

Primary Necrotising Fasciitis of the Breast: Case Report and Brief Review of Literature

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ABSTRACT

Necrotizing fasciitis is a rapidly spreading progressive infection of the fascia with necrosis of the subcutaneous tissues. Primary necrotising fasciitis of the breast is extremely rare and hence we report the case of a 55-year-old woman presenting to our hospital with primary necrotising fasciitis of the breast in a state of systemic septic shock. She was admitted in surgical intensive care unit and treated with resuscitation, intravenous antibiotics and aggressive debridement. We discuss the details of the case, our treatment approach, the outcome and also briefly review the literature.

Keywords: Breast gangrene, Necrotising fasciitis, Polymicrobial infection

CASE REPORT

A 55-year-old postmenopausal woman brought to emergency department of our hospital with history of progressive pain and swelling in the left breast since last one week. She also had high grade fever since the onset of pain and swelling. There was no history of any trauma. She is a known diabetic since last 4 yrs and she was diagnosed to be hypertensive 6 months back. She was regularly taking her anti-diabetic and anti-hypertensive medications. She visited a clinic at her local place and was treated on outpatient basis before being referred here as her condition deteriorated.

On examination the patient was febrile, drowsy and dehydrated. Pulse- 140/min, BP- 80/46 mm Hg, Respiratory rate- 32/min. Local examination showed foul smelling extensively sloughed out outer part of the breast including nipple areola complex and the infection was also extending into the left arm [Table/Fig-1]. Systemic examination of cardiovascular and respiratory system were normal. Her clinical picture indicated that she was in septic shock secondary to the necrotising fasciitis of the left breast. Investigations revealed Haemoglobin- 9mg/dl, total leucocyte count- 28,000/cu.mm, Urea – 69mg/dl and creatinine – 2.1mg/dl. Chest X-ray was normal. Her serum electrolytes were deranged and liver enzymes elevated. After primary resuscitation with intravenous fluids, broad spectrum antibiotics (piperacillin and tazobactam with metronidazole) and other supportive measures, her BP was 100/60 mm Hg and her urine output was about 300ml in 6hrs indicating adequate correction of dehydration. She was taken up for emergency surgery and adequate debridement comprising almost left mastectomy was done [Table/Fig-2] removing all the necrotic tissues of the breast including the deep fascia of the breast and the deep fascia of proximal part of left

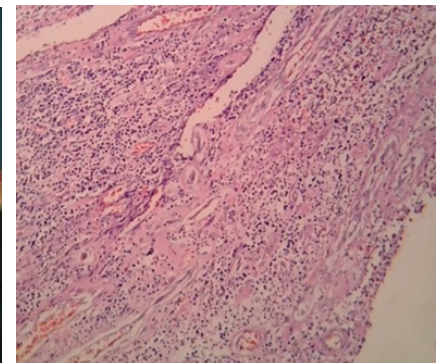
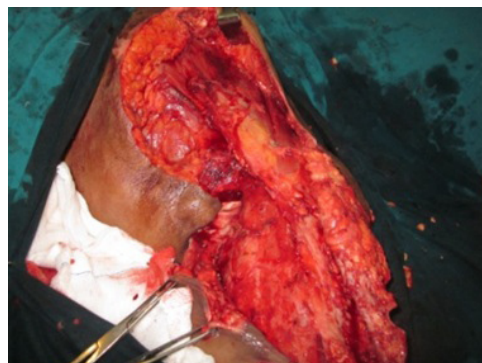
upper arm. On the 2nd day of admission the patient continued to be drowsy and her Pulse- 124/min and BP was 100/64 mm Hg. She was maintaining her blood pressure without any inotropic support. Her haematological investigations did not show any marked improvement. Urea, creatinine, electrolytes remained deranged. She continued to receive antibiotics and supportive measures in ICU. The wound culture was reported as polymicrobial growth. A second culture swab taken 48hrs after admission was reported as *E.Coli* and *Pseudomonas* which were resistant to many of the commonly used antibiotics. Blood culture showed no organisms. The patient succumbed to the severe sepsis on the third day after admission. Histopathology was reported as exuberant inflammatory granulation tissue [Table/Fig-3] with suppurative necrosis of connective tissue fascia [Table/Fig-4] confirming the diagnosis of necrotising fasciitis.

DISCUSSION

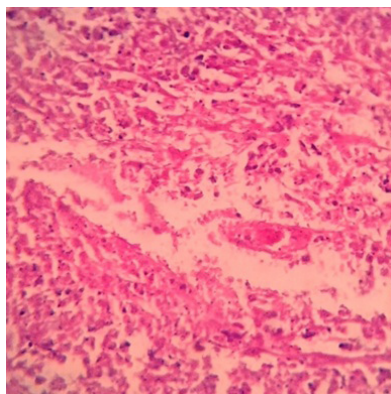
Necrotising fasciitis was first defined by Wilson in 1952 as necrosis of the fascia and subcutaneous tissue with sparing of the muscle [1]. Necrotizing fasciitis is a rapidly spreading infection characterised by widespread necrosis of the subcutaneous tissue and fascia with associated systemic toxicity and extending along fascial planes [1,2]. Patients susceptible to this infection include those with advanced age, chronic renal failure, peripheral vascular disease, and diabetes mellitus [3].

Although, it can affect any part, the sites commonly affected are extremities, scrotum (Fournier's gangrene) and perianal region [3].

Primary necrotising fasciitis of the breast is a rare entity. Shah et al., [4] reported the first case of necrotising fasciitis of breast in the year 2001. Since then only few cases have been reported in world



[Table/Fig-1]: Necrotising fasciitis of left breast extending to left arm **[Table/Fig-2]:** Wound after debridement **[Table/Fig-3]:** Histopathology (H&E, 10X) showing exuberant inflammatory granulation tissue



S. no	Author	Year	Salient features of the case	Treatment and Disease outcome.
1	Rajakannu M et al., [2]	2006	Necrotising fasciitis mimicking inflammatory carcinoma of the breast in a post menopausal women	Mastectomy was done. Patient recovered.
2	Venkatramani V et al., [5]	2009	Necrotising fasciitis of breast in a HIV positive middle aged women.	Mastectomy was done. Patient recovered. She was started on her anti-retroviral therapy subsequently.
3	Vishwanath G et al., [6]	2011	Necrotising fasciitis in a lactating women presenting in septic shock	Mastectomy was done. Patient recovered. Skin grafting of the wound done subsequently.
4	Present case	2014	Necrotising fasciitis of breast in a post menopausal, diabetic women presenting in septic shock.	Wide debridement was done. Patient died on 2nd post operative day.

[Table/Fig-4]: Histopathology (H&E, 40X) showing suppurative necrosis of connective tissue fascia **[Table/Fig-5]:** Salient features of the cases

literature. To the best of our knowledge three cases have been reported from India. We describe the salient features of these cases [Table/Fig-5].

As evident from the above published reports, Necrotising fasciitis of the breast affects lactating women and postmenopausal women. Necrotising fasciitis of the breast can also be misdiagnosed as Inflammatory Carcinoma, Cellulitis or Breast abscess [2,7].

Diagnosis is based on clinical examination showing signs of inflammation. However, because of thicker tissue between deep fascia and breast skin, cutaneous signs may not be apparent until the disease is well advanced [7,8]. So a high index of suspicion is necessary for timely diagnosis and prompt treatment of this disease. Diagnostic adjuncts like ultrasound and MRI are helpful in early recognition of the disease.

The treatment is mainly aggressive surgical debridement and broad spectrum antibiotics [8] apart from resuscitative measures from sepsis and shock. If detected early, breast salvage is almost always possible, whereas in extensive disease mastectomy may be necessary. The aim of the surgery must be to remove all infected tissue at the first debridement. Thorough, debridement should be done and deep fascia must be excised as much as feasible. A second look surgery may be planned after 24-48hrs depending on patient's clinical situation [7,9].

CONCLUSION

1. Although necrotising fasciitis of the breast is very rare, the outcome of this condition could be rapidly fatal.
2. Early diagnosis and radical debridement can potentially cure this otherwise fatal disease.
3. A high index of suspicion by practicing surgeons and clinicians could help diagnose the disease early and in initiating the treatment.

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