

A Cluster of Disseminated Gonococcal Infections in a Non-Immunocompromised Veteran Population

Nicole C. Vissichelli¹, MD, Emily M. Hill², PhD, MT(ASCP), Linda Anderson², Angela Eckert², Jane Cecil², MD, Leroy B. Vaughan², MD, J. Daniel Markley^{1,2}, DO, MPH Matthew M. Hitchcock², MD, MPH
Virginia Commonwealth University Health System¹, Hunter Holmes McGuire Veterans Affairs Medical Center²

INTRODUCTION

- Disseminated Gonococcal Infection (DGI) is an uncommon manifestation of *Neisseria gonorrhoeae*.
- It is estimated to occur in 0.5-3% cases, and previous studies suggest a decreasing incidence over time, thought to be due to serotype replacement.
- Following no recent cases of DGI at RICVAMC, 3 cases were identified within a 4-month period in 2019.

METHODS

- Study Type: Case Series
- Study Duration: Calendar year 2019
- Setting: 399-bed tertiary care VAMC in Richmond, VA
- This study was approved by the IRB
- Patients identified with DGI based on clinical presentation and positive cultures for *N. gonorrhoeae* from sterile sites were included.
- Total case count of gonorrhea in 2019 was obtained from infection control reporting to public health authorities.

RESULTS

Table 1: Clinical History and Laboratory Results for Patients with DGI

Factor	Patient 1	Patient 2	Patient 3
Age (years)	62	46	69
Sex	Male	Male	Male
Ethnicity	African-American	African-American	African-American
Co-Morbidities	Hypertension, Henoch-Schoenlein Purpura	Type 2 diabetes	Multiple sclerosis
Joint Involvement	Yes	Yes	Yes
Skin Manifestations	No	Yes	Yes
HIV Status	Negative	Negative	Negative
Site of Positive <i>N. gonorrhoeae</i> Culture	Synovial fluid	Synovial fluid	Blood
Orogenital NAAT Results	Negative	Positive (pharynx)	Negative
WBC Count (10 ³ /μL)	14.3	24.8	24.2
ESR (mm/hr)	102	130	-
CRP (mg/dL)	18.9	>19	-
Synovial Fluid WBC Count (10 ³ /μL)	273,440	95,400	48,700

HIV, human immunodeficiency virus; NAAT, nucleic acid amplification test; WBC, white blood cell; ESR, erythrocyte sedimentation rate; CRP, C-reactive protein

RESULTS

- Clinical findings from the patients with DGI are shown in Table 1. All patients reported female sexual partners.
- No concomitant sexually transmitted infections were detected.
- All *N. gonorrhoeae* isolates were negative for beta-lactamase. The single blood culture isolate was sent for formal antibiotic sensitivity testing due to the observed growth patterns (Fig. 1), and fluoroquinolone resistance was confirmed.
- One patient underwent surgical washout of the involved joint and the others were managed non-operatively.
- All patients received a single dose of azithromycin and 14-day course of ceftriaxone with resolution of symptoms.
- The rate of DGI at RICVAMC was 4.9% (3/61 cases reported) in 2019.
- These cases represented the first cultures isolated from invasive specimens at RICVAMC since at least 2016.

CONCLUSIONS

- This cluster of DGI cases was unusual given the age of the patients, lack of risk factors, and recent rarity at this VAMC
- The actual regional rate of DGI is unknown since it is reported no differently than uncomplicated infection in Virginia. More refined reporting is needed.
- Providers should be aware of the possibility of DGI in older populations without classic risk factors.

Figure 1: Isolate of *Neisseria gonorrhoeae*

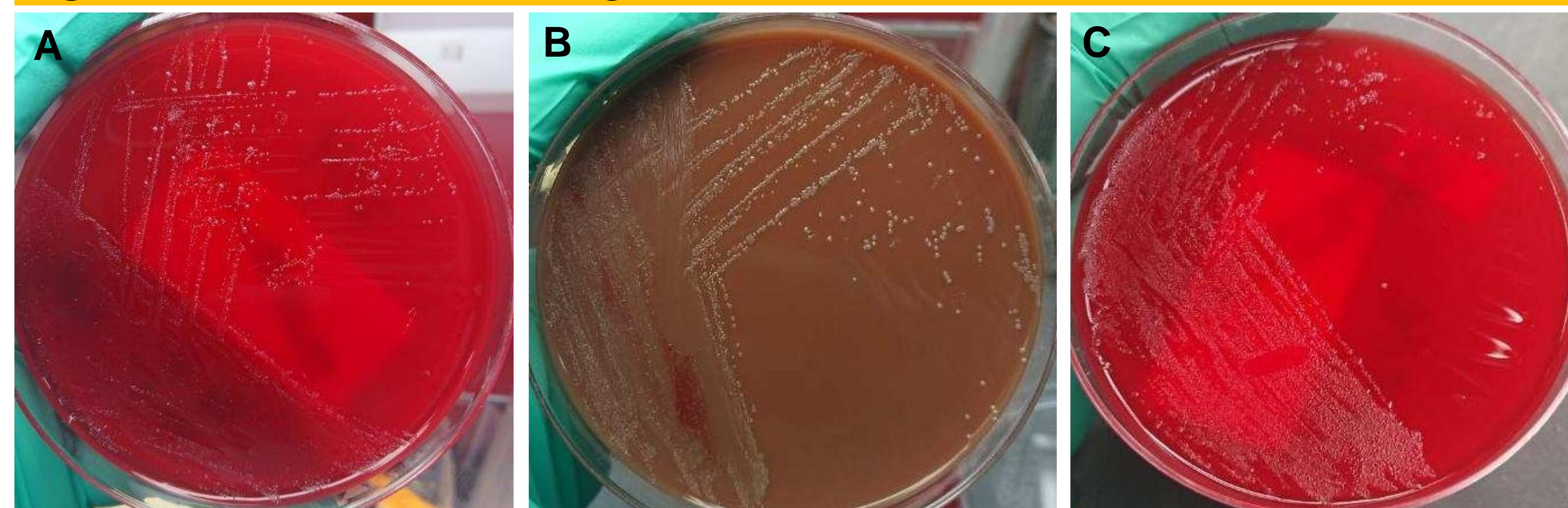


Figure 1:

Growth of *N. gonorrhoeae* isolate from blood culture on (A) blood, (B) chocolate, and (C) Columbia Naladixic Acid agars. Photos courtesy of Bill Veilleux.