

A Case of Gonococcal Urethritis Coexisting with Genital Warts in a Human Immunodeficiency Virus-Negative Man

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Abstract

Gonorrhoea is an important sexually transmitted infection in both males and females which could consequently lead to different complications affecting both sexes. Despite availability of antimicrobials to treat the disease, transmission of the agent *Neisseria gonorrhoeae* (NG) is still prevalent. The ability of *Neisseria gonorrhoeae* to rapidly develop resistance to routinely used antimicrobials has made it a global public health challenge. We present a 26 year old single, male, professional who presented to our facility with a five weeks history of urethral discharge and painful micturition. He was initially managed at a private hospital with ciprofloxacin for 20 days with no improvement in symptoms. The patient then presented at our facility where he was diagnosed and managed for *Neisseria gonorrhoeae* urethritis after laboratory investigations. Susceptibility tests revealed penicillin and ciprofloxacin resistant NG. However, molecular characterization was not done as the stored isolate could not be reactivated for further analysis. We advocate for a review of the syndromic management of STIs in the country and a national surveillance on NG susceptibility profile. There is an urgent need to upgrade laboratory facilities to perform both cultural and molecular identification for sexually transmitted infections.

Keywords: Ciprofloxacin resistance, gonococcal urethritis, Nigeria, Zaria

INTRODUCTION

Gonorrhoea is noted as one of the common sexually transmitted diseases (STDs) occurring in both sexes worldwide. *Neisseria gonorrhoeae* (NG), the etiological agent, infects only humans in nature as no natural infection has been reported in animals. The occurrence of asymptomatic carriage in women makes them a reservoir, serving to perpetuate infection among their male contacts.^[1] The predisposing factors for gonorrhoeae infection include sexual contact with an infected individual or someone from an endemic area, men having sex with men, previous sexually transmitted infections (STIs), or human immunodeficiency virus (HIV), indulging in unprotected sex and having multiple sexual partners.^[2]

Gonococcal infection is a major public health challenge globally in spite of the availability of antimicrobials for its treatment. This is mainly because of the complications associated with the disease such as pelvic inflammatory disease and ectopic pregnancy in females and infertility in both sexes. Furthermore, gonorrhoea is one of the STIs that potentiates infection and transmission of HIV.^[3] These challenges are

further worsened by the propensity of NG to rapidly develop resistance to multiple antimicrobial agents. Resistance to commonly used antimicrobials such as sulfonamides, penicillins, tetracyclines, and quinolones has been reported.^[2] Globally, there have been increasing reports of gonococcal resistance in Brazil, France, Europe, Asia, and Africa.^[4] In Nigeria, as far back as 1979, gonococcal resistance to penicillin was reported in Ibadan which is in the southwestern part of the country, and 6 years later, penicillinase-producing NG and beta-lactamase-producing Gonococci were isolated in Zaria, Kaduna state, in the northwestern part of the country where the index case was identified.^[5]

NG is a fastidious organism difficult to culture and isolate in routine laboratories. Factors which pose challenges to isolation

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How to cite this article: Jimoh O, Ejembi J, Aliyu S, Abdulrasul I, Mba TC, Olayinka AT. A case of gonococcal urethritis coexisting with genital warts in a human immunodeficiency virus-negative man. *Ann Trop Pathol* 2018;9:176-9.

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DOI:
10.4103/atp.atp_25_18

of the organism are rife in Nigeria and include the common practice of self-prescription, drug abuse, and inadequate laboratory capacity. Other factors include the stigma associated with STDs which result in delay in seeking treatment or seeking treatment at patent medicine stores or medicine vendors and other unorthodox sites. The WHO advocates the syndromic management of STDs in 3rd world countries with inadequate laboratory capacity. This involves the treatment of STDs based on the syndromes they cause without laboratory diagnosis to enable institution of antimicrobial therapy at first contact with clients to break the chain of infection. Nigeria falls in this category of countries where laboratory facilities are inadequate, especially in the isolation of fastidious organisms. Due to the nonavailability of diagnostic tests that provide susceptibility profile results at the time of treatment, clinicians resort to empiric treatment for gonorrhoea.^[6] With the increasing trend of antimicrobial resistance in NG isolates globally where resistance to cephalosporins and quinolones has been reported, the situation in Nigeria is uncertain as there is paucity of current literature on the prevalence and susceptibility profile of NG in the country.

CASE REPORT

A 26-year-old single male professional presented to our facility with a 5-week history of pus-like urethral discharge and painful micturition. The discharge was copious, grayish white, nonbloody, and had persisted since onset despite antibiotic therapy. There was no history of fever or ulcer in the penile area and no joint pain or joint swelling. There was history of malaise and occasional easy fatigability.

The patient had regular, unprotected, sexual intercourse with multiple^[4] female partners in the last 12 months before presentation. The last sexual contact occurred about 7 days before onset of the index clinical presentations. Sexual history had been only vaginal insertive and none with commercial sex workers. The patient had never had similar symptoms in the past.

On account of the above-mentioned symptoms, he consulted a private medical practitioner who prescribed ciprofloxacin, cotrimoxazole, and mixture of potassium citrate for 10 days after a private laboratory had isolated *Escherichia coli* from the urine specimens. Symptoms persisted despite treatment extension for additional 10 days by the patient due to lack of clinical improvement. He then presented at the accident and emergency unit of our facility from where he was referred to the Special Treatment Clinic (STC).

Physical examination revealed an anxious, well-preserved young man, afebrile, with no palpable peripheral lymphadenopathy. Pulse rate was 72 beats/min, regular and normal volume. His blood pressure was 120/80 mmHg, and heart sounds were S1 and S2 only. Musculoskeletal examination was unremarkable. Perineal examination showed a glans penis covered with soaked tissue paper and penile orifice discharging gray-white pus [Figure 1].



Figure 1: Purulent urethral discharge

Warts measuring 5–6 mm were seen around the scrotal and perineal area [Figure 2]. A diagnosis of poorly treated gonococcal urethritis with genital warts was made. The patient was counseled, and urethral discharge, rectal and pharyngeal swabs, and blood samples were collected to test for NG, syphilis [rapid plasma reagin, *Treponema pallidum* hemagglutination assay, and human immune deficiency virus antibody screening test (Determine)].

The urethral discharge and rectal and pharyngeal swabs were inoculated on chocolate agar and smears made for direct gram staining.

The samples were processed using standard microbiology techniques for culture and sensitivity testing.^[7] Primary Gram staining showed Gram-negative diplococci with numerous pus cells [Figure 3]. Cultivation on chocolate agar showed tiny, shiny grayish white, and colonies which were oxidase and catalase. The organism ferments glucose but not maltose. Antimicrobial susceptibility testing using modified Kirby–Bauer technique and interpreted by CLSI performance standard 2013^[8] showed that the isolate was sensitive to ceftriaxone and cefoxitin while resistant to penicillin and ciprofloxacin.

The isolate was stored in Tryptic Soy Broth with glycerol at –20°C awaiting molecular identification using 16SrRNA. However, further analysis could not be done as attempts to reactivate the organism were not fruitful. Tests done for HIV and syphilis were negative. Furthermore, the pharyngeal and rectal swabs were unremarkable.

The patient was treated with IM ceftriaxone 250 mg and azithromycin 1 gram start. The genital warts were treated with topical podophyllin. All symptoms including the genital warts resolved within 5 days of treatment with the urethral discharge and dysuria disappearing within just 2 days. He was also counseled on behavioral modification and the need for contact tracing. The patient agreed to inform his sexual partners but declined bringing them to our facility for treatment despite being enlightened on consequences of gonorrhoea in the partners and the community. The patient communicated

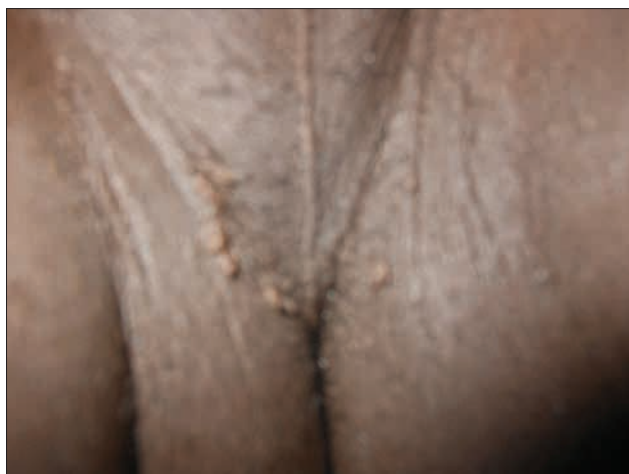


Figure 2: Genital wart

his clinical improvement through phone call but failed to keep subsequent clinic appointments. Verbal consent was obtained from the patient for this case report.

DISCUSSION

NG is a fastidious organism which was last isolated in our facility more than 10 years ago, even though we have the capacity for its isolation and antimicrobial susceptibility testing. The likely reasons why NG has not been isolated for a while could be due to the fact that most of patients practice self-medication, present at primary health-care centers or private clinics first, where they are treated using syndromic management of STIs. Where laboratory support is available, specimens are not taken appropriately or early enough as demonstrated at the private facility. Furthermore, the nonuse or unavailability of transport media when specimens are taken leads to poor recovery of the organism during culture.

The risk factors that predisposed the index patient to NG infection include regular unprotected sexual intercourse, having multiple sexual partners and being single. Factors which have been previously documented.^[2]

Isolation of NG was made possible due to prompt referral to the STC which caters for STIs and other unusual tropical infectious diseases thereby facilitating early diagnosis and prompt treatment.

Occurrence of ciprofloxacin and penicillin resistance observed in this our index case further corroborate the observations of some authors that the two drugs which were formerly effective against NG are no longer efficacious.^[9,10] Resistance rates as high as 42% to 52% of NG to ciprofloxacin have been documented following antimicrobial surveys and that of penicillins and tetracyclines varied between 12% and 16%, though in other countries.^[11,12] There is a paucity of current local literature on the susceptibility profile of NG to ciprofloxacin in Nigeria.

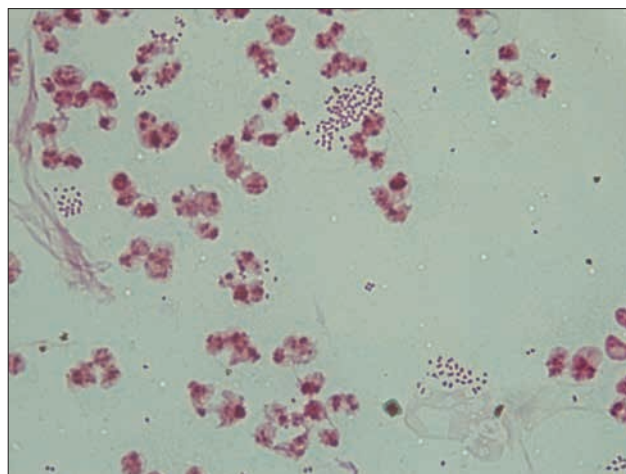


Figure 3: Gram-stain of the smear

Due to stigma associated with STIs in Nigeria, majority of those infected would rather practice self-medication, than seeking proper medical treatment from reputable health-care facilities as restrictions to the indiscriminate sales of antimicrobials are not being implemented. This patient was poorly managed in the initial health-care center, and he visited because of inadequate laboratory services and lack of updates of the first-line drugs indicated in the syndromic management of STIs. This, however, is a challenge as initially discussed. Contact tracing was a challenge in this patient possibly because of fear of stigmatization.

CONCLUSION

This case documents the existence of ciprofloxacin-resistant NG in the country. There is need for national studies and surveillance to determine the prevalence and susceptibility pattern of NG. Policies on compulsory testing and treatment of all sexual contacts of infected persons should be developed and instituted such that the disease and its attendant complications can be effectively controlled. This report should inform the review of both our syndromic management of STIs and Standard Treatment Guidelines. The role of the laboratory in stemming the tide of NG infection in our environment cannot be overemphasized. Hence, we advocate for the availability of diagnostic facilities at all levels of care to improve diagnostic capacity so as to ensure that previous gains made in reducing the prevalence of HIV, and other STIs are not reversed. Studies to explore factors responsible for the practice of unprotected sex in young, educated people should be conducted.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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