

Cutaneous vasculitis as the sole manifestation of disseminated gonococcal infection: case report

M Mastrodonardo, F Loconsole, A Conte, F Rantuccio

Abstract

One of the possible systemic complications of gonorrhoea is disseminated gonococcal infection (DGI), which is usually characterised by both skin and joint lesions. While joint involvement ranges from tenosynovitis to suppurative arthritis, cutaneous involvement features varied non-specific patterns often clinically and histologically consistent with vasculitis. We report a case of DGI in which an extensive, vesicobullous, haemorrhagic, and necrotic cutaneous vasculitis was the sole manifestation of the disease.

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The Department of Dermatology, University of Bari, Bari, Italy
M Mastrodonardo
F Loconsole
A Conte
F Rantuccio

Address for correspondence:
Pr. Francesco Rantuccio
viale Ennio 15 - 70124
Bari, Italy.

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Case report

A woman aged 24 years attended the Department of Dermatology and Sexually Transmitted Diseases of the University of Bari with a one week history of rapidly enlarging, almost asymptomatic, vesicobullous, haemorrhagic, and necrotic lesions on the buttocks and lower limbs (fig). Her history was non-contributory with the exception of three consecutive miscarriages during the last four years. The eruption had not been heralded or accompanied by any constitutional upset. Symptoms and signs of genital tract or joint involvement had been absent as well. Finally, no local or general therapeutic attempt had been made before the patient's attendance at our clinic.

On physical examination, the patient was in otherwise good health. A full urine and blood chemistry panel failed to reveal any abnormality other than moderate hypocomplementaemia and mildly increased ESR, alpha₂- and gammaglobulins, and circulating immune-complexes. A biopsy specimen was also taken from the border of one lesion and the results of light microscopy and direct immunofluorescence examinations confirmed the clinical diagnosis of vasculitis.

A variety of screening tests were then performed in order to provide clues as to the nature of the cause of vascular lesions. As is our rule, the survey included detection of genital and non-genital foci. While examination of Gram stained smears from urethra, cervix, rectum, and throat gave negative results, cultures on Thayer-Martin medium grew colonies of *N gonorrhoeae* from the cervix. In contrast, all other investigations, including parallel tests for other sexually transmitted diseases, human immunodeficiency virus (HIV) antibody titres determination, complete cardiological, rheumatological, otorhinolaryngological, odontological, and neurological surveys, failed to reveal any concurrent abnormality.

Furthermore, a supplementary focused history was taken and revealed that the patient had had a stable heterosexual relationship for the last 5 years and that she had never suffered from sexually transmitted diseases. She persuaded her 28-year-old husband to undergo STD investigations. He was asymptomatic and denied having had other sexual partners. Nevertheless, specimens were taken from his urethra, rectum, and throat. Both Gram stained smears and cultures detected *N gonorrhoeae* in the urethra. Finally, before starting penicillin therapy, to which the isolates from both



Figure Extensive, vesicobullous, haemorrhagic, and necrotic lesions located on the buttock (above) and lower limbs (below).

patients showed highly susceptible, repeated aerobic and anaerobic cultures from blood and skin lesions were performed. Although results were constantly negative, the diagnosis of disseminated gonococcal infection was made. The dermatosis improved dramatically under 1 week of penicillin G treatment.

Discussion

Sequelae of gonorrhoea include disseminated gonococcal infection (DGI). This peculiar pathological entity usually presents with two different clinical pictures which have been thought to be the expression of a pathological continuum where a "bacteraemic" stage and a "joint sepsis" stage follow each other.¹ The first is characterised by polyarthralgia, tenosynovitis and dermatitis; the second consists of purulent arthritis, more frequently without dermatitis.²⁻⁴ As regards cutaneous involvement, diverse non-specific patterns often clinically and histologically consisting with vasculitis have been described.⁵⁻⁷

One of the main obstacles to diagnosis of DGI is the difficulty in obtaining microbiological confirmation. Skin, blood and synovial fluid cultures are often negative.^{2,3,8} However, evidence of a possible role played via immunological mechanisms by non-viable bacterial components have been reported.^{5,6,9-12}

According with the criteria established by Masi and Eisenstein in 1981,¹³ we believe that the case here presented belongs to the broader category of "documented" DGI in which cutaneous involvement parallels the proof of gonococcal infection at a primary focus. In our opinion our case seems worth presenting as only a few cases have been previously reported in which dermatitis was the sole manifestation of the disease.^{3,7,13} In the great majority of cases skin lesions, when present, coexist with evidence of joint involvement and/or other manifestations of gonococcal sepsis.

Finally, on the basis of our experience with vasculitis,¹⁴ we would now incidentally underline that the case described above is the only one in which to our knowledge gonococcal infection led to DGI. This finding obviously contrasts with those provided by other authors¹⁷ who have reported disseminated gonococcal infection to develop in 0.4 to 3% of patients with mucosal infection. In our opinion, this circumstance may be at least partially due to the high proportion of patients with asymptomatic primary infections² who therefore do not present for treatment at STD departments.

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