

## A right breast gangrene: A rare breast disease

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### ABSTRACT

Breast gangrene is a very rare disease and only a few cases have been reported in the Indian literature. Here, we present the case of a 70-year-old married female presented with complaints of pain and blackish discoloration in the right breast for 3 days. The surgery was planned on the same day with incision and drainage. Intraoperative findings were suggestive of sloughed and necrosed underlying tissue. The wound was left open and the daily dressing was planned. Then, wound closed. The patient was discharged on the 7<sup>th</sup> post-operative day. Surgeons should be aware of such ailments because breast gangrene is very rare.

**Key words:** Black breast, Breast conservative surgery, Breast disease, Breast gangrene

**B**reast gangrene is a very rare disease [1] and only a few cases have been reported in the Indian literature [2]. Most of the cases reported in the Indian literature corresponds to necrotizing fasciitis of the breast and generally ended up with mastectomy. Only a few cases were managed by the breast conservative approach. Gangrene of the breast can be idiopathic or secondary to some causative agent. The diagnosis of breast gangrene can be delayed as most patients can present as cellulitis or abscess. Its medicosurgical management is an emergency [3].

### CASE REPORT


A 70-year-old female presented with complaints of pain and blackish discoloration in the right breast for 3 days. As per the patient, blackish discoloration of the right breast was sudden in onset, initially localized to the upper outer quadrant of the right breast, then progressively increased in size, and involved the whole breast up to the supraclavicular margins and inframammary fold. There was a history of recently diagnosed diabetes mellitus (DM) (controlled blood sugar) and hypertension with no other significant medical, surgical history, or trauma. History of occasional smoking and alcohol addiction was present.

On examination, vitals were stable with a blood pressure of 128/74 mmHg, pulse rate of 74/min, and afebrile. Local

examination revealed blackish discoloration of the right breast extending from the inframammary fold till the supraclavicular region and from the lateral border of sternum till the anterior axillary fold (Fig. 1).

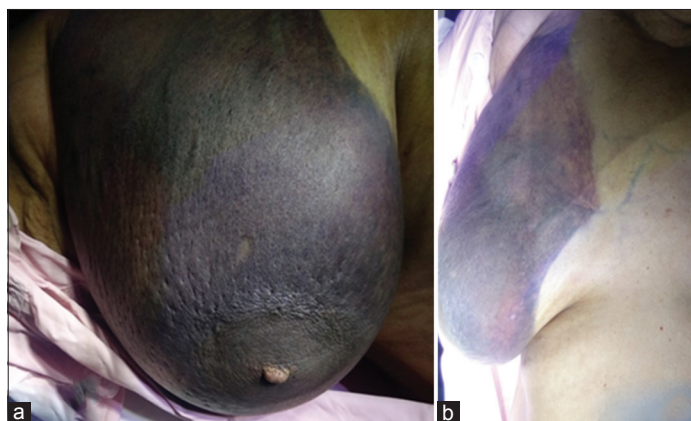
Ultrasound was suggestive of breast abscess localized in the upper-outer quadrant in the area around 5×4 cm in size with gangrene. Routine blood investigations were done and found within normal limits. The chest X-ray was normal. Pus culture report was sterile. Histopathological examination showed hematoma of the breast.

The surgery was planned on the same day with incision and drainage. Intraoperative findings were suggestive of sloughed and necrosed underlying tissue, removal of nipple areola complex (Fig. 2). The wound was left open and the daily dressing was planned. In post operative periode skin blacking not increased and it recovered. The second debridement's done after 4 days and the third debridement after 9 days, then healthy granulation tissue appears. Secondary closure of the wound was done and breast tissue was conserved as much as possible. The further post-operative course showed miraculous regression of most blackened skin discoloration to normal. The post-operative course was uneventful (Fig. 2). The patient was discharged on the 7<sup>th</sup> post-operative day and advised to follow-up in after 7 days. The sutures were removed on the 14<sup>th</sup> post-operative day and discharged in the 15<sup>th</sup> day. The suture line remained healthy on inspection.

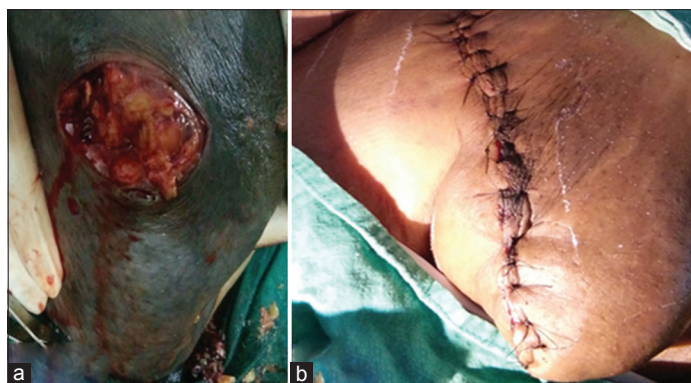
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**Figure 1: Pre-operative images showing right breast with blackish coloration. (a) Front view; (b) side view**



**Figure 2: (a) Incision and drainage and (b) post-operative image**

## DISCUSSION

Breast gangrene is a rare disease [1]. The rarity of gangrene of the breast is not mentioned in most of the recent textbooks or journals [4]. The nature of this disease is obscure and remains to be uninvestigated and undiscovered. Breast gangrene is usually unilateral and rarely can be bilateral. Gangrene is usually preceded by mammary mastitis or breast abscess or without any mastitis. It is coagulative necrosis or dry type of necrosis.

Breast gangrene is reported with DM, trauma, thrombophlebitis, puerperal sepsis, pregnancy, lactation, beta-hemolytic streptococci infection, use of anticoagulant therapy, or carbon monoxide poisoning, and others [1,5-9]. Recently, it is seen with HIV infection [10]. Sometimes, it can be idiopathic or after taking a core biopsy of the breast or can occur after surgery [11]. In idiopathic form, it presents with mammary pain with no antecedent history of trauma or infection. A spontaneous occurrence of the breast gangrene of unknown etiology was reported by Cutter in his case of apoplexy of the breast [12]. Spontaneous infarction of physiologically hyperplastic breast tissue with sparing of overlying skin mimicking as a breast tumor has been reported to occur in pregnancy and lactation [13,14].

In our case, there was no oral contraceptive intake or any other significant drug ingestion, or any evidence of thromboembolic events present in the patient. The etiology of the gangrene of

breast was likely to be associated with diabetes. In diabetes hyperglycemia, the risk for infection and increased vascular atherosclerosis contributes to the increased susceptibility to gangrene.

A sequence of events starts from mammary mastitis followed by black ecchymosis of the dermal abscess. This necrosis always starts in the peripheral part of the skin. Gangrene spread in all directions and rapidly evolves into a black patch and finally turned into eschar at the end. Sometimes, it goes into underlying tissue, fat lobules, and glandular tissue of the breast where it presents as necrotizing fasciitis.

Evidence of venous occlusions was documented by Hughes [14]. Microthrombi may be a cause of this necrosis [15]. In diabetic patients, breast gangrene and extensive thrombosis are evident in the subcutaneous vessels. In this case, antibiotics do not reach the infected regions in sufficient quantity to be effective [16]. In hemorrhagic type breast gangrene, once gross tissue necrosis or secondary infection occurs, the biopsy becomes non-specific and non-diagnostic. Mixed anaerobic and aerobic microorganisms are often responsible for the gangrene of the breast [2].

Successful surgical intervention in the form of wide local excision of the gangrenous breast with proper toileting tissue along with broad-spectrum antibiotics followed by reconstructive procedures should be performed. Serial debridement is required in some patients where there is large area involvement. Grafting is done in case of a large deficit. Sometimes, mastectomy is also required in extensive involvement.

## CONCLUSION

Gangrene of the breast is one of the rarest ailments of the breast. Most of such cases have been confused with cellulitis or necrotizing fasciitis of the breast. Surgeons should be aware of such ailments, their presentation, and management. Of all options, surgery remains the gold standard method of management.

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