

# Necrotizing Fasciitis Of the Breast

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## Abstract:

Necrotizing fasciitis (NF) is a rare life-threatening soft-tissue infection. So we presented a diabetic female patient with NF of left breast, it is very rare disease. A 60 year old women, Complained of fever, chills, and painful swelling of left breast, since 72 hours. There were foul offensive smell, purple-red blister filled with dark fluid, necrosis and decay of the most upper half of the left breast which rise highly suspicion of NF. Investigations and toilet mastectomy was done, and close follow up until the wound have been healed. There for high index of suspicion is very important, for early recognition and proper treatment.

## الخلاصة:

التهاب اللفاضة الناخر (NF) هو عدوى التهاب الأنسجة الرخوة نادرة الحدوث التي تهدد حياة المصابين بها . يناقش هذا البحث إصابة امرأة بالغة من العمر 60 عامار أصيبت بالتهاب اللفاضة الناخر في الثدي الأيسر والمصابة بداء السكري. تشكوا من حمى ، فتشعر ببرودة وتورم مؤلم في الثدي الأيسر منذ 72 ساعة. وتعاني أيضا رائحة كريهة تقرصات جلدية مائية محمرة أرجوانية اللون مملوءة بسائل ملتهب وممتاكله من النصف العلوي للثدي الأيسر والذي يزيد من احتمالية الإصابة بالتهاب اللفاضة الناخر. حيث تم عمل الفحوصات المخبرية واستئصال الأنسجة التالفة من الثدي وتمت متابعة الجرح عن قرب حتى التئامة . لذلك يعتبر الحدس والتخمين في غاية الأهمية من أجل التشخيص المبكر والعلاج المناسب.

## Introduction:

(NF) is a life-threatening soft-tissue infection primarily involving the superficial fascia. Early diagnosis and prompt aggressive surgical debridement of all necrotic tissue are significant prognostic factors, critical for survival and has been demonstrated to improve the rate of survival 1. A several terms have been used to describe this infectious disease, including phagedena, phagedenagangrenosum, hospital gangrene, progressive bacterial synergistic gangrene (Meleney's gangrene )2, Fournier's gangrene, and hemolytic streptococcal gangrene. The term necrotizing fasciitis, first coined by Wilson in 1952, is perhaps the most accurate for describing the key features of this infectious process3. initially the signs and symptoms usually include pain, swelling, erythema, pyrexia, and tachycardia. However it is only once the disease progresses that the typical more advanced skin changes are observed.

These include tense oedema, pain disproportionate to skin changes and dusky blue/purple plaques that progress to haemorrhagic bullae and necrosis4. This condition is characterized by an angiothrombotic microbial invasion and liquefactive necrosis. Histologically, necrosis of the superficial fascia, polymorphonuclear leukocyte infiltration of the deep dermis and fascia, thrombosis and suppuration of the veins and arteries coursing through the fascia, and microorganism proliferation within the destroyed fascia are seen. Initially, a horizontal phase predominates. As the condition progresses, ischemic necrosis of the skin ensues with gangrene of the subcutaneous fat and dermis, manifested as formation of bullae, skin necrosis and ulceration5. It is more common in peripheral (lower and upper limbs), less common on trunk and cervical. So we will present a rare female patient with NF of left breast.

### Case presentation:

A 60 year old diabetic women, under irregular oral hypoglycemic drugs , from Al-mahra governorate, Yemen. Presented with fever, chills, and painful swelling of left breast, since 72 hours. She was treated medical by oral antibiotic, described by practitioner as a case of left breast cellulites'. Blood pressure was 140/90mmgh, pulse rate was 110 /m, and temperature was 38.50 c.

left breast examination shows: foul offensive smell, purple-red blister filled with dark fluid, rupture during remove cloths, the nipple& areola had been completely destructed . Necrosis and decay of the most upper half of the left breast, was found. There were tender, warm and indurations of skin and subcutaneous tissues figure (1&2). the anterior group of the Left axillary lymph nodes was enlarged and tender. Other systems examination are normal.

The Laboratory investigation shows: Hemoglobin was 10 gm/dl, total number of white blood cells 15000/mm<sup>3</sup> . C-reactive protein was 150mg/dl, ESR was 100, serum creatinine was 1,1mg/dl, fasting blood glucose was 190mg/dl, serum Na<sup>+</sup> and k<sup>+</sup> were normal.

### Treatment & follow up:

Intravenous broad spectrum antibiotics (ampencilin, gentamycin, metronidazole) , antipyretic drugs and intravenous fluid were given. Surgical treatment (Toilet mastectomy) was performed shortly after admission. Finger test was positive. An immediate and aggressive surgical debridement was done , All infected and necrotic skin and subcutaneous tissues were radically excised up to bleeding healthy edges. Tissues and fluid were sent for immediate gram-stain and culture. Opened wound were copiously irrigated with hydrogen peroxide, normal saline and dressing of 10 % povidone iodine solution was used to cover the wound. Next, exploration was performed after 24 hours figure (3), and all ongoing infected tissue were excised. Wound was monitored, twice daily by disinfection and dressing changes, during the next five days. Antibiotics were changed according to microbial culture and sensitivity, the synergetic microorganisms were staphylococcus aureus and E. coli. Histopathological report showed extensive necrosis of debrided tissues with no evidence of malignancy. On 7th day (figure 4), granulation tissue was started, bad smell was disappeared, the wound was healed gradually by tertiary intention with continuous daily dressing.



Fig. (1)



Fig. (2)



Fig. (3)



Fig. (3)

## Discussion:

(NF) is a rare infectious disease in medical and surgical emergency. It is an acute rapidly progressing necrotizing infection of fascia, subcutaneous tissue and skin<sup>6</sup>. It's usually associated with immunocompromised patients which reduces resistance to infection and predisposes the patient to NF, such as HIV infection, ischemic disorders, diabetes mellitus, steroid therapy, chemotherapy, alcoholism, obesity, poor socio-economic conditions, and malnutrition. NF can also occur as a complication of chickenpox, especially in children<sup>4,7,8</sup>. But the most common risk factor for the development of NF is diabetes mellitus<sup>9</sup>. Both aerobic and anaerobic pathogens may be involved, including *Bacteroides*, *Clostridium*, *Peptostreptococcus*, *Enterobacteriaceae*, *Proteus*, *Pseudomonas*, and *Klebsiella*, but group A hemolytic streptococcus and *Staphylococcus aureus*, alone or in synergism, are the initiating infecting bacteria<sup>10</sup>. Organisms common in polymicrobial infections were: *Staphylococcus* spp., *Streptococcal* spp., *Bacteroides* and *Escherichia coli*<sup>11,12</sup>. NF has been divided into distinct types on the basis of microbiological cultures, type-I infections are polymicrobial, synergistic infections that usually are caused by non-group-A streptococci, aerobic organisms, and anaerobic organisms. Type-II infections usually are caused by *Streptococcus pyogenes* alone or with staphylococci. A further type of infection, caused by marine vibrios (gram-negative rods), is usually associated with seawater or marine animal exposure<sup>13</sup>. The paucity of early pathognomonic signs make NF a major diagnostic challenge. Patients with NF usually present with the following triad, pain, swelling and erythema, it is often misdiagnosed as cellulitis or abscess<sup>6</sup>. Initial signs and symptoms usually include pain, swelling, erythema, pyrexia, and tachycardia. However it is only once the disease progresses that the typical more advanced skin changes are observed. These include tense oedema, pain disproportionate to skin changes and dusky blue/purple plaques that progress to haemorrhagic bullae and necrosis<sup>4</sup>. The development of bulla in the skin marks the intermediary stage between early (nonspecific cutaneous features) and late NF with skin necrosis<sup>14</sup>. Beside the clinical symptoms, signs, and the positive finger test confirm the diagnosis of NF. (If the index finger dissects the subcutaneous tissue off the deep fascia easily without resistance along the tissue plane, the test is positive), and Laboratory Risk Indicator for NF (LRINEC) score, which help

to differentiate NF from other skin infection and one of the more significant diagnostic tools. The score of six or more should raise the suspicion of NF and a score of eight or more is strongly predictive of the disease<sup>15</sup>. The LRINEC score of our patient was eight and the definitive diagnosis as NF was established surgically after visualization of fascial planes and subcutaneous tissue in theatre. However, clinical clues and diagnostic tools should be used in combination to help make an early diagnosis. Early clinical suspicion, surgery and antibiotics are key to improving survival as rapid progression can occur leading to systemic toxicity. The goal of surgical intervention is to aggressively debride of all the necrotic tissues until healthy edges, bleeding tissue is reached<sup>16</sup>.

## Conclusion:

Necrotizing fasciitis is a life threatening disease, need high degree of suspicion with help of (LRINEC) score for diagnosis. And urgently aggressive surgical debridement with adjusted intravenous antibiotic according to culture and sensitivity is the most effective treatment to complete cure.

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