis:

- Acute anterior uveitis
- Cardiovascular involvement (aortic regurgitation)
- Pulmonary (upper lung fibrosis)
- Cauda equina syndrome
- Bowel mucosa lesions
- Amyloidosis, renal impairment.

Case 3

David is a 35-year-old man with a 10-year history of ankylosing spondylitis, diagnosed in the UK. David has symptoms of low back pain and stiffness, which is eased with anti-inflammatories. The patient has been taking long-term anti-inflammatories for the past seven years. David has not been to see a rheumatologist in the last six years.

David had routine bloods performed in a clinic which revealed an impaired renal function: urea = 11.5, creatinine = 162. There is no history of urinary tract infection or pyelonephritis.

The patient had an ultrasound scan of the kidneys that showed normal kidney size with no evidence of pyelonephritis. Urine sample showed a plus of protein. The urine culture for organisms was negative.

Overview of ankylosing spondylitis management

- Treatment with ankylosing spondylitis is individualised. The cornerstone will be a combination of exercise and/or physical therapy with medication. Flexibility and good posture are key
- Patient education is important to involve individuals in their own self-management. This should encompass knowledge about the disease process, treatments and coping strategies and the importance of follow-up and letting health professionals know when symptom control is not working
- In some hospitals, the clinical nurse specialist will have a major role to play as part of a multidisciplinary team
- Some patients may find simple analgesics helpful. NSAIDs are useful in relieving pain and stiffness and for spinal inflammation
- The DMARDs, sulfasalazine and methotrexate, may be effective in controlling symptoms of severe ankylosing spondylitis
- Biologic medications, adalimumab, etanercept and infliximab have more recently been licensed for the treatment of patients with severe active ankylosing spondylitis who have had an inadequate response to NSAID or DMARD treatment. These treatments are administered by injection and initiated and supervised by specialists. Patients will have a special alert card
- The recommended dose of adalimumab (Humira) for patients with ankylosing spondylitis is 40mg adalimumab administered every other week as a single dose via subcutaneous injection. Available data suggest that the clinical response is usually achieved within 12 weeks of treatment. Continued therapy should be carefully reconsidered in a patient not responding within this time period
- The recommended dose of etanercept (Enbrel) is 25mg administered twice weekly, or 50mg administered once weekly
- When using infliximab (Remicade) 5mg/kg given as an intravenous infusion over a two-hour period followed by additional 5mg/kg infusion doses at two and six weeks after the first infusion, then every six to eight weeks
- If a patient does not respond by six weeks (ie. after two doses), no additional treatment with infliximab should be given
- Patients on these treatments have to be carefully monitored for side-effects
- Another issue is that patients starting on biologics should be screened for TB and treated appropriately before therapy is initiated

The patient was asked to stop taking the anti-inflammatories completely and subsequently his kidney function recovered substantially.

Teaching point

Patients with chronic back pain and ankylosing spondylitis often take regular anti-inflammatories on a long-term basis without follow-up. This is an example of analgesia/anti-inflammatory nephropathy. Patients with impaired liver function or kidney function should have close monitoring of bloods when long-term anti-inflammatories are used.

David was encouraged to attend a rheumatologist for further follow-up and management. He was commenced on anti-TNF treatment without complications. The patient obtained substantial relief with the new medication and did not require any further regular anti-inflammatories.

Case 4

Mary is a 25-year-old accountant who has had a diagnosis of ankylosing spondylitis for two years. The patient has been on adalimumab injections twice a month for treatment of the ankylosing spondylitis. Mary has virtually no symptoms of back pain or stiffness on this treatment. Mary is just back from a four-week trip in India and presents to the clinic with a four-day history of malaise, night sweats and cough.

Examination of the patient revealed a pyrexia of 38°C and

bilateral lung crepitations. Mary was admitted to hospital for further assessment.

The chest x-ray revealed miliary changes in both lung fields. Diagnosis of pulmonary tuberculosis was made and the patient was commenced on antituberculosis therapy. The anti-tumour necrosis factor treatment was stopped on a temporary basis.

Teaching point

This is an example of primary pulmonary tuberculosis in a patient with ankylosing spondylitis receiving immunosuppressive treatment. Anti-TNF treatments are immunosuppressive and will predispose a patient to unusual infections such as tuberculosis. The most commonly used anti-TNF treatment include Humira (adalimumab), Enbrel (etanercept) and Remicade (infliximab).

The incidence of tuberculosis is increased in patients on anti-TNF treatment.

Patients receiving anti-TNF treatment receive tuberculosis screening prior to commencement of therapy. Mary had previous screening prior to starting anti-TNF treatment but had contracted tuberculosis when she was travelling in an endemic area in India.

Patients and doctors are required to be vigilant about the development of such infections while patients remain on anti-TNF treatment.

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