

NECROTIZING FASCLITIS OF VULVA

A REPORT OF TWO CASES

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Abstract - Vulvar necrotizing fasciitis is an uncommon infectious disorder. Since the first reported cases almost 100 years ago, necrotizing fasciitis continues to present a diagnostic and therapeutic challenge. What usually begins as a subtle infection can become life-threatening. We report two cases of vulvar necrotizing fasciitis, one after posterior colporrhaphy in a woman with four risk factors and the other in a young woman without any risk factor.

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INTRODUCTION

Vulvar necrotizing fasciitis was reported in gynecologic literature in 1972 (1). Usually, it is preceded by surgery, injury, or radiation. However, it may also arise de novo. At 1991 revire identified 29 reported cases of de novo necrotizing fasciitis of the vulva (2). The next year a series of 29 additional de novo cases were reported (3). Necrotizing fasciitis is a soft tissue infection which is characterized by widespread necrosis of fascia and subcutaneous tissue while characteristically sparing underlying muscle. In earlier series mortality was higher than 30% (4). It is a polymicrobial infection including both anaerobic gram positive cocci and gram negative bacillus (1,5). Early signs include subcutaneous induration and tenderness with progression, hyposthesia and anesthesia of the affected area occur. The diagnosis of this condition is often elusive and requires a high degree of clinical suspicion. Roentgenograms are useful for the early detection of soft tissue gas. Computerized tomography may provide more accurate diagnosis than plain films alone, particularly early in the disease process. MRI is also an ideal technique for showing soft tissue abnormalities.

Case 1

A 54 year old obese woman developed fever and chills 3 days after posterior colporrhaphy. Her medical history was positive for hypertension but not for diabetes. On physical exam she was found to have a

5 × 5 cm perineal hematoma with extensive edema and erythema on left labia of and buttock. Her temperature was 38°C and she had a pulse rate of 100. Initial culture was taken and with a diagnosis of infected hematoma, high doses of penicillin, gentamicin and metronidazole were started. The following day the hematoma was drained. At this time her blood sugar was found to be high (FBS = 179 mg/dl) so insulin was started but she didn't respond to therapy and her fever persisted and vulvar edema and inflammatory changes extended anteriorly to the left pubic region and posteriorly, into the left buttock. Antibiotics were changed to amikacin and clindamycin and a surgical consultation was requested. After consultation she was prepared for debridement with the diagnosis of necrotizing fasciitis of vulva. Debridement consisted of a modified left radical vulvectomy and resection of involved areas. The pathology revealed extensive necrosis and purulent inflammation consistent with necrotizing fasciitis. Initial culture was gram positive for cocci and gram negative bacill. Antibiotics and aggressive glucose control were continued. Wound care with frequent dressing was done and debridement was carried out at bedside as indicated. The patient was discharged on the 38th postoperative day in good condition.

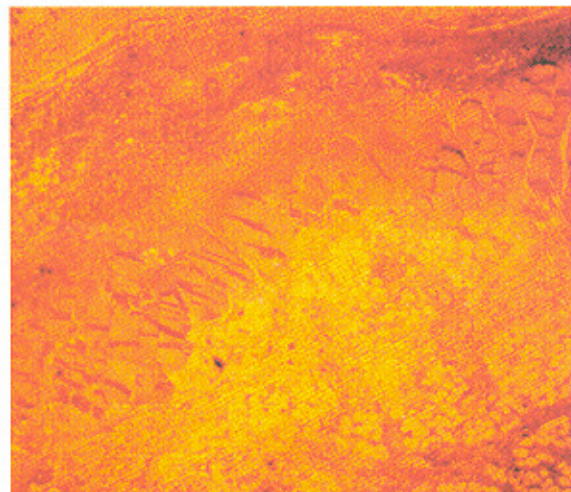


Fig. 1. Inflammation, areas of focal necrosis and microvascular thrombosis

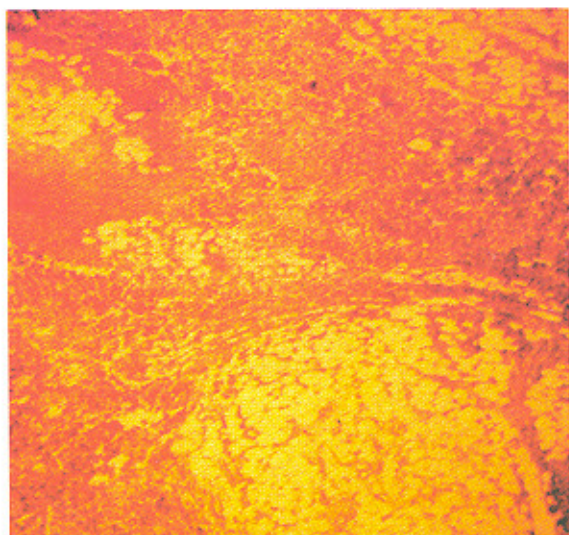


Fig. 2. High magnification of subcutaneous tissue

Case 2

A 30 year old woman was referred to the Shariati Hospital with a 5 day history of fever, chills and a large vulvar ulcer with foul smelling discharge.

She had had spontaneous vaginal delivery at home seven days prior to admission without any laceration. Her medical history was unremarkable. On physical exam she was pale, toxic with a temperature of 39.3C and a pulse rate of 100. There was a large ulceration with foul - smelling brown discharge on the left labia major with extensive edema and inflammation around it. The right side appeared uninvolved. Initial laboratory values included a white blood count of 11800 with 82 percent neutrophils and normal serum glucose and blood urea nitrogen. High dose of penicillin, clindamycin and gentamicin were started with the diagnosis of necrotizing fasciitis. After the condition was stabilized, she was prepared for extensive debridement. The pathological report revealed skin and subcutaneous tissues with areas of necrosis. Parenteral nutrition was initiated and antibiotics were continued. Wound care consisted of wet to dry dressings of solution of povidon iodine and normal saline. Final wound cultures revealed gram negative bacillus. She was discharged on the 28th postoperative day in good condition while taking oral antibiotics.

DISCUSSION

Six risk factors have been cited for mortality in patients with necrotizing fasciitis: diabetes mellitus, age greater than 50, intravenous drug use, peripheral vascular disease, hypertension and malnutrition/obesity (6). Patients having three or more of these had a 50%

mortality. When analyzed individually, the only risk factor to reach predictive significance was diabetes with 83% mortality rate (7). Implicated mechanisms include ischemic small vessel disease leading to hypoxia, defect in neutrophil chemotaxis and phagocytosis and increase glucose level that create a favorable environment for fermentation. One of our patients had four risk factors and it seemed deep penetration of bacterial organisms during perineoplasty and hematoma formation made her susceptible to this life-threatening infection. In the second case, vaginal delivery at home may have caused bacterial organisms to invade through tiny lacerations during vaginal birth. Although imaging techniques can help in the diagnosis and provide information on the nature and extent of the infection, none of our patients were subjected to it. There is a direct correlation between radiographic evidence of gas and subcutaneous gas found at the time of surgery (8). Besides, the extent of gas along deep fascial planes may aid in planning the surgical approach and the extent of dissection for complete debridement (9). The extent of necrosis can also be appreciated at the time of surgery by lack of tissue resistance to blunt dissection, visual inspection, and occasional frozen section diagnosis.

Postoperative care requires attention to the patient's nutritional status and underlying medical conditions. Early parenteral nutrition may aid in the patient's recovery. Because of the polymicrobial nature of the disease, broad-spectrum antibiotics must be administered and may be adjusted as result of cultures and sensitivities become available.

Wound care presents a major nursing challenge. The extensive nature of the surgical wound creates a dilemma because the frequent dressing changes required to prevent superinfection results in drying of the wound, thus impeding granulation.

Optimal treatment of vulvar necrotizing fasciitis requires a team approach. Recognition in the early stage of infection and prompt administration of broad spectrum antibiotics may prevent a life-threatening situation. Despite advances in antibiotic therapy, aggressive surgical debridement remains the hallmark of therapy. Hyperbaric oxygen therapy may be of some benefit and can reduce mortality and the need for debridement (10).

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