



Case report

Gonococcal septic arthritis of the sternoclavicular joint: A case report

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ABSTRACT

Gonococcal septic arthritis is a rare condition that most frequently involves the interphalangeal joints of the hands, wrists, knees, and ankles. We report a case of monoarticular gonococcal septic arthritis of the sternoclavicular joint in the absence of pharyngeal or genitourinary symptoms in a patient with a history of arthropathy and intravenous drug use. This case report aims to describe the clinical features and management of gonococcal arthritis.

Introduction

Septic arthritis results from the hematogenous spread or direct inoculation of microorganisms into joint spaces. Most commonly, these organisms are Gram-positive bacteria, specifically *Staphylococcus aureus* and *Streptococcus pyogenes* [1]. Less than 3% of cases are caused by *Neisseria gonorrhoeae*, a Gram-negative diplococcus responsible for approximately half of sexually transmitted infections [2].

Disseminated gonococcal infection can present with several clinical manifestations including polyarthralgias, skin lesions, and tenosynovitis or an isolated monoarticular septic arthritis. Gonococcal septic arthritis most frequently involves the interphalangeal joints of the hands, wrists, knees, and ankles. Common risk factors include female sex, pregnancy, multiple sexual partners, low socioeconomic status, intravenous drug use, immunodeficiency, and asymptomatic mucosal infection [1,2]. Additionally, patients with underlying joint disease or prosthetic joints are at increased risk.

The diagnosis is supported by a combination of clinical presentation, leukocytosis, elevated inflammatory markers, imaging, and consistent synovial fluid characteristics. Treatment includes antibiotic therapy with third generation cephalosporins or penicillins. Surgical debridement or arthrocentesis are not routinely required [2].

Case presentation

A 62-year-old male with a past medical history of ankylosing spondylitis, resolved hepatitis C virus (HCV) infection, and *Streptococcus pyogenes* bacteremia complicated by septic arthritis of the right knee and right sternoclavicular joint one year prior presented with one week of

tactile fevers and right upper chest wall pain unrelieved by over-the-counter analgesics. Social history included alcohol use disorder (in remission), intravenous drug use, housing insecurity, incarceration, and recent unprotected anoreceptive intercourse with one new male partner.

Physical exam was notable for tenderness to palpation and a fluctuant mass over the right sternoclavicular joint with surrounding erythema and warmth. No rashes, lesions, or puncture wounds were noted. Laboratory studies on admission included white blood cell count (WBC) of $10.5 \times 10^9/L$, platelets of $745 \times 10^9/L$, erythrocyte sedimentation rate of 31 mm/hr, and C-reactive protein of 85 mg/L. Blood cultures were negative. HCV antibody was positive with undetectable viral load, consistent with history of prior infection. Serologies for syphilis, HIV, and tuberculosis were negative. Computed tomography of the neck demonstrated an abnormal fluid collection and soft tissue thickening arising from the right sternoclavicular joint with possible underlying bone erosion (Fig. 1). Transthoracic echocardiogram was normal. At this time, the differential included septic arthritis, osteomyelitis, and inflammatory arthritis.

Aspiration of the synovial fluid was obtained and described as cloudy with 12,490 WBC/ μL and 90% segmented neutrophils. Culture grew pan-sensitive *Neisseria gonorrhoeae*. Pharyngeal culture was also positive for *N. gonorrhoeae* with negative urethral and rectal cultures. The patient was determined not to be a candidate for outpatient parenteral antimicrobial therapy due to his history of intravenous drug use and unstable housing. He was treated with intravenous ceftriaxone for six weeks with clinical and radiographic improvement.

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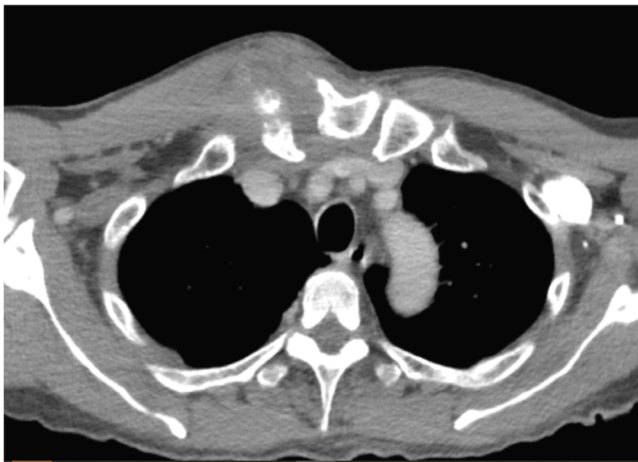


Fig. 1. Computed tomography of the neck in the axial plane demonstrating right sternoclavicular fluid collection and soft tissue swelling.

Discussion

We report a case of monoarticular gonococcal septic arthritis at an uncommon location in an immunocompetent patient without pharyngeal or genitourinary symptoms. A PubMed search of case reports over the past 30 years with the query “Gonococcal arthritis” yielded 105 results, however only six case reports had sternoclavicular involvement [3–8]. These cases occurred in individuals with pregnancy, HIV, or complement deficiency (Table 1). The patient’s history of spondyloarthropathy and recent polyarticular septic arthritis with sternoclavicular involvement may have contributed to joint space inflammation and destruction that increased the susceptibility of the joint to gonococcal infection. Clinicians should maintain a high index of suspicion for this uncommon condition especially in high-risk populations with infectious symptoms and arthralgias, even in the absence of pharyngeal or genitourinary symptoms, to ensure early diagnosis and prompt treatment.

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Ethical approval

Not applicable.

Consent

Consent to publish was not obtained for this case report as it does not

Table 1

Reported cases of gonococcal septic arthritis of the sternoclavicular joint.

Case Number	Source, year	Age, Sex	Relevant Medical History
1	Strongin et al., 1991 [3]	27 y/o M	HIV positive
2	Mesa et al., 1998 [4]	15 y/o F	Pregnancy
3	O’Leary et al., 2006 [5]	23 y/o F	Pregnancy
4	Guillot et al., 2012 [6]	47 y/o M	Previously healthy
5	El Mezouar et al., 2014 [7]	20 y/o F	Pregnancy
6	Benavent Núñez et al., 2019 [8]	64 y/o F	C2 deficiency

contain any personal identifiers.

CRedit authorship contribution statement

Nazar Akhverdyan: Conceptualization, Investigation, Writing – original draft, Writing – review & editing. **Sameer Andani:** Investigation, Writing – review & editing. **Mirian Vanesa Garcia Rivera:** Supervision, Writing – review & editing. **Margaret Fitzpatrick:** Supervision, Writing – review & editing.

Declaration of Competing Interest

The authors report no conflicts of interest.

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None.

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