Necrotizing mastitis caused by calciphylaxis

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A 53-year-old Moroccan woman presented at our outpatient clinic with tenderness and redness of the right breast. For 3 years she had been peritoneal dialysis-dependent, due to a left nephrectomy because of nephrolithiasis and diabetic nephropathy. The peritoneal dialysis treatment had been unremarkable. The patient’s medical history revealed a 9-year history of type 2 diabetes mellitus with multiple comorbidities including angina pectoris and epilepsy due to an ischaemic cerebrovascular accident. She had been treated with insulin for the previous 4 years.

Because the redness of the right breast progressed to ulceration, the dermatologist did a skin biopsy of the breast, which revealed an unspecified ulcer. A mammogram demonstrated the presence of vascular calcifications in both breasts. Mastitis carcinomatosis, tuberculous mastitis and vasculitis were excluded. Coumarin-induced skin necrosis was unlikely, because she did not use coumarin derivates.

In the following month, an ulcer also developed in the left breast. She was admitted to the hospital because of intolerable breast pains. Physical examination revealed an obese female (body mass index of 35 kg m²). The left and right breasts had necrotic ulcerations (Figure 1). Furthermore, her left middle fingertip was painful and the fingertip was necrotizing, probably resulting from punctures for blood glucose checking. Laboratory investigations showed an increased white blood cell count (13 x 10⁹/l) and elevated serum levels of C-reactive protein (171 mg/dl). Markedly elevated levels of calcium (2.7 mmol/l), phosphorus (2.0 mmol/l) and PTH (145 pmol/l) were found.

We concluded that the most likely diagnosis was necrotic breast lesions due to calciphylaxis. In order to improve the management of the calcium phosphorus homoeostasis and to reduce the secondary hyperparathyroidism, a three and a half gland parathyroidectomy was performed. As the breast lesions became secondarily infected a simple bilateral mastectomy was performed. Microscopic examination showed necrotizing inflammation in both breasts. In one slide, calcium deposits were observed around small blood vessels (Figure 2). Despite these procedures, the patient’s clinical condition deteriorated because of persistent wound infections. In addition she developed a stroke which was complicated by epileptic seizures and an aspiration pneumonia.

Although we managed to keep the serum phosphorus and calcium levels in the normal range, she developed more necrotizing ulcerations on her hips and legs. Intravenous sodium thiosulfate administration has been used successfully in the treatment of calciphylaxis [1]. Therefore, we decided to treat our patient with sodium thiosulfate three times per week intravenously. Unfortunately, this treatment did not result in a reduction of the skin ulcerations. Subsequently, our patient died of sepsis due to wound infections.

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Necrotizing mastitis caused by calciphylaxis is very rare. The pathogenesis of calciphylaxis is still unknown and, as illustrated in our case, its prognosis remains poor [2].

Conflict of interest statement. None declared.

References


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Fig. 2. Calcium deposits around small blood vessels in the breast parenchyma.