INITIAL CLINICAL PRESENTATION

The initial presentation is quite different in the diffuse and the limited cutaneous forms of the disease. In dcSSc, the interval between Raynaud's phenomenon and onset of other disease manifestations is typically brief (weeks to months). Soft tissue swelling and intense pruritus are signs of the early inflammatory "edematous" phase. The fingers, hands, distal limbs, and face are usually affected first. Diffuse skin hyperpigmentation and carpal tunnel syndrome can occur. Arthralgias, muscle weakness, fatigue, and decreased joint mobility are common. During the ensuing weeks to months, the inflammatory edematous phase evolves into the "fibrotic" phase, with skin induration associated with hair loss, reduced production of skin oils, and a decline in sweating capacity. Progressive flexion contractures of the fingers ensue. The wrists, elbows, shoulders, hip girdles, knees, and ankles become stiff due to fibrosis of the supporting joint structures. While advancing skin involvement is the most visible manifestation of early dcSSc, important and frequently clinically silent internal organ involvement develops during this stage. The initial 4 years from disease onset is the period of rapidly evolving pulmonary and renal damage. If organ failure does not occur during this period, the systemic process may stabilize.

Compared to dcSSc, the course of lcSSc is characteristically more indolent. In these patients, the interval between Raynaud's phenomenon and onset of manifestations such as gastroesophageal reflux, cutaneous telangiectasia, or soft tissue calcifications can be several years. On the other hand, scleroderma renal crisis and severe pulmonary fibrosis are uncommon in lcSSc. Clinically evident cardiac involvement and PAH develop in more than 15%. Overlap with keratoconjunctivitis sicca, polyarthritis, cutaneous vasculitis, and biliary cirrhosis is seen in some patients with lcSSc.

ORGAN INVOLVEMENT

RAYNAUD'S PHENOMENON

Raynaud's phenomenon, the most frequent extracutaneous complication of SSc, is characterized by episodes of reversible vasoconstriction in the fingers and toes. Vasoconstriction may also affect the tip of the nose and earlobes. Attacks are triggered by a decrease in temperature, as well as emotional stress and vibration. Typical attacks start with pallor, followed by cyanosis of variable duration. Hyperemia ensues spontaneously or with rewarming of the digit. The progression of the three color phases reflects the underlying vasoconstriction, ischemia, and reperfusion.

As much as 3–5% of the general population has Raynaud's phenomenon. In the absence of signs or symptoms of an underlying condition, Raynaud's phenomenon is classified as primary and represents an exaggerated physiologic response to cold. Secondary Raynaud's phenomenon can occur as a complication of SSc and other connective tissue diseases, hematologic and endocrine conditions, and occupational disorders, and can complicate the use of beta blockers and anticancer drugs such as cisplatin and bleomycin. Distinguishing primary versus secondary Raynaud's phenomenon presents a diagnostic challenge. Primary Raynaud's phenomenon is supported by the following: absence of an underlying cause; a family history of Raynaud's phenomenon; absence of digital tissue necrosis, ulceration, or gangrene; and a negative ANA test. Secondary Raynaud's phenomenon tends to develop at an older age (>30 years), is clinically more severe (episodes more frequent, prolonged, and painful), and is frequently associated with ischemic digital ulcers and loss of digits (Fig. 382-3). Nailfold capillaroscopy, where the cutaneous capillaries at the nail bed are viewed under a drop of grade B immersion oil using a low-power stereoscopic microscope, can be helpful in the evaluation of Raynaud's phenomenon. Primary Raynaud's phenomenon is associated with normal capillaries that appear as regularly spaced parallel vascular loops, whereas in patients with Raynaud's associated with SSc and other connective tissue diseases, nailfold capillaries are distorted with widened and irregular loops, dilated lumen, and areas of vascular "dropout." In addition to digits, cold-induced episodic Raynaud's-like vasospasm has been documented in the pulmonary, renal, gastrointestinal, and coronary circulations in SSc.

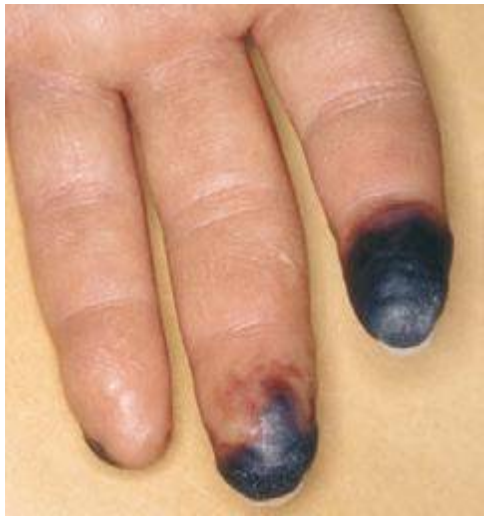

FIGURE 382-3 Digital necrosis. Sharply demarcated necrosis of the fingertip in a patient with limited cutaneous systemic sclerosis (SSc) associated with severe Raynaud's phenomenon.

SKIN FEATURES

While early-stage SSc is associated with edematous skin changes, skin thickening is the hallmark that distinguishes SSc from other connective tissue diseases. The distribution of skin thickening is invariably symmetric and bilateral. It typically starts in the fingers and then characteristically advances from distal to proximal extremities in an ascending fashion. The involved skin is firm, coarse, and thickened, and the extremities and trunk may be darkly pigmented. In some patients, diffuse tanning in the absence of sun exposure is a very early manifestation of skin involvement. In dark-skinned patients, vitiligo-like hypopigmentation may occur. Because pigment loss spares the perifollicular areas, the skin may have a "salt-and-pepper" appearance, most prominently on the scalp, upper back, and chest. Dermal sclerosis due to collagen accumulation obliterates hair follicles, sweat glands, and eccrine and sebaceous glands, resulting in hair loss, decreased sweating, and dry skin. Transverse creases on the dorsum of the fingers disappear (Fig. 382-4). Fixed flexion contractures of the fingers cause reduced hand mobility and lead to muscle atrophy. Skin thickening in combination with fibrosis of the subjacent tendons accounts for contractures of the wrists, elbows, and knees. Thick ridges at the neck due

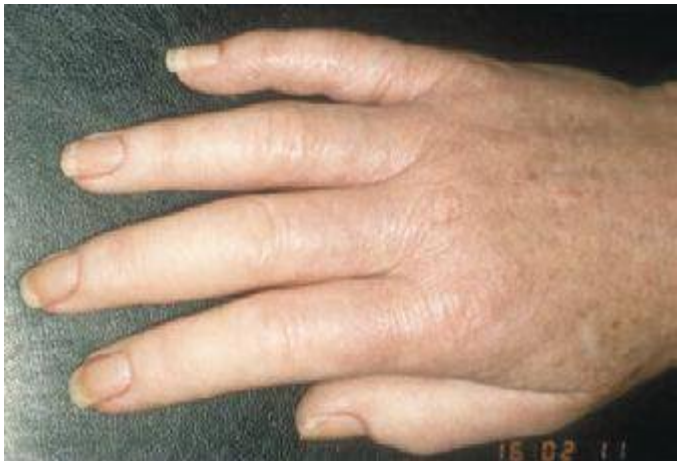

FIGURE 382-4 Sclerodactyly. Note skin induration on the fingers, and fixed flexion contractures at the proximal interphalangeal joints in a patient with limited cutaneous systemic sclerosis (SSc).