



# A case report: Sepsis related to vulvar abscess

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**Citation:** Kalkan Yılmaz B. A case report: Sepsis related to vulvar abscess. Pelviperineology 2024;43(2):81-84

## ABSTRACT

Vulvar abscesses are mass-forming and infectious lesions that occur in the external genital organs of women. The abscess may affect larger areas and progress to more complicated stages due to factors such as the patient's hygiene, immunosuppressive reasons, and additional medical conditions. Management of vulvar area abscesses typically requires a multidisciplinary approach, primarily involving gynecology. In this case presentation, we aim to present a case of sepsis secondary to vulvar abscess in 62-year-old morbidly obese patient with additional medical conditions, who was deemed inoperable.

**Keywords:** Sepsis; vulvar abscess; antibiotherapy

## INTRODUCTION

Vulvar abscesses are massive and infectious lesions of the female external genitalia characterized by abscess formation. Abscess formation occurs most commonly in the Bartholin gland, but abscesses involving the labium majus and minus are also encountered.<sup>1</sup> Abscesses may affect larger areas and have a more complicated course due to the patient's hygiene, immunosuppressive causes and comorbidities. The presence of necrotic tissues with abscess in the genital region suggests Fournier gangrene. Vulvar abscesses require a multidisciplinary approach, especially gynecology.

## CASE REPORT

A 62-year-old patient with morbid obesity (body mass index 54.11 kg/m<sup>2</sup>) and associated mobility limitation, known diabetes mellitus (DM), chronic obstructive pulmonary disease (COPD), heart failure, coronary artery disease (CAD) and hypertension was admitted to the emergency room with general condition disorder, fever and confusion. After the initial evaluation of the patient, the patient was followed up in the intensive care unit due to sepsis. On admission, fever was 38.1 °C, arterial blood pressure was 100/60 mm/hg, and pulse rate was 120 beats/min. On admission, blood glucose was 543 mg/dL, serum creatinine

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**Received:** 05 March 2024 **Accepted:** 13 March 2024



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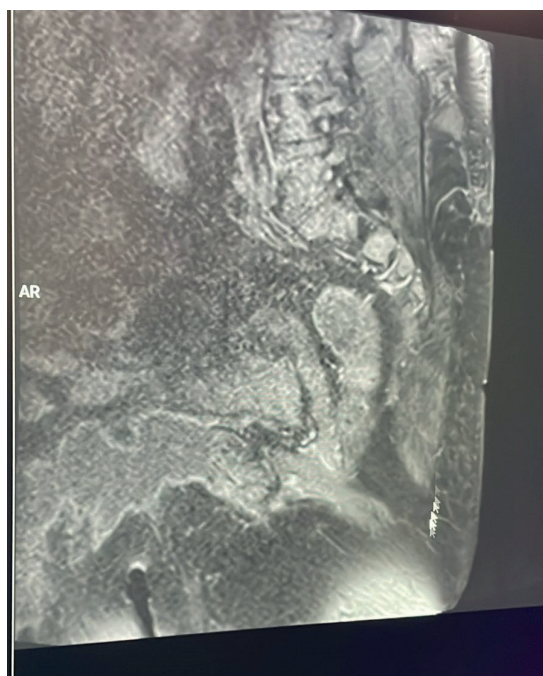
2.9 mg/dL, white blood cell 38600/ $\mu$ L, hemoglobin 9.5 g/dL, C-reactive protein >200 mg/L and procalcitonin 4.5 ng/mL.

The patient was evaluated by a gynecologist and obstetrician after a necrotic, purulent discharge lesion of approximately 6 cm on the left labium majus (Figure 1) was detected on physical examination. The patient was evaluated by cardiology, internal medicine, pulmonology, infectious diseases and obstetrics and gynecology, and it was determined that the focus of sepsis was the lesion on the vulva. It was learned that the patient underwent hysterectomy and bilateral salpingoophorectomy operation for myoma uteri approximately 20 years ago. After physical examination findings and follow-up of the lesion, it was determined that the patient did not have fornier's gangrene and emergency surgery was not considered due to comorbidities. In addition to symptomatic treatment, intravenous (IV) clindamycin 3x600 mg and ceftriaxone 3x2 gr antibiotherapy was started with the recommendation of infectious diseases. Methicillin-resistant staphylococcus epidermidis was grown in blood cultures. Meropenem 3x1 gr treatment was started on the 5<sup>th</sup> day of hospitalization. The abscess content was tried to be drained with daily dressing and local debridement. The patient was followed up in the intensive care unit for 9 days and was followed up in the gynecology and obstetrics ward after her sepsis picture improved, her laboratory values showed white blood cell 31000/ $\mu$ L, serum creatinine 0.85 mg/dL, hemoglobin 9.1 g/dL, C-reactive protein 135 mg/L and procalcitonin 2.4 ng/mL and her general condition improved. Her laboratory values



**Figure 1.** Infected appearance of the left labium majus on admission

(hemogram, biochemistry, C-reactive protein) were monitored daily. The patient was not operated because of her comorbidities and anesthesia risk. Contrast-enhanced magnetic resonance imaging was performed to investigate the depth of the vulvar lesion and possible intraabdominal mass-malignancy-fistula. Because of the appearance compatible with an approximately 18 cm abscess extending to the vulva on the rectus (Figure 2), a catheter was inserted for percutaneous abscess drainage from the suprapubic region by interventional radiology. Approximately 2500 cc purulent abscess content was drained on the first day. The patient was followed up daily by flushing the abscess contents with metronidazole and ceftriaxone through a catheter. There was no growth in control blood, urine, wound and urine cultures after catheterization. IV antibiotic treatment, blood glucose regulation and monitoring of her intake brought the signs of overload under control. The patient was dressed 3 times a day with local antibiotics (nitrofurazone and mupirocin) and epithelizing cream (hamamelis Virginia and triticum vulgare) for the vulvar area. After 25 days of catheterized follow-up, a control computed tomography was performed and the catheter was withdrawn when it was observed that the abscess content had drained. On the 52<sup>nd</sup> day of hospitalization, the patient was discharged with a white blood cell count of 5700/ $\mu$ L, hemoglobin 9.7 g/dL, C-reactive protein 4.9 mg/L, negative procalcitonin value, sedim 53 and the infectious picture and necrotic appearance in the vulvar region were completely corrected (Figure 3).



**Figure 2.** Image of abscess extending to the anterior abdominal wall



Figure 3. Labium majus healed with wound care

## DISCUSSION

Vulvar abscess is an important gynecologic problem that is common in genital tract infections and can lead to serious problems. It usually starts as a simple superficial infection and forms an abscess by affecting the vulvar skin and subcutaneous tissues due to reasons such as the strength of the immune system and personal hygiene. The loose areolar structure of the subcutaneous layer of the vulvar region and its fascial connection with the groin and anterior abdominal wall facilitate the distribution and deepening of the abscess.<sup>2</sup> MRSA, enteric gram-negative cocci and anaerobes of the female genital tract are mainly implicated.<sup>3</sup> For vulvar abscesses requiring surgery, MRSA is the most common organism isolated.<sup>4</sup> In addition, in conditions such as uncontrolled diabetes mellitus, the size of the abscess is larger and more complicated pictures are seen.<sup>2</sup> There are studies showing that skin and soft tissue infections increase in conditions with impaired lymphovascular circulation such as obesity.<sup>5</sup> In addition, restricted mobility and obesity negatively affect vulvar hygiene and predispose to infectious conditions.<sup>6</sup>

The principles of treatment of vulvar abscesses vary according to the appearance of the abscess, the cavitory lesion it forms and whether there is a rapidly progressive lesion such as necrotizing fasciitis and systemic status. In the presence of a purulent and superficial infection, antibiotic therapy and strict surveillance after drainage may be recommended.<sup>7</sup> Community-acquired vulvar MRSA infections can be treated as outpatients but usually require hospitalization.<sup>8,9</sup> Furthermore, the relationship between vulvar abscesses and conditions such as Bartholin's gland cysts should be considered, especially in cases at risk of complications such as septic shock.<sup>3</sup> For the healing of chronic and ulcerated vulvar lesions, interventions that provide cell regeneration are

needed.<sup>10</sup> Antibiotherapy, surgical incision and abscess drainage are applied in the treatment of vulvar abscesses and appropriate antibiotic treatment is recommended for polymicrobial agents.<sup>11</sup> In addition, the effectiveness of antibiotherapy is decreased in abscess formations larger than 5 cm and surgery is required.<sup>11</sup>

In this case report, methicillin-resistant *Staphylococcus aureus* was isolated from a patient with COPD, CAD, DM, morbid obesity and accompanying circulatory disorders who developed sepsis due to abscess in the vulvar region. Due to comorbidities, the patient could not be operated and was treated with drainage and antibiotherapy. Close follow-up by pulmonology, cardiology, infectious diseases, gynecology, obstetrics and gynecology and interventional radiology led to a cure. Giant abscess formation on the rectus due to vulvar abscess and associated sepsis is a rare presentation. Recently, there has been an increase in the frequency of MRSA-caused vulvar abscesses in the literature. The hospitalization requirement is more common in patients with medical problems due to more widespread infection and larger abscesses.

## ETHICS

**Informed Consent:** Consent was obtained or waived by all participants in this study.

## DISCLOSURES

**Financial Disclosure:** The author declared that this study received no financial support.

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