J R Coll Physicians Edinb 2020; 50: 32–4 | doi: 10.4997/JRCPE.2020.108 CASE REPORT

Scleroedema of Buschke in conjunction with ovarian carcinoma: rare association of a rare disease

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Abstract

Scleroedema is a rare clinical condition characterised by diffuse woody induration of skin commonly associated with diabetes mellitus, infections and monoclonal gammopathy. Its association with ovarian malignancy has not been reported. We report a case of a 56-year-old female with rapidly progressing skin thickening of limbs, face and trunk for 1 year and abdominal distension for 3 months. Patient had thickened skin, mask-like facies and ascites on examination. Atypical cells were seen in ascitic fluid. Contrast-enhanced computerised axial tomography scan of abdomen was suggestive of ovarian malignancy. Markers for autoimmune disorders were negative. CA 125 was elevated. Other causes of sclerodermiform-like syndrome were ruled out. Histopathology of skin biopsy was definitive of scleroedema. Diagnosis of scleroedema associated with ovarian malignancy was made based on temporal association, exclusion of other causes and histopathological findings. To our knowledge this is the first reported case of scleroedema associated with ovarian tumour.

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Keywords: Buschke's scleroedema, carcinoma, collagen

Financial and Competing Interests: No conflict of interests declared

Introduction

Scleroedema is also known as Buschke disease, named after a German dermatologist who first described this clinical entity.[1] It is a rare clinical condition characterised by diffuse woody induration of skin that can have either spontaneous resolution or can be progressive. It is commonly associated with diabetes mellitus, infections, such as streptococcus, and monoclonal gammopathy.[2] Other rare causes include HIV infection, rheumatoid arthritis, Sjögren's syndrome, carcinoma of gall bladder, insulinoma and primary hyperparathyroidism.[3,4] The diagnosis is primarily based on history, clinical examination and characteristic histopathological findings on skin biopsy along with exclusion of other causes. To our knowledge, scleroedema has not been reported in association with ovarian malignancy. We report here the first case of scleroedema associated with ovarian tumour.

Case presentation

A 56-year-old female presented to the Department of Medicine with progressive thickening of skin for 1 year and abdominal distension for 3 months. The skin thickening began 1-year ago and had rapid progression in the last 3 months involving the limbs, face and trunk. Patient had difficulty in opening their mouth for 3 months along with loss of appetite and loss of 5 kg weight. Patient had undergone hysterectomy for fibroids 10 years previously. There was no history suggestive of joint pain or swelling, loss of hair, recurrent abortions or bleeding from any site. Patient was not on any medication.

The physical examination showed diffuse skin thickening predominantly on abdomen, face and limbs (Figure 1). The modified Rodnan skin thickness score was 29 (range 0–51). Abdominal examination revealed ascites. The rest of the clinical examination was normal.

Laboratory tests revealed microcytic normochromic anaemia with haemoglobin of 9.3 g/dl and erythrocyte sedimentation rate of 34 mm/hour. The patient's kidney and liver function tests, urine examination, thyroid profile, Hba1c, serum electrolytes, anti-streptolysin-O titre and chest X-ray were found to be normal. Tumour markers were negative, except CA 125 (cancer antigen), which was elevated significantly (197.23U/ml). Antinuclear antibodies and anti-Scl 70 (scleroderma antibody) were negative along with other markers for autoimmune disorders. Work up for paraproteinaemia, which included total serum protein, serum and urinary protein electrophoresis, and bone marrow examination, was carried out and found to be normal. The ascitic fluid examination revealed serum ascitic albumin gradient of 0.4 gm/dl and 400 cells/mm^3 with 87% lymphocytes and 10% mesothelial cells. The ascitic fluid smear showed few atypical cells with

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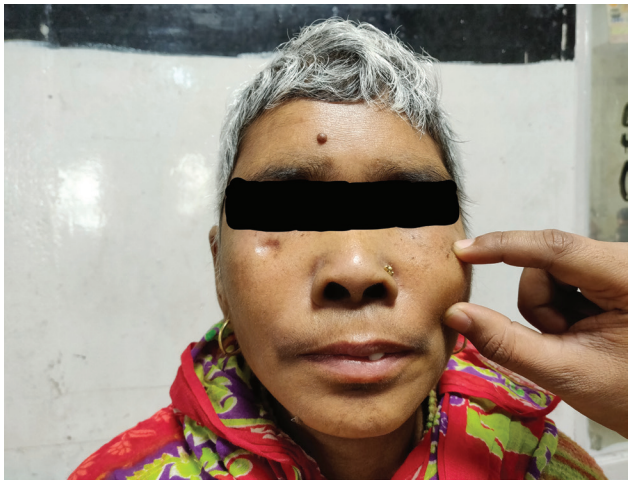
Figure 1 Thickened skin of the face



high neutrophil:cytoplasm ratio, prominent nucleoli and a moderate amount of cytoplasm.

Epidermis was normal on skin biopsy. Upper dermis showed mild perivascular lymphohistiocytic infiltrate. The reticular dermis was thickened with broadened and hyalinised collagen fibres separated by clefts/clear spaces on haematoxylin and eosin stain (Figure 2). Masson's trichrome staining showed thickened reticular dermis with broad collagen fibres (green) separated by clear spaces (Figure 3). Staining with Alcian blue demonstrated presence of dermal mucin (blue) in clear spaces interspersed between collagen bundles suggestive of scleroedema (Figure 4).

The patient underwent contrast-enhanced computerised axial tomography scan of the chest and abdomen that revealed a heterogeneously hypo- to iso-intense (15–35 HU) solid cystic lesion in the left adnexa. The left ovary was not seen separately. The solid components within the mass show heterogeneous enhancement on post-contrast scan (45–50 HU) suggestive of ovarian malignancy.

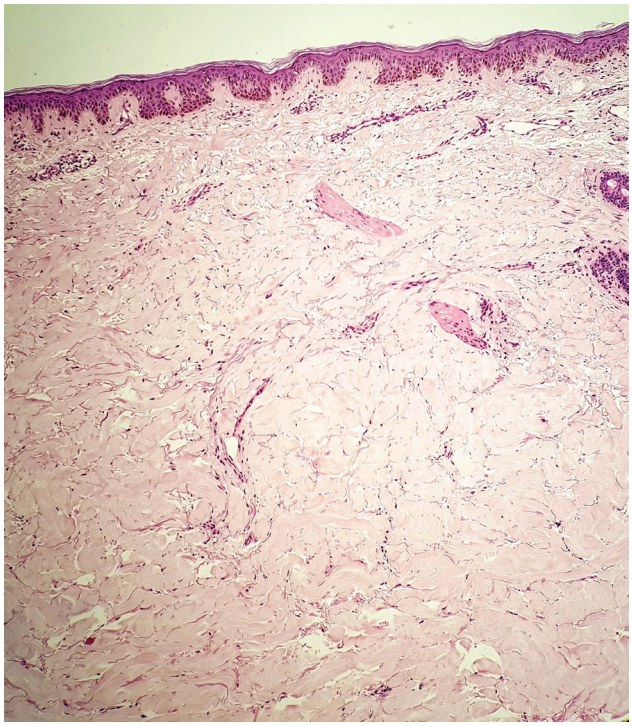
Thus, a diagnosis of scleroedema associated with ovarian malignancy was made based on the temporal association, absence of markers of primary autoimmune disorders, exclusion of other causes and definitive histopathological findings. The patient was referred to the oncology department for further management.

Discussion

We have presented a case of rapidly progressing thickening of skin associated with concomitant ovarian malignancy. Various causes of thickened skin are known, including graft vs host disease, amyloidosis, hypothyroidism, biliary cirrhosis, eosinophilia myalgia syndrome, systemic sclerosis, as well as use of certain chemotherapeutic drugs.[5]

The disease is known to affect all races without predilection for any gender. The various classes described include:

Figure 2 Photomicrograph showing normal epidermis. Upper dermis shows mild perivascular lymphohistiocytic infiltrate. The reticular dermis is thickened with broadened and hyalinised collagen fibres separated by clefts/clear spaces. Normal dermal appendages are seen in the right corner of the mid dermis (haematoxylin and eosin; 100×)



1) diabetes mellitus associated, the most commonly reported and is slowly progressive 2); infections associated, onset is usually sudden and streptococcus is the most common infection implicated; and, 3) monoclonal gammopathy associated, the least common and can be associated with multiple myeloma, waldenstrom macroglobulinaemia or monoclonal gammopathy of unknown significance.[6] This class has slow onset and progression with very little chance of spontaneous recovery. Other rare causes include other malignancies, HIV infection and hyperparathyroidism. A case of scleroedema associated with carcinoma of gall bladder has been reported by Manchanda et al.[7]

The exact pathogenesis is not known. It is believed that in diabetics, altered collagenase activity along with glycosylation of collagen causes excessive deposition of mucin and collagen.[8] Another hypothesis involves increased collagen production secondary to streptococcal hypersensitivity or paraproteinaemia.[9]

The clinical course of scleroedema can be highly variable ranging from spontaneous recovery to persistent progressive illness. Diagnosis is made on the basis of medical history, clinical examination, exclusion of other causes and characteristic histopathological findings on skin biopsy, which includes normal epidermis and thickened reticular dermis with swelling of collagen bundles separated by mucin deposition.[10] There are no definitive guidelines for scleroedema management and management is mainly based on expert opinions. Underlying cause must

Figure 3 Photomicrograph showing thickened reticular dermis with broad collagen fibres (green) separated by clear spaces (Masson's Trichrome; 100×)

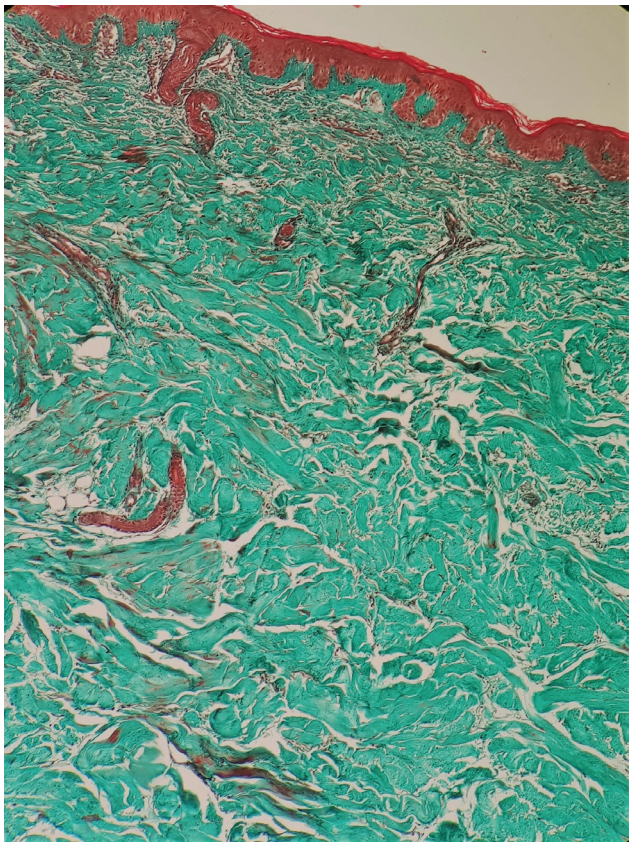
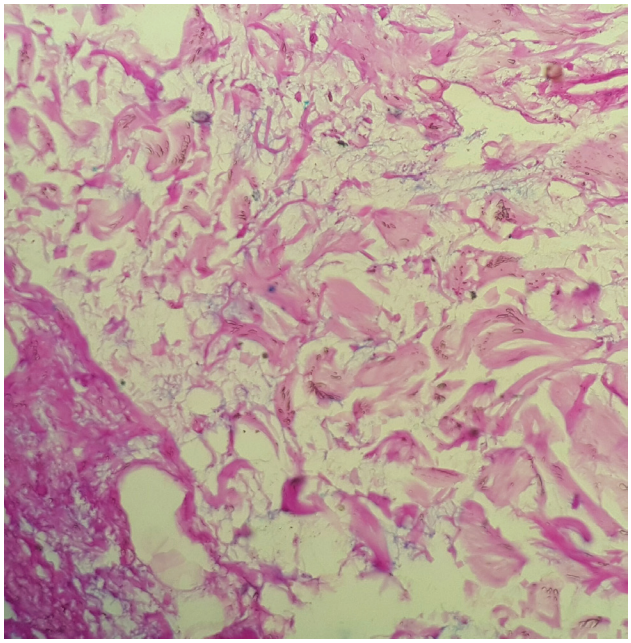


Figure 4 Photomicrograph showing part of reticular dermis with thick collagen fibres and presence of dermal mucin (blue) in clear spaces interspersed between collagen bundles (Alcian Blue; 400×)



be identified and treated. Of the available modalities of treatment, phototherapy using ultraviolet A1 is preferred.[11] Various immunosuppressants, such as glucocorticoids, cyclosporine and methotrexate, have also been used with limited success.[12] Prognosis of patients with scleroedema is dependent on the class to which it belongs. Mortality in scleroedema is rare and has occurred owing to respiratory or cardiac involvement.[13,14]

Conclusion

The present case highlights a diagnostic dilemma as it is imperative to identify and evaluate such a presentation of scleroedema as it can be a marker of underlying systemic illness or malignancy. An early diagnosis and identification of the cause may help in reducing the morbidity and improve the quality of life.

Informed consent

Written informed consent for the paper to be published (including images, case history and data) was obtained from the patient/guardian for publication of this paper, including accompanying images.

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