

A Nonspecific Penile Ulcer Leading to the Diagnosis of Wegener's Granulomatosis

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The presented case describes a 53-year-old male who had been treated for non-specific cutaneous lesions for two months without any improvement. He was referred to our department after developing an erosive penile ulcer. Investigation for sexually transmitted diseases and Mycobacterium tuberculosis ended with negative results. Penile ulcer biopsy suggested the diagnosis of Wegener's granulomatosis (WG). The patient presented with upper respiratory tract symptoms during this period. Measuring antineutrophil cytoplasmic antibodies (c-ANCA), confirmed the diagnosis. Immunosuppressive therapy was initiated and resulted in a favorable response.

Keywords: antineutrophil cytoplasmic antibodies; penile ulcer; Wegener's granulomatosis

INTRODUCTION

Wegener's granulomatosis is characterized by a necrotizing granulomatous vasculitis of the upper and lower respiratory tracts accompanied by glomerulonephritis. Presentation is usually with symptoms of upper respiratory tract involvement⁽¹⁾. Dermatologic manifestations are common and a broad range of skin lesions have been described⁽²⁾. Urogenital involvement is a rare incidence. Ulcerative lesions of the nonkeratinized epithelium of the glans of penis and corona are uncommon and a very few number of cases have been reported⁽³⁾. The present case concerns a patient with a nonspecific erosive penile ulcer and cutaneous lesions in which penile biopsy and assessing C-ANCA level helped us to establish the correct diagnosis and administer the appropriate treatment.

CASE REPORT

A 53-year-old man was referred to our department for a recent appearance of a penile ulcer. He had earlier noted pruritic cutaneous lesions on his body and extremities. Topical and oral antibiotics had been administered to him by an outpatient clinic. The lesions were refractory to treatment. About a week before presentation the patient developed a penile ulcer.

The patient had a history of coronary artery bypass surgery and nasal polyp removal five and ten years ago, respec-



Figure 1. Erosive penile ulcer.

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tively. He also mentioned a chronic rhinitis with relapsing episodes in cold months. He emphasized that the symptoms including nasal congestion and rhinorrhea had been worsening since the beginning of the cutaneous lesions. There was no complaint of general malaise nor weight loss. No respiratory or gastrointestinal was mentioned.

On physical examination some well circumscribed pruritic, depressed lesions on the anterior wall of the chest and abdomen as well as on the back of his hands and on his ankles with a maximum size of 2 centimeters were noted. There was a tender, erosive ulcer on the dorsal aspect of the coronal sulcus, extending to the edge of glans (**Figure 1**). Inspection of nasal mucosa showed some degree of edema and erythema. Complete physical examination was otherwise normal.

History was negative for unsafe intercourse and serological and microbiological investigations did not show positive results for sexually transmitted infections. Wound cultures for gram positive and gram negative and anaerobic microorganisms were negative either. A wound sample was sent for Mycobacterium tuberculosis DNA-PCR which did not yield positive results. Acute phase inflammatory markers (ESR and CRP) were not elevated. Renal and liver function test, blood cell count and serum albumin were all within the normal limits. Urine analysis was negative for leukocyturia, hematuria and proteinuria. Chest x-ray also showed normal results.

Biopsy from the penile ulcer was performed and while waiting for the results, patient's condition turned worsen by the sudden onset of epistaxis, headache and anorexia. On examination crusted mucosal ulcer on both sides of nasal septum was detected. Histopathological examination of penile ulcer biopsy indicated vasculitis with endothelial edema and infiltration of neutrophils. Scatters of giant cells were also present in vascular wall. The findings were suggested to be compatible with Wegener's Granulomatosis (WG). In order to confirm the pathology report, antineutrophilic cytoplasmic antibodies (C-ANCA) was checked which was positive to the level of 96.14 RU/mL (positive: > 20 RU/mL). The patient was treated with methotrexate and prednisone which resulted in the improvement of the cutaneous and penile ulcers after 2 months. Prednisone was maintained for another six months, then it was gradually tapered to a minimum maintenance dose. Six months after the biopsy, penile lesion was completely healed.

DISCUSSION

WG is a necrotizing vasculitis disease which in most cases affects upper and lower respiratory tract associated with renal involvement⁽⁴⁾. The incidence ranges from 3 to 9.7 cases per million/year. The disease is more prevalent in the Caucasian population and the average age of involvement is about 40 years⁽⁵⁾. It is usually described in two subcategories: general or systemic form and localized or limited form^(6,7). The current consensus is that limited disease, in contrast to systemic one, includes manifestations of WG that poses no immediate threat to either the patient's life or the function of a vital organs⁽⁸⁾. The usual onset of WG is associated with progressive necrosis in upper and lower respiratory tracts. Subsequently the disease spreads through the body and targets different organs producing a variety of symptoms⁽⁹⁾.

Although any organ can be affected, only a few reports about urogenital manifestation in organs such as prostate, seminal vesicles, testis, bladder, and penis have been reported⁽¹⁰⁾. Penile involvement is a very rare presentation in WG. Cases in which an isolated nonspecific erosive penile lesion is the only symptom of WG have been reported in only 5 patients so far⁽²⁾. In the present case, penile ulcer appeared at a short interval after the cutaneous lesions.

Dermatologic manifestations have been described in 50% of cases of WG. Mostly, palpable purpura is the reported lesion⁽⁴⁾. When dermatological lesions are the only presentation, determining the correct diagnosis may become somehow difficult. That is because histologic examination does not always correlate with the pathognomonic findings of WG which include leukocytoclastic vasculitis of small and medium size vessels alongside necrotizing granuloma⁽¹¹⁾.

Al Rajabi and colleagues⁽²⁾ reported a patient with a penile lesion in glans of penis for four months before the breakthrough of upper respiratory tract symptoms which led to taking a biopsy from the lesion and diagnosis of WG. Meanwhile, he had been treated with topical steroids and antibiotics without any improvement. A biopsy from the penile lesion led them to the diagnosis of WG.

Our case also follows the same course. The patient was treated with empiric treatment for the skin lesions till the appearance of the penile ulcer. The penile biopsy was the key factor for the right diagnosis. Davenport and colleagues⁽¹²⁾ reported 8 cases of WG involving urogenital tract. Six of the cases were of the limited form. One of the patients with the diagnosis of limited WG in urethra and penis had been treated with repeated urethral dilations for a long time before developing a systemic illness after 7 years.

Many studies emphasize the value of autoimmune investigations for the diagnosis of WG. When C-ANCA is present in the blood of a patient whose symptoms or signs suggest WG, the likelihood of the diagnosis increases considerably. In most cases, however, it is still very important to biopsy an involved organ to verify the diagnosis. Monitoring of these antibodies can be helpful in both the diagnosis and assessment of disease activity⁽¹³⁾. Bories et al.⁽⁴⁾ reported a 50-year-old man with a 3 month history of penile ulcer. Penile lesion biopsy was performed and the results showed a perivascular and inflammatory dermal infiltrate containing a majority of polynuclear neutrophils with some multinucleated histiocytes. The findings were compatible with an infectious disease or a neutrophilic dermatosis. The diagnosis of pyoderma gangrenosum was established for him and treatment with topical tacrolimus had some favorable results. 15 months later the ulcer relapsed. This time autoimmune assessment revealed elevated C-ANCA, suggesting the diagnosis of WG.

Matsuda and colleagues⁽⁹⁾ reported a 37 year old male with a sudden onset of penile swelling and progression to necrosis which led to complete penile loss. Histopathologic examination and investigating C-ANCA levels confirmed the diagnosis of WG. They described it as a progressive disease, refractory to different kinds of immunosuppressive regimens. Subsequent pulmonary and gastric bleedings resulted to patient's death. Treatment strategy depends on the severity of the disease⁽¹⁴⁾. Severe disease requires immediate adminis-

tration of an aggressive therapeutic regimen which includes cyclophosphamide and glucocorticoids. On the other hand the limited form usually responds to a less toxic treatment such as methotrexate or rituximab and glucocorticoids⁽⁸⁾.

Mucocutaneous lesions may be an early sign and there are reports that active generalized disease can be delayed for a long period of time⁽¹⁴⁾. Our patient showed a short time gap of only two months between the appearance of cutaneous lesions and upper respiratory tract symptoms. Penile biopsy and assessment of C-ANCA helped to determine a correct diagnosis. The limited form of the disease was suggested and treatment with methotrexate and prednisone resulted in remission of the disease.

CONCLUSIONS

Our patient seems to be a rare case of WG presenting with cutaneous lesions followed by an erosive penile ulcer. Taking medical history and performing routine laboratory studies were not very helpful to find the main cause of manifestation. A histologic examination of the ulcer was the key factor to narrow the list of different diagnosis. The elevated level of c-ANCA confirmed WG. Administration of immunosuppressive therapeutic regimens was successful and led to remission of the disease.

CONFLICT OF INTEREST

The authors report no conflict of interest.

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