Case 5

A 63-year-old Thai woman from Patumthani

Chief complaint: Multiple red nodular rashes at mid abdomen for 1 year

Present illness: The patient developed multiple discrete skin color nodules at mid abdomen, upper chest and upper back over the course of 12-15 months. 3 years ago, she had Raynaud's phenomenon, esophageal dysmotility, myositis, pericardial effusion and interstitial lung disease. One year later, she had right-sided congestive heart failure secondary to pulmonary hypertension, and a progressive diffuse cutaneous sclerosis with poikilodermatous change. She had a mask-like face with constricted opening of the mouth. In addition, tightness and stiffness of the fingers with sclerodactyly and ulcerations of the fingertips had developed.

Past history: Secondary membranoproliferative glomerulonephritis from chronic hepatitis C viral infection

Personal history: unremarkable

Family history: unremarkable

Physical examination:

VITAL SIGNS: BT 37.2 C, BP 160/70 mmHg, PR 70/min, RR 16/min

GA: good consciousness, not pale, no jaundice

HEART: normal S1,S2, no loud P2, no murmur

LUNG: coarse crepitation both lungs

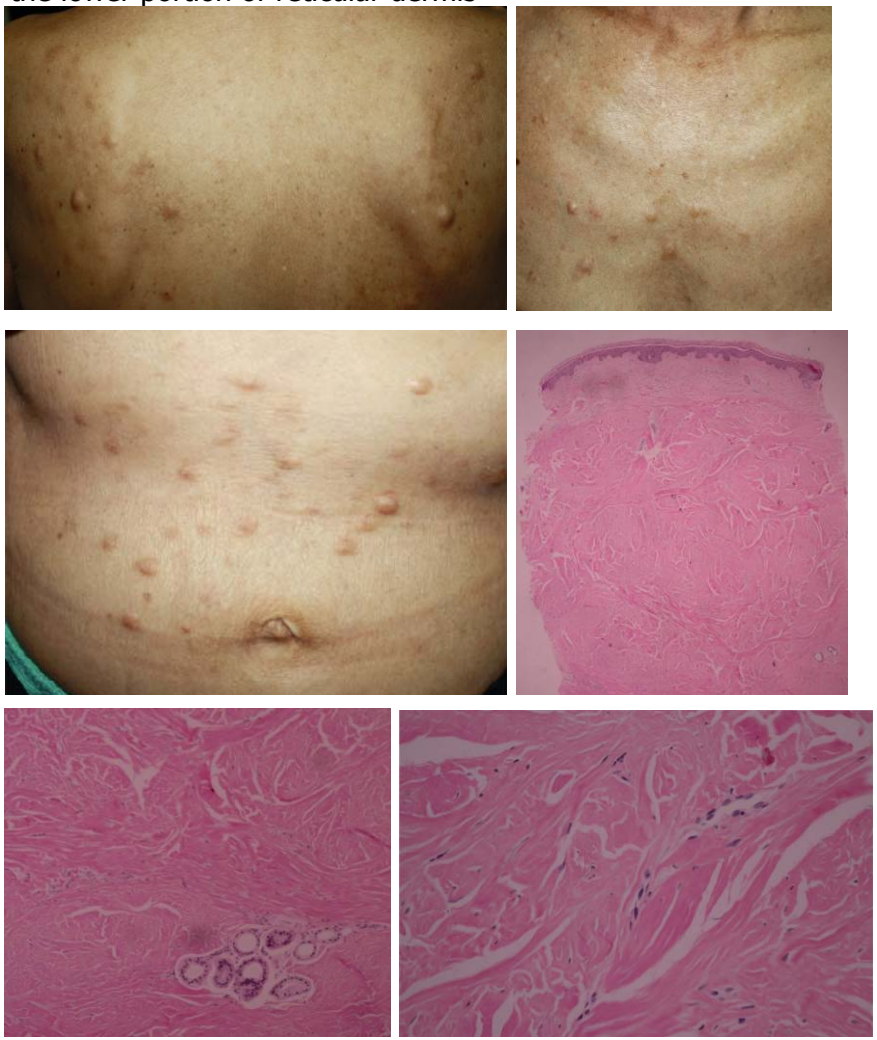
ABDOMEN: soft, not tender, liver 4 cm below right costal margin, span 14 cm, spleen not palpable, normoactive bowel sound

Skin examination:

- Diffuse sclerosis with mask-like appearance of face
- Multiple, firm, raised, non-tender, skin color nodules at upper chest, mid abdomen and upper back
- Sclerodactyly without digital pitted scar or ulceration

Histopathology: (S10-19216)

homogenized collagen bundles with scattered plump fibroblasts in the lower portion of reticular dermis



Investigation:
- Anti-Scl 70 postitive
- ANA, Anti dsDNA, Anti nRNP, anti Ro/La, anti Sm and anti Jo-1 all negative

Diagnosis: Progressive systemic sclerosis with nodular scleroderma

Treatment: Topical and intralesional ultrapotent corticosteroids for multiple sessions (dermovate cream apply twice a day/ Kenacort 5-10 mg intralesional injection/time), oral corticosteroids (prednisolone 7.5 mg/day), Calcium channel blocker (Nifedipine 15 mg/day), Antihypertensive agents; Valsartan 80 mg/day, Manidipine 20 mg/day, Omeprazole 20 mg/day, Beraprost (Donor 80 mcg/day)

Presenter: Wanjarus Roongpisuthipong

Consultant: Natta Rajatanavin

Discussion:

Several clinical forms of systemic and localized scleroderma are recognized. Among these form, nodular or keloidal variant is considered the rarest form.[1] Because of the unclear nature of nodular scleroderma, the terms "nodular scleroderma" and "keloidal scleroderma" are now used interchangeably. Some authors suggest that the term "*nodular/keloidal scleroderma*" should be restricted to those case with systemic involvement and cases of lesions without systemic involvement should be called nodular or keloidal "*morphea*".[2]

Nodular scleroderma (NS) is a fibrosing reaction that occurs as multiple, well-defined firm papules, nodules or plaques in patients with systemic or localized scleroderma.[3] These nodules have been reported in linear, local, and widespread on the chest, back, neck, and proximal extremities. The lesions can be asymptomatic or pruritic. NS has been reported in the context of both localized and systemic scleroderma. NS occurs more frequenctly in females in the third to fifth decade.[4] Those lesions might represent a keloidal response of the inflamed skin already involved in an active fibrotic process inherent to the disease, in patients who are genetically predisposed to keloid development, or in areas of the skin that shows a high predilection for keloid formation, such as the chest.[5] Some authors have suggested that acid-fast bacteria, organic solvents, or the hepatitis C virus may be the causative agents.[4] Cytokines especially transforming growth factor β (TGF β) may play an important role in the induction of fibrosis. TGF β has multiple functions including the stimulation of fibroblast proliferation and production of extracellular matrix (ECM) proteins such as collagen and tenascin, the chemotactic activity of macrophages and fibroblasts, downregulation of matrix metalloproteinsases and complemantary upregulation of proteinase inhibitors. Recently, connective tissue growth factor (CTGF) is selectively induced in fibroblasts after activation with the active form of TGF β.[3] The spectrum of dermatohistopathologic findings in NS include (1) keloid, (2) scleroderma, and (3) keloid and scleroderma.[4] Immunohistochemical studies reveal increasing in expression of ECM proteins tenascin and fibronectin. Fibronectin expression normalizes overtime with the termination of the inflammatory phase, both in hypertrophic scars and keloids, in contrast, long-lasting increasing in expression and persistent high level of tenascin was found only in systemic sclerosis but not in hypertrophic scar and morphea.[6]

A spontaneous regression of nodules seems unusual. Various therapeutic regimens for NS were attempted include systemic corticosteroids, nonsteroidal anti-inflammatory drugs, penicillin, cyclosporin and lately extracoporeal photochemotherapy and imatinib.[2]

Reference

1. Barzilai A, Lyakhovitsky A, Horowitz A , Trau H. Keloid-like scleroderma. Am J Dermatopathol 2003;25:327-30.
2. Kauer F, Simon JC , Sticherling M. Nodular morphea. Dermatology 2009;218: 63-6.
3. Yamamoto T, Sawada Y, Katayama I , Nishioka K. Nodular scleroderma: increased expression of connective tissue growth factor. Dermatology 2005;211:218-23.
4. Wriston CC, Rubin AI, Elenitsas R , Crawford GH. Nodular scleroderma: a report of 2 cases. Am J Dermatopathol 2008;30:385-8.
5. James WD, Berger TG, Butler DF , Tuffanelli DL. Nodular (keloidal) scleroderma. J Am Acad Dermatol 1984;11:1111-4.
6. Labandeira J, Leon-Mateos A, Suarez-Penaranda JM, Garea MT , Toribio J. What is nodular-keloidal scleroderma? Dermatology 2003;207:130-2.