Septic Hip Joint Arthritis in an Intravenous Drug Abuser: A Case Report

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In the past decade, the risk of septic arthritis has increased in developing countries, especially in patients with HIV infection and intravenous drug abuse. Heroin abuse has become a serious problem in Taiwan. We report a 37-year-old man, an intravenous drug abuser, who underwent open irrigation and debridement for septic arthritis of the right hip joint. The patient recovered satisfactorily after three weeks of intravenous antibiotic therapy.

Key Words: hip joint, IV drug abuser, septic arthritis

Introduction

Once peripheral veins have sclerosed, intravenous drug abusers (IVDA) resort to groin injections for access to the femoral vein. We are seeing an increasing number of complications in IVDA who inject into the groin. These complications are secondary to the direct toxic effect of the drug, non-sterile injections and preparation techniques, and the use of unusual injection sites. These factors may affect the soft tissues, skeleton and vascular system. Skeletal infections in IVDA may be secondary to local spread of soft tissue infection, but they are frequently due to hematogenous seeding. Common sites of hematogenous septic arthritis in the pelvis include the sacroiliac joints, the symphysis pubis and the hip joint.

Case Report

A 37-year-old left-handed man was sent to our ER with gradual onset of right hip pain and difficulty in walking for one week. He had no fever, chills or sweating. He denied trauma and a previous history of hip pain. Examination revealed swelling, tenderness, and local heat over the right hip. There was limited range of motion in the right hip joint secondary to pain. The patient had a 10-year history of intravenous heroin abuse. He stated that recently he had injected the right femoral vein in the groin with non-sterile disposable syringes and needles several times per week because of difficulty in accessing good veins in the upper extremities. Laboratory examination showed white blood cell (WBC) counts 14,100 cells/mL, C-reactive protein (CRP) 6,390 mg/dl and erythrocyte sedimentation rate (ESR) 68 mm/hr. The patient’s human immunodeficiency virus (HIV) test was negative on enzyme linked immunosorbent assay (ELISA) on the day of admission. Radiographs of the pelvis and right hip joint were normal (Fig. 1). Computed tomography (CT) showed a periarticular fluid collection around the right hip joint (Fig. 2). Aspiration of the joint...
fluid (through an anterior approach) yielded 25 mL of purulent fluid. Irrigation and debridement of the hip joint was also performed through the anterior (Smith-Petersen) approach. Synovial fluid analysis revealed WBC counts 60,800/mL, glucose 17mg/dl and protein 5600mg/dl. Blood cultures showed no growth. A Gram stain of the synovial fluid revealed no organisms. Cultures from the joint aspiration grew *Staphylococcus aureus* that was sensitive to oxacillin. The patient underwent treatment with intravenous oxacillin sodium 2 gm four times a day for three weeks. The patient’s WBC, CRP and ESR decreased to 6600 cells/mL, 2.550 mg/dl and 46 mm/hr respectively on the 3rd postoperative day. Three weeks after starting antibiotic treatment, all symptoms had resolved. The patient was able to walk and resumed a normal gait. After a full recovery he was discharged home and he has not been followed up since then.

**Discussion**

The larger caliber of veins in the groin and easy accessibility explains the frequent use of these veins for intravenous drug injection by drug abusers. The site of injection and site of joint involvement seem to be related. More frequent left-sided involvement can be correlated to the dominance of right-handedness in the general population. Most drug abusers self-administer drugs into the contralateral side(4). Our patient was left-handed and used his right groin for venous access. This may be the reason that he had sustained infectious arthritis of the right hip joint.

The use of shared needles, non-sterile syringes, and saliva or water from a toilet or sink for dissolving drugs are also implicated in septic arthritis in drug users. Finally, it is also possible that defects in humoral or cell-mediated immunity related to the use of heroin or its adulterants could be implicated in the process of septic arthritis(5).

Intravenous drug abusers are subject to unusual varieties of infectious organisms, including those associated with immunodeficiency states(6). Earlier studies have documented the high prevalence of gram-negative infections in the bones and joints in intravenous drug abusers. *Pseudomonas aeruginosa* accounts for more than 80% of such infections;
other gram-negative organisms include Serratia, Klebsiella, and Enterobacter. One of the latest studies described a significant shift in the etiology from gram-negative to gram-positive organisms; Staphylococci and Streptococci account for 82% of bone and joint infections\(^4\).

In Spanish reports, Staphylococcus aureus is the predominant agent\(^7\-10\). This organism is usually found on the skin and introduced into veins with the needle by drug addicts, causing septic emboli in a variety of organs such as the endocardium, joints and bones.

In Spain, 80% of all HIV positive patients are IVDAs\(^1\,9\) and in Asia, the majority of HIV infected patients are also IVDAs\(^11\). In 1993, Munoz et al reported that the number of osteoarticular infections is similar in Spanish HIV negative and positive IVDAs. This suggests that HIV may not play a part in the development of osteoarticular infections\(^12\). The HIV test was negative in our patient.

Early diagnosis of septic hip joint arthritis depends mainly on clinical presentation and radiographic demonstration of hip joint involvement. However, plain radiographs are of minimal use in identifying this entity. CT scans and magnetic resonance image (MRI) was somewhat more useful. In our patient, CT seemed to be the most cost effective and reliable diagnostic tool.

The treatment consists of aggressive intravenous antibiotic therapy based on culture and sensitivity. Open drainage is performed when repeated aspiration fails to resolve the problem and in cases resistant to medical treatment. In conclusion, a high index of suspicion of septic arthritis in drug addicts complaining of articular symptoms will lead to early diagnosis of this entity.

References

靜脈內注射藥物濫用者併發細菌性髕關節炎：
病例報告

吳俊仁 1 蔡文福 1 謝宗宏 1
瞿裕昌 1 釋高上 2,3

海洛因濫用近幾年來成為台灣的難題。注射併發症常發生在靜脈內注射藥物者，但髕關節侵犯較少見。在國外文獻中，只有少於10例靜脈內注射藥物者併發細菌性髕關節炎的報告；在國內文獻中則完全沒有報告。我們報告一位37歲男性靜脈內注射海洛因濫用者，因右髕細菌性關節炎，接受右髕關節開放性沖洗及擴創手術，這位病患在接受六週靜脈內抗生素治療後，復原良好。

關鍵詞：髕關節靜脈內注射藥物濫用者，細菌性髕關節炎