Available online at Journalgurus

https://www.jhspract.com https://www.journalgurus.com

Case Report

Necrotizing Fasciitis of the Breast Involving the Abdomen and the Back in a Lactating Woman: A Case Report

Joshua D. Choji[1*], Ismaila I. Garba[2], Ibrahim Yakubu[2], Kingsley O. Joshua[3*], Ahmad H. Jibril[4*]

1.Department of Surgery, Jos University Teaching Hospital, Jos, Nigeria. 2. Department of Surgery, Federal Medical Centre, Azare, Nigeria. 3. Department of Radiology, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria. 4. Department of Surgery University of Abuja Teaching Hospital, Abuja, Nigeria. *Formerly of Department of Surgery, Federal Medical Centre, Azare, Nigeria

ABSTRACT

Necrotizing fasciitis of the breast is rare but associated with high morbidity and mortality. Delayed presentation and inappropriate intervention results in multiple surgical procedures and prolonged hospital stay. Early diagnosis, prompt surgical treatment and broad-spectrum antibiotic therapy are of immense importance in preventing mortality. In this report, we present a 28-year-old lactating mother with delayed presentation of bilateral breast necrotizing fasciitis involving the anterior abdominal wall and the back.

Keywords: Breast, Necrotizing fasciitis, sepsis, debridement, skin grafting

INTRODUCTION

Necrotizing fasciitis (NF) is a synergistic, polymicrobial soft tissue infection associated with rapid progression, extensive necrosis, profound systemic toxaemia, considerable morbidity and a high mortality rate.[1] With the appropriate treatment, the reported high mortality of 73% can be reduced to 10%.[2] The presentation ranges from a mild soft tissue infection to septic shock and multi-organ dysfunction syndrome. It can affect any part of the body such as the head and neck, the trunk, both upper and lower extremities, buttocks and perineum[1,3,4,5,6] as well as the breasts in sporadic cases.[2,7]

Necrotizing infection of the breast is usually seen in malnourished, diabetic or immunocompromised patients,[2,7] however it has been reported in healthy individuals.[2] , In lactating mothers, nipple cracks,[8] poorly treated mastitis and abscess of the breast have been implicated in the disease[7] and may be bilateral when both breast are involved. NF of the breast is a severe progressive infective gangrene of the subcutaneous tissue of the breast with subsequent death of the overlying skin. Lack of prompt and appropriate treatment results in multiple surgical procedures a prolonged hospital stays with consequent financial implications.[1]

We present a case of bilateral breast NF involving the abdomen and the back in a 28-year-old lactating woman managed in our centre with a good outcome.

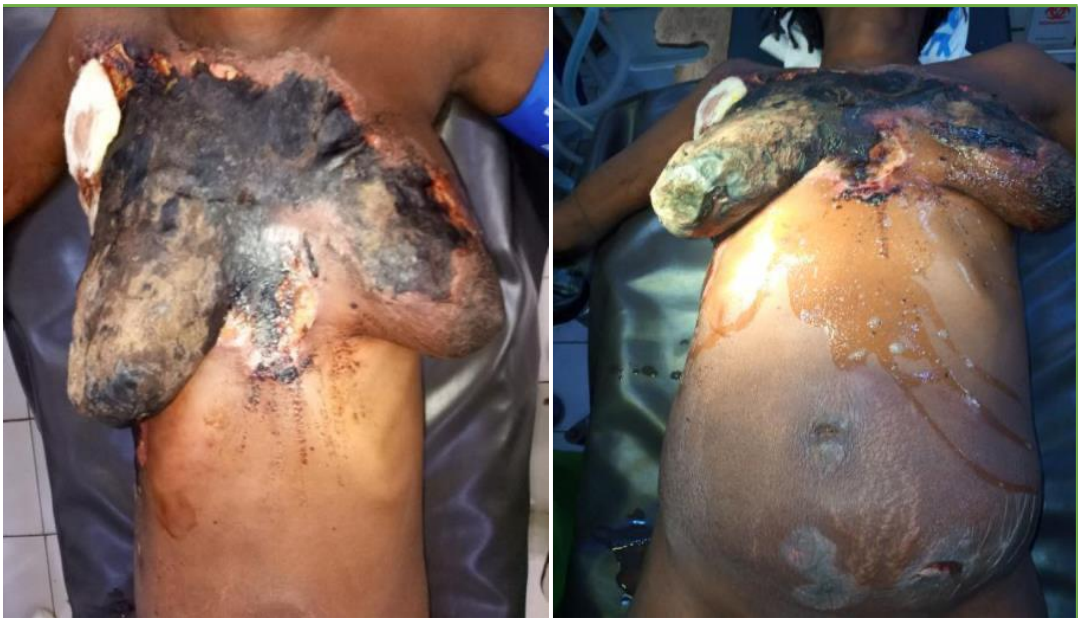
CASE REPORT

A 28-year-old lactating woman presented to the emergency unit of the hospital with a 15 days history of swelling and pain in the right breast. The painful swelling started as a boil, was gradual in onset, progressed to involve the entire right breast. It ruptured spontaneously exuding purulent discharge with subsequent dark discolouration of the skin. The contralateral breast, anterior aspect of the abdomen and the back were involved about 10 days prior to presentation. There was associated high-grade fever with chills, rigors and body weakness. There was no history of trauma and she was neither a diabetic nor retro-viral disease patient. An initial home care with the use of a

topical and oral traditional medicine worsened the condition necessitating presentation at our facility.

Examination findings at the presentation were that of a young woman, ill-looking, febrile, pale and dehydrated. The Pulse rate was 134 per minute, blood pressure of 100/60 mm Hg, respiratory rate of 20 per minute and sPO_2 of 93%. There was

Blood investigations revealed a haemoglobin of 8.2 g/dl, total leucocyte count of 13.2 x 10^9/L, random blood glucose 9.7 mmol/L, serum albumin of 28mg/dl, with a normal electrolytes, urea and creatinine. Wound culture reported Escherichia Coli. Assessment of bilateral NF of the breast involving the anterior abdominal wall and the back



A B

Figure 1: The necrosis of both breast at presentation (A), Tender anterior abdominal wall with islands of necrotic skin at suprapubic area and umbilicus (B)

gangrene of the entire right breast extending across the sternum to the left breast with foul-smelling discharge. The abdomen was full, moved with respiration and dark discolouration of the skin of suprapubic area and the back. The suprapubic area was more tender but no features of peritonitis. Bowel sounds were present and normoactive. (Fig 1)

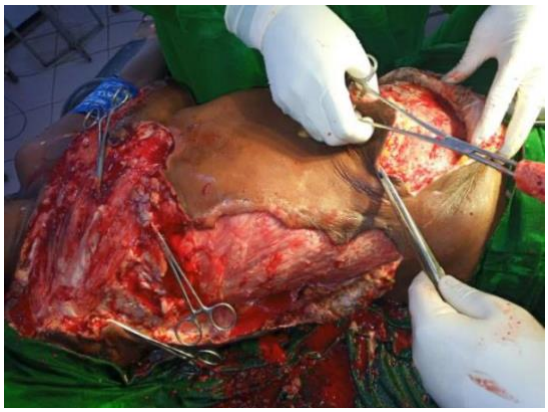
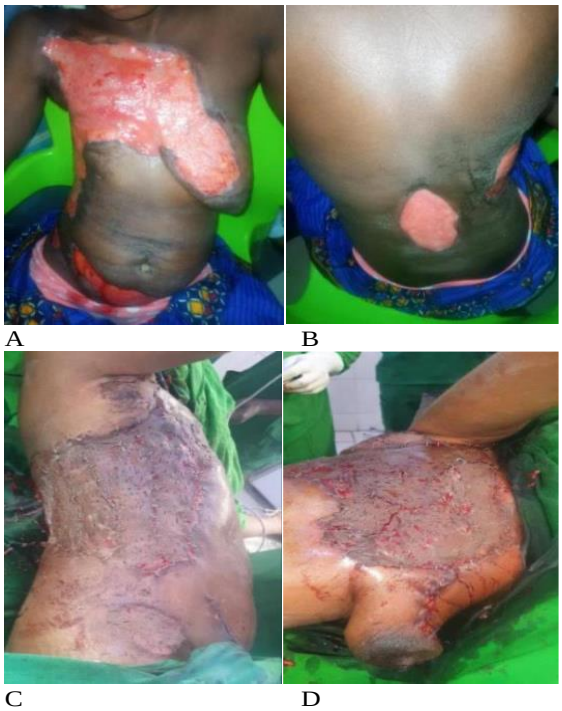
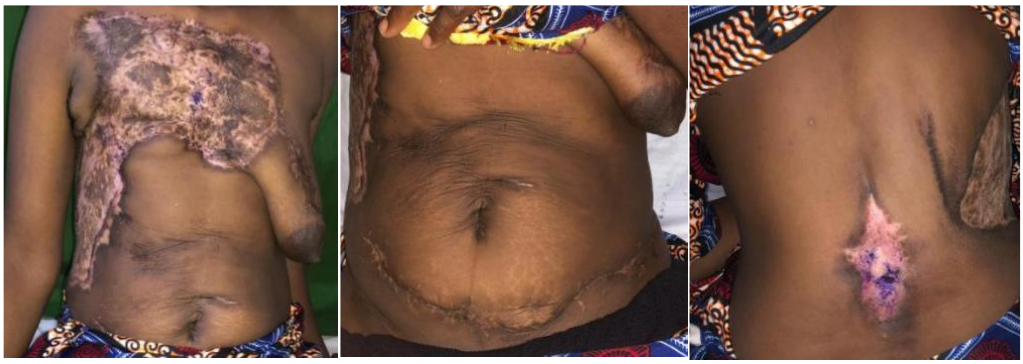


Figure 2: Thorough debridement with removal of all infected tissue/fascia



A B C D

Figure 3: Healthy wound bed after wound care and nutritional rehabilitation (A and B), grafted wound immediately on table (C and D)



A B C

Figure 4: grafted chest and right side of abdomen healed with hypopigmentation (A), healed wounds at suprapubic area and umbilicus (B) wound on the back healed by second intention (C),

with sepsis was made. She had parenteral antibiotic therapy and three pints of blood transfused. She subsequently had debridement in theatre on the third day of admission, during which about 9% of her total body surface area of skin down to necrotic fascia was excised. (Fig 2)

The postoperative care included wound dressing which was effected initially with honey and subsequently with 10% povidone iodine. She had nutritional rehabilitation until the wound bed was healthy for skin grafting. (Fig 3A and 3B) She was worked up and had a split thickness skin grafting of the residual, but healthy, wound on the right chest extending to lateral part of the right trunk on the 21st day of admission. In the same sitting, the wounds on the left breast and the lower abdomen were closed by undermining and direct apposition. The wound on the back was allowed to heal by secondary intention. (Fig 3C and 3D)

The recipient site inspection was carried out on the fifth day of surgery and graft take was 95%. Donor site inspection by the 14th day of surgery revealed re-epithelisation of about 85%. The patient requested and was discharged home on account of financial constraint, subsequently defaulted follow up and did wound care with gentian violet. (Fig 4)

Discussion

Primary NF of the breast is a rare entity and it can affect any part of the body.[1,3,4,5,6,12] The commonly affected sites are extremities, scrotum (Fournier's gangrene)[9] and perianal region.[10] The risk factors for this infection include advanced age, chronic renal failure, peripheral vascular disease, and diabetes mellitus.[11] NF of the breast affects lactating women who develop nipple cracks or fissures and have poor hygiene of the breast.[7,12] This leads to mastitis or abscess formation and if poorly treated it can progress to necrotizing fasciitis. Abur et al.[7] from Zaria, Nigeria reported that 74.4% of patients with NF of the breast were lactating mothers and 87.2% had poorly treated mastitis and breast abscess. They also showed that 71.8% of their patients were less than 31 years of age. This is in concordance with the age of our index patient of 28 years. She is from a rural setting in northern Nigeria with a poor financial background hence poor nutrition as evidenced by the hypoalbuminaemia. This could have also predisposed her to the dreadful soft tissue infection. NF has a characteristic aggressive horizontal spread of necrosis in the subcutaneous layer and vertically to involve the overlying skin and the underlying deep fascia and muscle.[8] The late presentation and initial traditional treatment contributed to the extensive skin necrosis, foul-smelling discharge and sepsis. The reason for delay in presentation may be explained by the low socioeconomic status of patients, low educational level, and preference for traditional over orthodox treatment.[7] The use of topical herbal medicine usually worsens the skin necrosis. This is supported by Abur et al.[7] who reported that 87.27% of women with NF of the breast received local traditional treatment before presentation and had extensive skin necrosis.

The main stay of treatment is thorough surgical debridement, antibiotic therapy, wound dressing, nutritional rehabilitation and wound cover. In most cases, breast salvage is possible with early presentation. However, in late disease mastectomy may be necessary,[11] or when complete necrosis of the breast occur surgical debridement and subsequent cover becomes necessary as in the index patient. The aim of debridement must be to remove all infected tissue at the first debridement. Deep fascia must be excised as much as possible and second-look surgery may be planned after 24 to 48 hours depending on the state of the wound.[11] Wound closure is carefully planned thereafter by using skin graft, flaps or mobilisation of surrounding skin.

Conclusion

NF of the breast is a potentially curable disease. Delayed presentation and initial use of topical traditional medicine could result in a rapidly fatal outcome. Early presentation and diagnosis with appropriate treatment will improve outcome. The education of pregnant and lactating mothers on the hygiene of lactating breasts and need of early presentation will reduce the incidence and complications of the disease.

Conflict of interest

The authors declare that there was no conflict of interest

Informed consent

The authors certify that the necessary and appropriate consent was obtained from the patient to publish the clinical information and images. The patient was made to understand her name and initial will not be published and all efforts will be made to conceal her identity. However, anonymity will not be completely guaranteed.

References

1. Legbo NG. Necrotizing Fasciitis: A comparative analysis of 56 Cases, J. Natl. Med. Assoc. 2005; 97(12): 1692 - 1697.
2. Adoga AS, Otene OO, Yiltok SJ, Adekwu A. cervical necrotising fasciitis: case series review of literature. Niger J Med 2009 Apr-Jun;18(2):203-207.
3. Bender ST, Ganz M, Mertens PR, Gross C. Bilateral non-contiguous necrotizing fasciitis of the lower extremities. Clin Case Rep. 2023 Jan 19;11(1):e6873.
4. Lakhani MA, Narsinghani U, Kumar R. Necrotising fasciitis of the abdominal wall caused by Serratia Mercescens. Infect Dis Rep. 2015 Apr 15:7(2):5774.
5. Lee MH, Vtto SS, Read-Fuller AM, Reddy LV. Necrotising fasciitis of the scalp stemming from odontogenic infection. Proc(Bayl Univ Med Cent). 2019 Nov 1;33(1):110-112.
6. Islam S, Aziz I, Shah J, Naraynsingh V, Hamarayan P. Necrotizing fasciitis of the breast requiring a life-saving mastectomy: A case report and literature review. 2021; Cureus 13(11): e19886. DOI 10.7759/cureus.19886
7. Abur PP, Yusufu LM, Odigie VI. Necrotizing fasciitis of the breast in Ahmadu Bello University Teacing Hospital, Zaria, Northwestern Nigria. Arch Med Surg[serial online]2019[sited 2023 Feb 15];4:7-9.
8. Maduba CC, Nnadozie UU. Breast necrotizing fasciitis following stillbirth managed with nipple areola conservation in a resource-poor setting: a case report. J. Surg. Case Rep. 2020;2:1-3.
9. Joury A, Mahendra A, Alshehri M, Downing A. Extensive necrotising fasciitis from Fournier's gangrene. Urol Case Rep. 2019 Jun 9;26:100943.
10. Favre-Rizzo J, Santana-Cabrera L, Femandez-Hermandez EL, Escot CR. Post traumatic perineal necrotising fasciitis. Int J Crit Illn Inj Sci. 2013 Oct;3(4): 285-286.
11. Yaji P, Bhat B, Harish E. Primary necrotising fasciitis of the breast: case report and brief review of literature. Journal of Clinical and Diagnostic Research: JCDR. 2014;8(7):ND01-ND02.
12. Britto LML, Brasilino MCB, Souza THSC, Monteiro MN, Oliveira SFM, Cobucci RN. Rare postpartum primary necrotizing fasciitis of the breast following mastectomy: case report. Mastology. 2018;28(4):244-247