Puerperal Mastitis Presenting with Extensive Skin Necrosis: Case Report

Yaygın Cilt Nekrozu ile Prezente Olan Puerperal Mastit

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ABSTRACT Puerperal mastitis occurs in approximately one third of the lactating women. It often has mild and localized clinical presentation, which can be easily treated by changing breastfeeding technique, breast massage, or simple antibiotics. However, lactation mastitis rarely presents as extensive necrotizing disease. In this paper, we report a case of an extensive necrotizing mastitis in a 23-year-old healthy woman, which presented ten days postpartum. Extensive debridement was avoided not to cause a large mammarian tissue loss, therefore she was mainly treated by wound care with topical nitrofurazone regularly for one month. Although this serious condition was reported to be associated with several accompanying systemic disorders such as diabetes mellitus and autoimmune vasculitis, it can also develop in healthy breastfeeding women. Differential diagnosis includes inflammatory breast carcinoma and granulomatous mastitis. The treatment should be based on the extention of the disease, particularly in case of the necrotizing mastitis limited to skin.

Key Words: Mastit; nekroz; tedavi

ÖZET Lohusalık mastiti emziren kadınların yaklaşık üçte birinde ortaya çıkar. Genellikle, emzirme tekniğinin değiştirilmesi, meme masajı, ya da basit antibiyotikler ile kolayca tedavi edilebilen hafif ve lokalize klinik prezentasyonlara sahiptir. Ancak, laktasyon mastiti nadiren geniş nekrotizan hastalık şeklinde ortaya çıkar. Bu yazıda, postpartum onuncu günde olan 23 yaşındaki sağlıklı bir kadında geniş bir nekrotizan mastit olgusunu sunduk. Büyük meme dokusu kaybına yol açmamak için geniş debridmandan kaçınıldı, bu nedenle hasta asıl olarak bir ay boyunca düzenli topikal nitrofurazonlu yara bakımı ile tedavi edildi. Bu ciddi durum, diabetes mellitus ve otoimmün vaskülit gibi çeşitli sistemik hastalıklar ile ilişkili olduğu bildirilmiş olsa da, sağlıklı emziren kadınlarda da gelişebilir. Ayırıcı tanı, inflamatuar meme kanseri ve granülomatöz mastiti içerir. Tedavi, özellikle deriye sınırlı nekrotizan mastit durumunda, hastalığın yaygınlığına dayalı olmalıdır.

Anahtar Kelimeler: Mastitis; necrosis; therapy

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Mastitis is defined as an inflammatory disease of the breast, which is caused by infectious or non-infectious conditions. Among all mastitis, lactation or puerperal mastitis is the most common form with a reported incidence of up to 33% in breastfeeding women.[1] Milk stasis and infection mostly caused by *Staphylococcus aureus* are the main factors in its etyopathogenesis.[2] The clinical presentation varies from localized mild inflammatory changes to abscess formation or extensive necrotizing disease. While approximately 3% of women with mastitis will develop a breast abscess, necrotizing or gangrenous mastitis is usually associated with several accompanying clinical conditions such as diabetes mellitus and au-

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toimmune vasculitis.[2-4] In this paper, a puerperal mastitis with extensive skin necrosis in a previously healthy woman was presented.

CASE REPORT

A 23-year-old postpartum 10th day woman was presented to our breast out-patient clinic with generalized edema, erythema, and necrotic areas covering approximately half of the entire skin in her right breast (Figure 1). Her vital signs were normal, except a mild fever of 38°C. Ultrasonography showed cutaneous and subcutaneous thickening, ductal enlargement, and minimal fluid collections. Breast feeding was discontinued due to the involving of the nipple, and broad-spectrum antibiotics was started. Cabergoline, a dopamine agonist, was given to the patient to reduce milk production. Only the necrotic materials that can be easily removed were debrided due to concern on the loss of mammarian tissue. Tissue samples were taken for histopathological and microbiological examinations during debridement. Wound care with nitrofurazone were made twice a day. *Streptococcus pyogenes* was isolated from tissue culture, while microscopic examination showed necrotizing inflammation. The patient was discharged on 10th day according to the clinical improvement. After one month, the patient's infected breast was virtually healed (Figure 2).

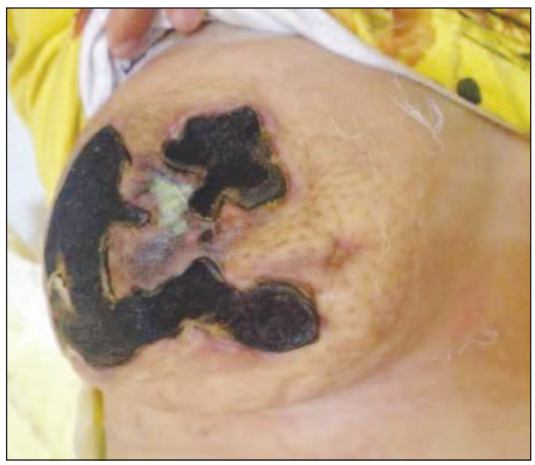

FIGURE 1: Extensive necrotising mastitis including areola and nipple (at admission).

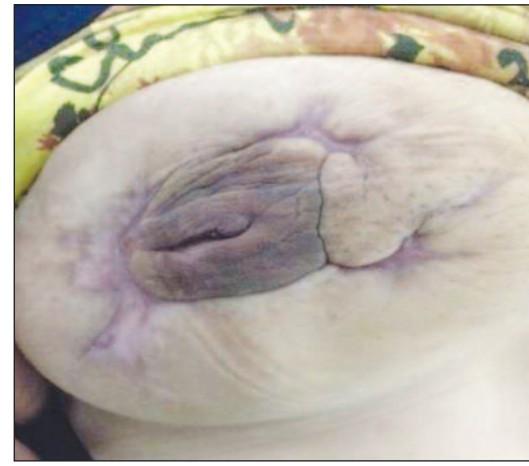

FIGURE 2: The view of the breast after one month of treatment.

DISCUSSION

Puerperal mastitis is a problematic issue for both mothers and theirs babies, because of the potential adverse effects on mother health and causing the discontinuation of breastfeeding that provides optimal infant nutrition. The patients with mastitis usually present with mild symptoms, which can be easily treated by changing breastfeeding technique, breast massage, or simple antibiotics when the signs of infection appear. However, a proportion of cases have severe clinical presentations including abscess formation and necrotizing/gangrenous mastitis. Breast abscess is a severe surgical complication of mastitis, which is characterized by a firm area in the mammarian tissue with or without fluctuance. It can be treated with either ultrasonography-guided or open surgical drainage, and cessation of breastfeeding is not necessary in most of the cases.[5] The other clinical entity, necrotizing or gangrenous mastitis, requires more clinical attention and rapid intervention due to the life-threatening potential risks such as necrotizing fascitis and sepsis. Firstly, these patients should be questioned for the presence of co-existing systemic diseases because necrotizing mastitis can be a part of various autoimmune diseases. Additionally, some disorders such as diabetes mellitus may aggrave the severity of breast inflammation. Khalil et al. reported three cases of polyarteritis nodosa with breast involvement while Thang et al. presented a severe necrotizing mastitis caused by calciphylaxis due to

hyperparathyroidism.[3,4] In such patients, the therapeutic approach may include differences, which can directly affect the clinical outcomes. Our patient had no chronic medical problem, and her general examination did not reveal any physical finding pointing a systemic disease.

The other important point in the diagnostic workup of these patients is the exclusion of an underlying inflammatory breast cancer. This condition should be considered especially in patients with atypical presentation or unresponsive to treatment.[5] Therefore, a simple biopsy containing subcutaneous tissue with overlying skin may be sufficient to achieve correct diagnosis. Accordingly, a biopsy was taken from the enfected breast of the present patient at the same time of wound debridement. Granulomatous mastitis, usually presents with inflammatory changes such as erythema and swelling, fistulation and ulceration, should be also kept in mind in the differential diagnosis.

Culture of the breast tissue should be a part of the diagnosis of cases with severe necrotizing mastitis to identify the causative microbiological pathogen. *S. aureus* is the most common bacterium isolated from cultures, and other potentially aggressive pathogens such as β-hemolytic streptococci and methicillin-resistant *S. aureus* are also responsible from abscess formation and gangrenous/necrotizing prezentation.[6,7]

Rapid intervention and early wound debridement are of great importance to obtain beter outcomes. The amount of mammarian tissue to be lost with extensive debridement should be carefully calculated; however, the septic conditions of the patients should be closely monitored to avoid any delay in treatment. Segmental or total mastectomy may be rarely needed for the patients with massive glandular necrosis.[3] However, our patient had extensive necrotic cutaneous areas limited to skin in her breast. Therefore, we managed the disease with intravenous wide spectrum antibiotics and minimal necrozectomy to avoid great loss of mammarian tissue. Necrotic skin was itself resolved by repeated wound dressings.

In conclusion, necrotizing mastitis is a rare condition usually associated with various systemic disorders. Differential diagnosis includes inflammatory breast carcinoma and granulomatous mastitis. The treatment of patients who have extensive skin necrosis should be based on the extention of the disease, and these patients should be more closely follow-up than those without.

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