Right breast ulceration and dystrophic calcification as a late sequela following postmastectomy radiotherapy

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DESCRIPTION
A woman in her 80s was referred urgently in view of an enlarging and tender right breast ulceration. There was no preceding injury. She had undergone a right mastectomy, axillary node dissection and radiotherapy for an invasive breast carcinoma 30 years ago. A medical history included hypertension and well-controlled rheumatoid arthritis—she had been prescribed oral Methotrexate for years with no reported side effects.

On examination, there was an extensive right breast ulcer with an indurated edge and central slough (figure 1). There was no rash or ulceration elsewhere and no involvement of the mucous membranes. Differential diagnoses were recurrence of right breast malignancy, atypical infection, pyoderma gangrenosum and methotrexate induced cutaneous ulceration.

A deep incisional biopsy revealed marked inflammation, focal calcification and ulceration. Tissue culture was positive for Streptococcus anginosus and anaerobes and she was commenced on antibiotics according to the sensitivities. Laboratory studies were unremarkable, including Antinuclear Antibody (ANA), complement and Antineutrophil Cytoplasmic Antibody (ANCA) levels. Ultrasound and CT scans of the chest, abdomen and pelvis confirmed heavy calcification and ulceration extending to the inferolateral margins of the pectoralis major. There was no evidence of lymphadenopathy or metastases. A diagnosis of dystrophic calcification and ulceration post radiotherapy was made, and she was managed conservatively due to a paucity of research evidence and poor wound healing. It is important for clinicians to consider the diagnosis of dystrophic calcification and ulceration as a delayed presentation of radiotherapy as this can occur years following its completion.

Radiotherapy is one of the mainstay treatments for breast malignancies and the incidence of adverse events has reduced considerably with advances in radiation delivery techniques. These complications can range from diffuse skin thickening and oedema in early stages to fat necrosis, fibrosis and dystrophic calcification months to years following completion of radiotherapy.1 2

It is postulated that radiation induced dystrophic calcification is due to chronic inflammatory changes and hypoxia, resulting in a dysregulation of intracellular calcium concentration in damaged tissues.3 This leads to increased calcium, osteoblasts and consequent calcification.

Learning points
- Consider atypical infections and malignancy in patients who present with right breast ulceration.
- Subcutaneous dystrophic calcification and ulceration of the breast can occur as a delayed presentation years following radiotherapy for breast carcinoma.
- The risk of calcification is higher in larger radiotherapy doses and overlapping fields.

Images in...

Figure 1 Right breast ulceration with surrounding indurated erythema and central slough.
Images in...

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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