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Perianal Abscess due to *Neisseria gonorrhoeae*: An Unusual Case in the Post-Antibiotic Era

Published online: 24 June 2003
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Abstract Described here is the case of a 21-year-old homosexual male patient who presented with perianal abscess without urethritis that was caused by infection with *Neisseria gonorrhoeae*. Incision and drainage of the abscess and oral penicillin therapy resulted in full healing, without the development of an anal fistula. The spectrum of gonococcal abscesses and the relevant aspects of their management are discussed.

Introduction

Perianal abscesses are common among patients seen for acute surgical admission. They more frequently occur in men, and their peak incidence is in the third decade of life [1]. Enteric anaerobic and aerobic organisms and, at a lesser frequency, skin commensals are the most common culprits [1]. Perianal abscesses are rarely caused by sexually transmitted infections [2], parasitic infestations [3], tuberculosis [4], or haematological malignancy such as lymphoma [5].

We present an unusual case of perianal abscess formation in a young male patient caused by a sexually transmitted infection with *Neisseria gonorrhoeae*. Gonococcal abscesses and the relevant aspects of their management are discussed.

Case Report

A 21-year-old male presented with a 7-day history of perianal throbbing pain that had worsened over the preceding 2 days. This was not accompanied by any change in bowel habit, rectal bleeding or urethral discharge. He had suffered from depression but was otherwise well. He reported a history of anal intercourse.

Clinical examination revealed pyrexia (37.3°C) and a perianal abscess. Investigations revealed a leucocytosis of $12.8 \times 10^9/l$, and a raised C-reactive protein level of 30 mg/l (normal range, 0–10 mg/l). No blood cultures were obtained.

Examination under anaesthesia confirmed the presence of a 2 cm×3 cm perianal abscess at the 4 o'clock position less than 2 cm from the anal verge. Anoscopy and proctoscopy were unremarkable. The abscess was incised and appeared superficial with no inter-sphincteric extension. Pus was sent for microbiological examination, and the abscess cavity was packed.

The pus was cultured (blood agar in CO₂, anaerobic blood agar, and chocolate Columbia blood agar in CO₂) and a Gram-stain was performed. These tests revealed *Neisseria gonorrhoeae*, and the identity was confirmed by the Phadebact Monoclonal GC test (Boule Diagnostics, Sweden) and the apiNH test (bioMérieux, UK). No other organisms were detected.

The gonococcal isolate was sensitive to penicillin, tetracycline, cefuroxime and ofloxacin. Subsequent urethral smears during follow-up were negative for *Neisseria gonorrhoeae*. The patient received a 1-week course of oral penicillin, and his perianal wound healed fully. At 6-week post-surgical follow-up there was no clinical evidence of a residual fistula-in-ano.

Discussion

Urethrogenital and pelvic abscesses are recognised but rare complications of gonorrhoeal infection; case reports involving the prepuce, periurethral tissue [6], prostate (in the pre-antibiotic era), the fallopian tubes, ovaries and pelvis [7, 8] have been described. Abscesses may also develop through haematological dissemination in joints and limb muscles, or through sexual contact in areas such as the oral cavity. Newborns of infected mothers may be affected with scalp and oral abscesses.

Gonococcal proctitis has been described previously [9], and rectal isolates among male patients with urethral gonorrhoeal infection are common [10]. Gonococcal perianal abscesses, formerly seen in the pre-antibiotic era [11], are rarely seen in modern medical practices [12, 13]. Although rupture of a periurethral gonococcal abscess has been reported to result in a urethral fistula [6], a perianal fistula did not occur in our patient.

Experimental animal data has suggested that *Neisseria gonorrhoeae* merely initiates infection and is not capable

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alone of producing abscesses [14]. It has also been reported that the combination of *Neisseria gonorrhoeae* and facultative and/or anaerobic bacteria may result in the development of abscesses more often than with *Neisseria gonorrhoeae* alone [14]. These organisms may gain access from the lower genital tract or from transmucosal migration of intestinal or rectal flora [14]. Mixed bacterial cultures in patients with gonorrheal abscesses are not uncommon [6]. In the case reported here, however, *Neisseria gonorrhoeae* was the only bacterium isolated.

If untreated, gonococcal abscesses may spread to surrounding tissues, rupture to the peritoneal cavity [7], or disseminate and infect remote sites [15]. Percutaneous [15] or laparoscopic [8] drainage of deep gonococcal abscesses and/or aspiration of superficial abscesses [6] in conjunction with the administration of systemic antibiotics are the mainstays of therapy. While gonococcal abscesses may resolve with systemic antibiotic therapy alone, the direct administration of antibiotics into deep abscesses might be more effective [16].

Resistance to tetracycline and fluoroquinolones (ciprofloxacin) is increasing, particularly in Asian strains, but most isolates remain sensitive to spectinomycin, ceftriaxone and azithromycin [10, 17]. Since bacterial synergy often exists in gonorrheal abscesses, therapeutic intervention should include the use of antimicrobial agents effective against both the aerobic and anaerobic components of the mixed infection when deep abscesses are treated [18]. However, when superficial abscesses are drained, as in the case reported here, this may not be required. In our patient with a gonococcal perianal abscess, the isolate was known to be susceptible to penicillin, and cure was achieved with this antibiotic and surgical drainage.

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