

Progressive induration of one leg

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A woman presents with a history of progressive enlargement of an erythematous plaque, which had started above her ankle. What is this plaque and how can it be treated?

A 54-year-old woman gave a two-year history of progressive enlargement of an erythematous plaque, which had started as a tender area above her left medial ankle and now extended over the medial aspect of her calf (Figure 1). The area felt indurated and had a firm, rounded upper border. Varicosities were evident over the ankle and medial calf. A deep skin biopsy showed extensive sclerosis of the dermis and subcutis. There were increased interstitial fibroblasts, patchy lymphocyte infiltration, clusters of vessels, and haemosiderosis. The subcutaneous tissue was largely replaced by collagen (Figure 2). Direct immunofluorescence of the tissue demonstrated perivascular fibrin cuffs (Figure 3).

Diagnosis

The differential diagnosis of an indurated plaque at this site includes the following.

- **Recurrent cellulitis** presents with repeated acute episodes of tender erythema, oedema and fever, which may be followed by diffuse lymphoedema that is not restricted to the medial calf.

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- **Morphoea** or localised scleroderma is associated with ivory-coloured indurated plaques with a violaceous periphery. It may extend into the deep tissue including the fascia. There may be multiple plaques or linear areas of sclerosis, which can extend onto the feet and toes. Skin biopsy reveals hyaline sclerosis of collagen with perivascular and interstitial infiltrates of lymphocytes.
- **Erythema nodosum** is associated with multiple tender nodules which are usually bilateral. Rarely, single chronic nodules may be seen that have an indurated annular rim. Skin biopsy shows granulomatous inflammation in the subcutaneous septa, and the dermis is spared.
- **Lipodermatosclerosis** is the correct diagnosis. In the acute stage, a tender erythematous plaque may develop over the medial ankle, and over the ensuing months to years this progresses to a woody indurated plaque that is constricted at the ankle. Ulceration may occur over the medial ankle.

Most individuals have associated venous disease that can be demonstrated by Doppler ultrasonography or dynamic plethysmography. The venous hypertension results in capillary proliferation and increased vascular permeability, culminating in leakage of fibrinogen that polymerises and undergoes progressive tissue sclerosis. Graded venous compression and leg elevation is helpful in reducing oedema. Fibrinolytic agents, such as oxpentifylline (Trental 400) 400 to 800 mg three times a day or stanozolol 2 to 4 mg twice a day, have been used to decrease the sclerosis. Some patients have needed ultrasound sclerotherapy or surgery to close incompetent venous perforators.

Keypoint

Lipodermatosclerosis is a distinctive process localised to the medial aspect of the lower leg and is usually associated with venous disease.

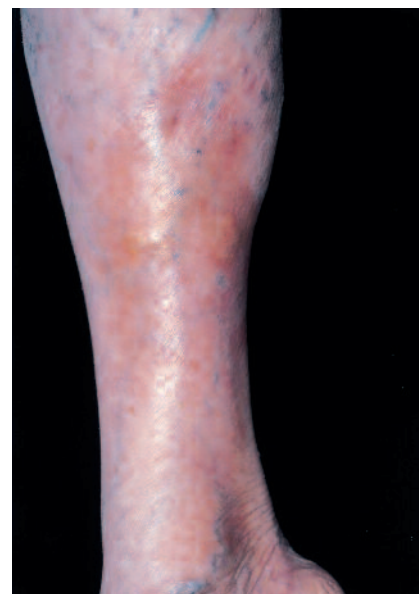


Figure 1. Sclerotic constriction of the leg above the ankle, with erythema and varicosities.

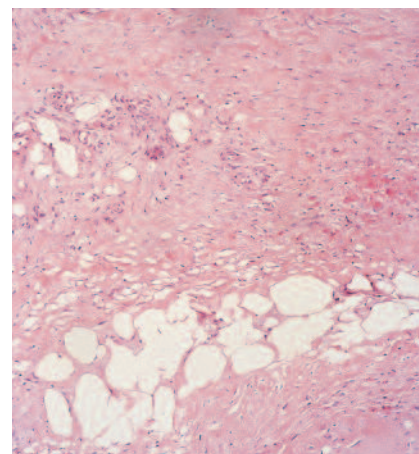


Figure 2. Skin biopsy revealing deep sclerosis with capillary proliferation, lymphocyte infiltration, and fat replacement by collagen.

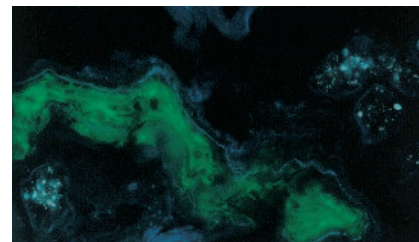


Figure 3. Pericapillary fibrin cuffs highlighted by immunofluorescence with antifibrin antibodies.