

# Gonorrhoea

Geetha Raveendran, Ramani Bai Joseph Theodore, Ragi Rajeev Geetha Kumari

Department of Microbiology Medical College, Government Medical College, Thiruvananthapuram, Kerala, India

## ABSTRACT

Gonorrhoea is one of the commonest sexually transmitted infections (STI) in human beings. Prompt and adequate antibiotic treatment can cure this condition, but the rapid identification of the organism is interfered by the fastidious nature of the bacteria, presence of mixed infections, and normal flora of the genital tract. Here, we report a case of gonorrhoea which was culture positive, treated promptly, and cured.

**Key words:** *Neisseria gonorrhoeae*, sexually transmitted infections, urethral discharge

## INTRODUCTION

A 19-year-old male lorry cleaner was admitted in the dermatology ward of Medical College, Thiruvananthapuram with complaints of painful swelling of inguinal regions, urethral discharge, and dysuria of 5 days duration. The complaints started as mild itching on both inguinal regions. He also noted discrete painful swellings in the inguinal regions. Two days later, he had fever, dysuria, and pus discharge from the penis. He was treated for 2 days with oral Norfloxacin from a local hospital, but had no relief. Hence, he was referred here.

The patient had an unprotected homosexual intercourse 2 days before the onset of symptoms. He had multiple sexual exposures — both homosexual and bisexual for the past 2 years.

On examination, purulent discharge from the urethra with multiple tender discrete inguinal lymphadenopathy was seen. Other systems were normal.

## INVESTIGATIONS

Hemoglobin: 15 gm%

Total WBC count: 16,000/mm<sup>3</sup>

Differential count: Polymorphs 66%, lymphocytes 26%, eosinophils 8%

S. bilirubin: 0.9 gram/100ml

Total protein: 6.7 gram/100ml, S. albumin 3.8 gram/100ml

SGOT (Serum Glutamic oxaloacetic transaminase): 25 IU/L,

SGPT (Serum Glutamic pyruvic transaminase): 15 IU/L

VDRL (Venereal Disease Research Laboratory) test, TPHA (Treponema pallidum Haemagglutination) test, and HIV (Human Immunodeficiency Virus) detection test: Negative

Early morning urethral discharge was collected in Amies transport medium and sent to our lab. Gram stain showed plenty of pus cells with gram-negative diplococci, both intracellularly and extracellularly [Figure 1]. After overnight incubation with 5% CO<sub>2</sub>, Chocolate agar showed moderate growth of small, round, translucent convex colonies. Gram smear of the colony showed gram-negative diplococci which were oxidase and catalase positive. In the serum sugars, only glucose was utilized producing acid without gas production.

Direct sensitivity was tested on Chocolate agar and the strain was sensitive to Penicillin, Ceftriaxone, Ciprofloxacin, and Cotrimoxazole. His rectal swab culture was negative for gonococci. The patient was treated with injection Ceftriaxone 1 gm intramuscularly once daily and oral Doxycycline 100 mg twice daily for 10 days.<sup>[1]</sup> The patient became asymptomatic and was discharged. He came for review after 2 weeks and was completely symptom free.

His sexual partner was traced and advised to take treatment. But he was reluctant for treatment.

**Address for correspondence:** Dr. Geetha Raveendran,  
E-mail: drgeetha.sb@gmail.com

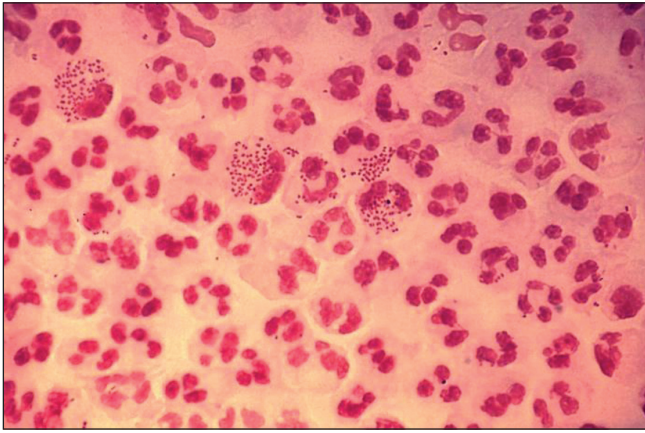
### Access this article online

#### Quick Response Code:



Website:  
www.jacmjournals.org

DOI:  
10.4103/0972-1282.116098



**Figure 1:** Gram smear of urethral discharge showing pus cells and gram-negative diplococci

## DISCUSSION

*Neisseria gonorrhoea* is an obligate human pathogen and one of the major causes of sexually transmitted infections (STI).<sup>[2]</sup>

Microscopy is used for the presumptive diagnosis of gonorrhoea; the presence of intracellular gram-negative diplococci in urethral smears is considered diagnostic in symptomatic men and has a sensitivity of >95%. But in women and asymptomatic men, the sensitivity is between 30 and 50% due to the lower numbers of bacteria which are below the detection limit.

Isolation of the bacteria is still considered as the confirmatory test for diagnosis. The sensitivity of culture is high (80-100%), but is dependent on a good specimen and isolation procedure. The correlation between smear and culture for urethral specimens from symptomatic men should be more than 95%.

Preliminary identification of any resulting colonies as oxidase-positive gram-negative diplococci is presumptively identified as *Neisseria* species. *N. gonorrhoea* was identified by its ability to produce acid from glucose, but not from other carbohydrates such as lactose, sucrose, and maltose.

Gonococcal infection is complicated by the high incidence of co-infection with other STI such as Chlamydiae.<sup>[3]</sup> As with other STI, effective control of gonorrhoea can be achieved with barrier protection, diagnosis, contact tracing, treatment, and education.

No vaccine exists for the prevention of gonococcal infection. The incidence of STI with gonococci is rare nowadays due to the widespread use of antibiotics and high social awareness among people.

Advanced techniques like antigen detection by immunoassay, Nucleic Acid Amplification tests (NAATs), etc., have achieved a tremendous progress in the rapid diagnosis of gonorrhoea in major centers.<sup>[4]</sup> But in many developing countries, conventional tests like microscopy and culture have been used widely.

## ACKNOWLEDGEMENT

The authors are thankful to the Head of Department and postgraduates of the department of Dermatology and Venereology, Govt. Medical College, Thiruvananthapuram for their cooperation in this study.

## REFERENCES

1. CDC MMWR 2010 treatment guidelines for sexually transmitted disease. *Morb Mortal Wkly Rep* 2010;59:1-109.
2. Bignell C, Ison CA, Jungmann E. Gonorrhoea. *Sex Transm Infect* 2006;82:iv6-9.
3. Van Dyck E, Ieven M, Pattyn S, Van Damme L, Laga M. Chlamydia trachomatis and Neisseria gonorrhoeae by enzyme immunoassay, culture and three nucleic acid amplification tests. *J Clin Microbiol* 2001;39:1751-6.
4. Vickerman P, Peeling RW, Watts C, Mabey D. Detection of gonococcal infection: Pros and cons of a rapid test. *Mol Diagn* 2005;9:175-9.

**How to cite this article:** Raveendran G, Theodore RBJ, Kumari RRG. Gonorrhoea. *J Acad Clin Microbiol* 2013;15:28-9.

**Source of Support:** Nil. **Conflict of Interest:** None declared.