CASE REPORT

Disseminated gonococcal infection: A case report

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ABSTRACT

Disseminated Gonococcal Infection (DGI), a rare complication associated with *neisseria gonorrhoeae*, is found in 0.5 to 3 percent of all reported gonorrhea infections. The most common symptom associated with the disease is arthritis.

We herein report a case of a 21 year old African American female with past medical history of SLE on immunosuppressive agents presenting with papulo-pustular skin rashes in different stages of progression throughout the patient's body and joint pain. The female patient reported having engaged in unprotected sex two months prior to seeking treatment.

Urine and endocervical gen probe tests tested positive for gonnorhea which lead to a confirmed diagnosis for DGI.

INTRODUCTION

In the 21st century, disseminated Gonococcal infection (DGI) has become a rare complication in patients infected with Neisseria Gonorrhoeae bacterium. The incidence of disseminated infections with complications is 0.5 to 3 percent of all cases. Usually, the natural history of untreated Gonorrhea progresses to a spontaneous resolution after weeks or months of the infection.[1,3]

The most commonly recognized predisposing factors for DGI are recent menstruation, pregnancy, immediate post partum state, congenital or acquired complement deficiencies, HIV, and Systemic Lupus Erythematosus (SLE).[3,5] DGI is more commonly observed in females and in the younger patients.[4] High index of suspicion is required for diagnosis. The most common symptom in patients with DGI is arthritis. A triad of tenosynovitis, dermatitis and polyarthalgia or purulent arthritis which is monoarticular or asymmetrical oligoarticular has been noted in patients with DGI.[1,3,4]

Diagnosis of DGI is made by the patient's clinical history, physical examination, and laboratory tests. Synovial fluid analysis, blood cultures and endocervical smear to isolate Neisseria Gonorrhoeae bacterium are employed for diagnoses. DGI cases are managed by using a parenterally administered 3rd generation cephalosporin with subsequent stepping down to an equivalent oral antibiotic. Patients with purulent arthritis usually require a prolonged course of antibiotics (i.e. 14 days or more). Additionally, all DGI cases should also receive 7 days of concurrent treatment for Chlamydia. Partner treatment is also recommended.[3,5]

CASE REPORT

A 21 year old African American female with past medical history of SLE since 2004 presented with

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pustular erythematous rash. The patient was on immunosuppressant agents (Cellcept and Plaquenil) since 2004. The rash developed over the past 2 weeks. Also, the patient complained of pain in the left elbow and right knee. The pustular erythematous rash originated on the back and spread to the arms and legs; the palms and soles were not involved. The joint pain started in the left elbow and started spreading to the right knee and right ankle. The pain was accompanied by swelling and erythema with decreased ability to bear weight on the right leg. The patient also reported generalized malaise and fatigue for the past 3 weeks. On physical examination of the patient, her vitals were: blood pressure 124/72, heart rate 95, temperature 98.3, respiratory rate 18, O2 sats 99% on ambient air. The skin examination revealed papulo-pustular rashes in different stages of progression in the neck, upper back, dorsum of hands, legs and feet (Fig. 1 A, B, C, D). Head and neck examination of the patient revealed frontal alopecia. Upon joint examination the left elbow was tender to palpation, there was no effusion, and the joint had full range of motion. The right knee had a moderate amount of effusion, erthyema, swelling, and had a full range of motion. The right ankle was very tender, erythematous, and had a decreased range of motion.

Keeping in view the patient's state of immunosuppresion, the differential diagnoses of this patient included lupus flare versus septic arthritis versus viral arthritis. Subsequently, the detailed clinical history and examinations revealed that the patient was having yellowish vaginal discharges for the past one month. Also, her last unprotected intercourse occurred 2 months ago. Therefore, the possibility of a DGI was also included in the list of differential diagnoses. On admission, an arthrocentesis of the right knee joint was performed which showed a white blood cell count of 15840 (92% Polymorphonuclear cells). Gram stain and the culture of the joint fluid were found to be negative. The results of Complement level analyses

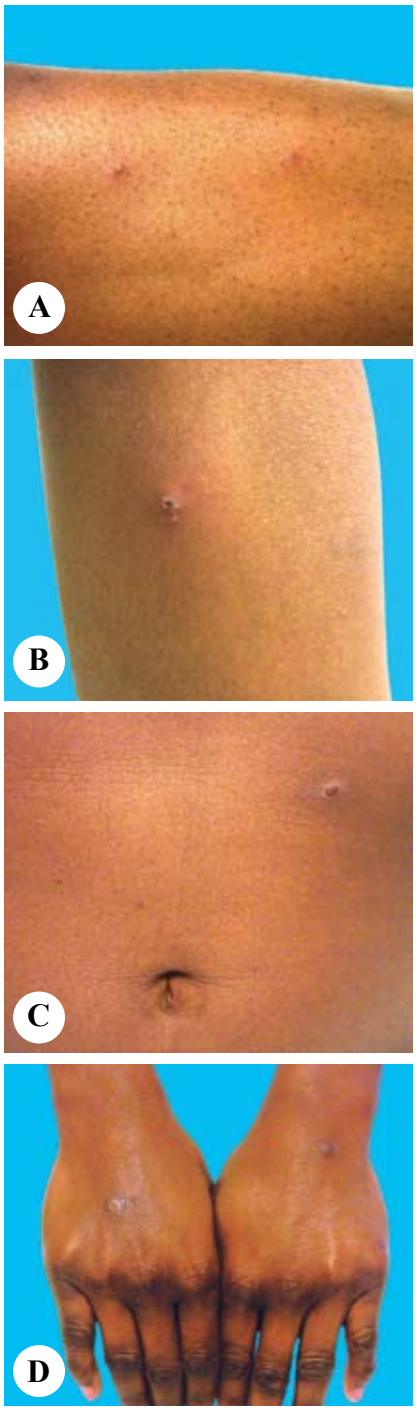

Fig. 1 A, B, C, D. Papulopustular lesions of disseminated gonococcal infection (DGI) in different stages of progression.

and other antibody titres were not consistent with a SLE flare. However, the urine and endocervical gen probe tests were positive for gonnorhea, and a diagnosis of DGI was confirmed. The skin pustule cultures were found to be sterile.

The patient was started on Ceftriaxone intravenously along with Doxycycline orally for the treatment of DGI. The immunosuppressive agents were held temporarily due to the presence of a systemic infection. Over the course of a 3 day period, swelling and pain in the joints resolved. Subsequently, the patient was able to bear weight, and on day 4 she was discharged from the hospital. On discharge the patient was prescribed oral equivalent antibiotics to complete a 7 day course of antibiotics.

DISCUSSION

Independent of the risks associated with the use of corticosteroids and immunosuppressive agents, the risk of serious infections in patients with systemic lupus erythematosus is increased because of several reasons including inherited or acquired deficiencies of complement components, defective opsonization and bacteriolysis and abnormalities of the reticuloendothelial system.[6-8] Numerous case reports have highlighted the problem of disseminated Neisseria infections in SLE commonly manifesting as an (arthritis-dermatitis) syndrome with tenosynovitis, oligoarthritis and necrotic skin pustules like in our case.[9-11]

Diagnosis of DGI is made by the patient's clinical history, physical examination, and laboratory tests. Synovial fluid analysis, blood cultures and endo-cervical smear to isolate Neisseria Gonorrhoea bacterium are employed for diagnoses. Yield is highest if the culture is obtained from the primary infection site. Findings are positive in more than 80% of cases. When obtained from the primary site of infection, 90% of results are positive in cervical samples, 50%-75% in male urethral samples, 20% in pharyngeal samples, and 15% in rectal samples.[6-9]

Despite major advances in antibiotic therapy, infection remains one of the leading causes of morbidity and mortality in SLE. Patients with SLE are especially prone to infections with certain organisms including neisseria, salmonella and to a lesser extent streptococcus pneumonia.[9-11] Successful therapy for Neisseria infections is most dependent on a high index of clinical suspicion in the susceptible host, and prompt empiric therapy pending culture confirmation.Therapy should never be delayed pending cultures that will yield 25% positive blood cultures for DGI, 50% positive synovial cultures from late gonococcal septic joints, but 75% positive cultures from genital sites.[12]

According to 2006 CDC guidelines, the initial treatment of choice for gonococcal arthritis or disseminated gonococcal infection (DGI) in adults is ceftriaxone 1 g IM or IV every 24 hours with subsequent stepping down to an equivalent oral antibiotic. Patients with purulent arthritis usually require a prolonged course of antibiotics (i.e. 14 days or more). Additionally, all DGI cases should also receive 7 days of concurrent treatment for Chlamydia. Partner treatment is also recommended.[13-14]

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