CASE REPORTS

An unusual presentation of gonococcal arthritis in an HIV positive patient

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Abstract

A 27 year old, HIV positive, homosexual man was admitted for evaluation and treatment of acute oligoarticular arthritis. Gonococcal arthritis was found in a single hip and a single sternoclavicular joint, which is an unusual distribution for this bacterial pathogen.

Gonococcal arthritis is a common, well described entity. Often polyarticular, it tends to affect the knees, wrists, small joints of the hands, ankles, and elbows.¹ Infection of the hip joint is rare with few reported cases.²⁻⁵ Gonococcal infection of the sternoclavicular joint has never been reported as far as we know. Sternoclavicular bacterial arthritis is an uncommon entity whose offending organisms are usually *Staphylococcus aureus* or *Pseudomonas aeruginosa*.⁶ We present an unusual case of gonococcal arthritis identified in an HIV positive man affecting both the hip and sternoclavicular joints.

Case report

A 27 year old, homosexual man was admitted to hospital with a 10 day history of fever and joint pains. The patient initially experienced arthralgias of the right ankle together with stiffness and pain in the right hand. These symptoms resolved spontaneously. Shortly after their disappearance he had progressive pain and limitation of motion in the right hip, which caused him to be bedridden. Simultaneously, he developed pain in the anterior left shoulder girdle overlying the acromioclavicular joint.

He had had no chills, night sweats, skin rash, sore throat, urethral or anal discharge, heel pain, back pain, muscle weakness, chest pain, parotitis, dry eyes or mouth, arthralgias, or myalgias. He denied intravenous drug use. His most recent sexual encounter was receptive anal intercourse 10 days before the onset of his first symptoms.

Physical examination showed an acutely ill man with a temperature of 38.4°C. The joint examination was remarkable for excessive warmth over the lateral aspect of the right hip. Right hip motion was dramatically reduced with virtually no active or passive movement. The left sternoclavicular joint was warm and tender to palpation. The shoulder's motion was normal, but activity produced discomfort over the acromioclavicular joint. There were no skin lesions, no heart murmur, and the other results of the physical examination were normal.

Pertinent laboratory findings included a white blood cell count of 10.1×10^9 cells/l with

80% polymorphonuclear leucocytes. A Westergren sedimentation rate was 95 mm/h. Urine analysis results were normal. Complement concentrations were normal. Human immunodeficiency virus (HIV) antibody testing by an enzyme linked immunosorbent assay (ELISA) and western blot analysis was positive. Radiographic examination of the hip and sternoclavicular joints was normal. Technetium-99m bone scan identified mildly increased uptake in the right hip and left sternoclavicular joints.

Urethral, throat, rectal, and blood cultures were negative for *Neisseria gonorrhoea*. Arthrocentesis of the right hip performed on the day of admission yielded 30 ml of cloudy synovial fluid containing 69×10^9 white blood cells/l, of which 98% were polymorphonuclear leucocytes. No crystals were seen. The Gram stain was negative, but the culture specimen grew *Neisseria gonorrhoea* sensitive to penicillin. The same fluid was negative for fungus and tuberculosis.

Before the culture report was available a presumptive diagnosis of infectious arthritis affecting the right hip and left sternoclavicular joints was made. Empirical treatment was started with intravenous cephalosporin 2 g/day. Repeat right hip arthrocentesis two days after starting antibiotic treatment yielded only 2 ml of fluid containing 35×10^9 white blood cells and 7×10^9 red blood cells/l. Culture of this sample was negative. Within this two day treatment period the patient's fever resolved, he had subjectively less discomfort in the right hip and left shoulder joints, and increased range of motion of his right hip. By the seventh day of intravenous treatment the patient was free from pain with a nearly normal range of right hip motion. He was discharged from the hospital and continued to receive oral antibiotic treatment (amoxycillin) for 14 days.

Discussion

Disseminated gonococcal infection in its bacteraemic or localised form is the most common bacterial arthritis reported today by urban medical centres in the United States.⁷ The disease is more common in women and infected patients are usually young and healthy. Risk factors for infection include menses, pregnancy, and late acting (C5, C6, C7, C8) complement protein deficiency.⁸

Disseminated gonococcal infection of the hip joint is rare. Rubinow reported two cases of septic gonococcal monoarthritis of the hip.² Tindall *et al* described one case of gonococcal osteomyelitis affecting the hip joint.³

The sternoclavicular joint is an unusual focus

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of bacterial infection. Wohlgethan *et al* discussed this rarity, reviewing the 65 cases reported in the post-antibiotic era.⁶ In this review diagnosis of infection was made by direct culture from the sternoclavicular joint in one or more of the following ways: (a) by blood cultures; (b) from the patient's history; (c) by culture of another joint in cases of polyarticular septic arthritis. Unfortunately, it is difficult to obtain sternoclavicular joint fluid.⁹

The most common causes of sternoclavicular bacterial arthritis are *Staphylococcus aureus* and, among intravenous drug users, *Pseudomonas aeruginosa*.⁶ Gonococcal disease of the sternoclavicular joint has not hitherto been described. One may clinically infer that the source of our patient's sternoclavicular arthritis was the same organism that was cultured from the hip, though this was not proved by culture.

A number of rheumatological manifestations of HIV infections have recently been described.¹⁰⁻¹⁶ Given the venereal transmission of *Neisseria gonorrhoea* it is surprising that HIV associated disseminated gonococcal infection is uncommon. Associated changes seen in HIV infections, such as impaired neutrophil function and poor antibody response to new antigens, would be expected to result in an increased incidence of disseminated gonococcal infection among the HIV infected subjects.^{13 14} The possibility that gonococcal infection might be encountered in joints not characteristically afflicted by disseminated gonococcal infection justifies enhanced clinical vigilance and suspicion. The primary means of treatment of disseminated gonococcal infection is pharmacological and not surgical. Antibiotic treatment should be accompanied by repeat drainage arthrocentesis. Open surgical drainage is not mandatory for gonococcal hip infection,^{2 7} as it is for other pathogens affecting the hip.

Opportunistic joint infections are well described in the HIV positive patient, as are

osteomyelitis, pyomyositis, viral arthritis, endocarditis, reactive arthritis, and, presumably, non-infectious diseases, such as Reiter's syndrome, psoriatic arthritis, arthralgia syndromes, Sjögren's syndrome, polymyositis, painful peripheral neuropathies, vasculitis, and malignancy associated arthritis.^{15 16} These conditions may predate the recognition of HIV positivity, so that their appearance warrants HIV testing.

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