Morphea with plasma cell neuritis

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ABSTRACT:

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Localized scleroderma (Morphea) is a rare fibrosing disorder of the skin. There are several subtypes. In adult, the circumscribed and generalized subtypes are predominant. The skin lesions present as the plaque on the trunk and extremities. Differential diagnosis includes atrophoderma of Pasini and Perini and systemic sclerosis. We report a case of 57 year-old-woman who initially presents with multiple asymptomatic sclerotic plaques on the trunk, abdomen, both forearms and legs without systemic symptoms. The clinical presentation and histopathologic findings support the diagnosis of morphea. The histopathology shows unusal dense inflammatory reaction with many plasma cells infiltrating the nerve. Therefore, the patient is diagnosed as "Morphea with plasma cell neuritis."

Key words: Morphea, plasma cell neuritis

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บทคัดย่อ :

สิรินภา ณรงค์ชัยกุล, วลัยอร ปรัชญพฤทธิ์, ปุณวิศ สุทธิกุลณเศรษฐ์ รายงานผู้ป่วยโรคหนังแข็งเฉพาะที่ซึ่งมีลักษณะจุลพยาธิเป็น PLASMA CELL NEURITIS วารสารโรคผิวหนัง 2557; 30: 283-289.

สถาบันโรคผิวหนัง

โรคหนังแข็งเฉพาะที่ (Morphea) เป็นโรคผิวหนังที่พบได้น้อยโรคหนึ่ง อาการทางผิวหนังมีได้หลายแบบ ที่พบบ่อยในผู้ใหญ่ คือ ชนิด circumscribed และ generalized morphea อาการทางผิวหนังมักมาด้วย ผื่นนูน ขาว แข็ง บริเวณลำตัว ท้อง แขนขา ซึ่งต้องแยกโรคกับโรคผิวหนัง atrophoderma of Pasini and Perini และ systemic sclerosis โดยอาศัยลักษณะทางคลินิก และ การตรวจทางพยาธิวิทยา เป็นเครื่องช่วยวินิจฉัยแยกโรค

ในรายงานนี้เป็นการนำเสนอผู้ป่วยหญิงไทยอายุ 57 ปี ซึ่งมาโรงพยาบาลด้วย ผื่นแข็งสีขาว บริเวณลำตัว ท้องและแขนขาสองข้าง ซึ่งได้รับการวินิจฉัย เป็นโรคหนังแข็งเฉพาะที่ โดยอาศัยลักษณะทางคลินิกและทางพยาธิวิทยา แม้อาการทางคลินิกผู้ป่วยจะเป็นโรคหนังแข็งเฉพาะที่ระยะท้ายแต่ลักษณะพยาธิวิทยายังคงพบ มีเซลล์ที่เกี่ยวข้องกับการอักเสบอย่างหนาแน่น โดยเฉพาะพบพลาสมาเซลล์จำนวนมากอยู่รอบเส้นประสาทลักษณะจุลพยาธิเช่นนี้พบได้น้อยในผู้ป่วยโรคนี้รายอื่นๆ

คำสำคัญ : Morphea, plasma cell neuritis

Case report

A 57-year old Thai woman, from Saraburi sought for medical treatment at The Institute of Dermatology presented with multiple whitish plaques on both forearms, abdomen and legs for10 years.

The lesions ,at first, had appeared as multiple asymptomatic whitish plaques on both forearms and abdomen and then turned into violaceous plaques which progressively spread onto both legs. ใส่เป็น asymptomatic. There was no history of fever, joint pain, dysphagia, dyspnea and photosensitivity. No Raynaud's phenomenon was complicated.

Physical examination:

The skin examination revealed multiple discrete well-defined erythematous to brownish sclerotic plaques on both forearms, abdomen and legs (figure 1). Neither sclerodactyly, Raynaud's phenomenon nor poor capillary refill was found.

Investigation

Histopathologic finding from the lesion on the right forearm area showed the homogenized thick collagen bundles throughout the dermis with lymphocyte and plasma cell infiltration around superficial and deep vascular plexuses and the nerve in the reticular dermis. No epidermal change was seen (figure 2).Other laboratory investigations including complete blood

count, liver function test, fluorescence antinuclear antibody test (FANA) and hepatitis profile were within normal limit.



Figure1 Multiple discrete well-defined sclerotic plaques on both forearms, and legs.

Discussion

Localized scleroderma (morphea) is a rare fibrosing disorder of the skin and underlying tissue. The incidence of localized scleroderma is 2.7 per 100,000 with a female: male ratio of 2 to 3:1.[1] Morphea is more common in Caucasian.[1] The mean age of adult presentation is in the mid-40's. This disease classically presents as erythematous to violaceous patches and plaques that resolve into sclerotic, hairless and anhidrotic. Morphea is currently divided into several subtypes.[2] In adult, circumscribed and generalized subtypes predominate.[1] Generalized morphea is a rare variant occurring in 7-9% of morphea patients.[3] This subtype is defined as more than four indurated plaques larger than 3 cm and/or involving two or more anatomic sites (head-neck, each extremity, anterior trunk and posterior trunk).

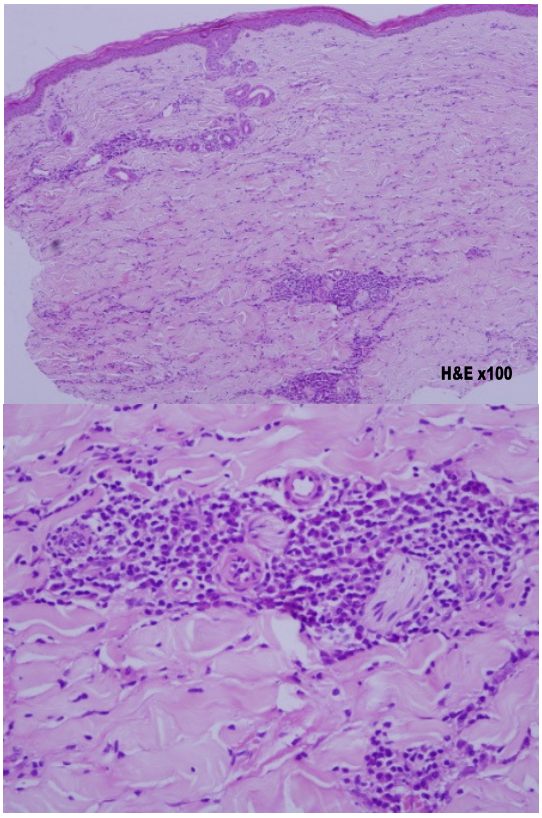


Figure2 Histopathology from right forearm

Morphea can be distinguished from systemic sclerosis by lacking of sclerodactyly, Raynaud's phenomenon, digital ulceration and/or pitting distal scars, and pulmonary fibrosis. Some epidemiologic studies suggest 0.9-5.7% of patient with morphea progress to systemic sclerosis.[4]

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The etiology and pathogenesis of morphea is poorly understood.[1] Morphea probably arises from a genetic background (increasing susceptibility) accompanies with other causative factors (infection, environment exposures, autoimmune disease and medicines).[1] Especially in generalized subtype, concomitant autoimmune disease, including psoriasis,alopecia areata, vitiligo, systemic lupus erythematous, rheumatoid arthritis, spondyloarthropathy, and diabetes mellitus have been reported.[5]

Table 1 Histopathologicsubclassification of morphea (localized scleroderma)[9]

	Indeterminate*	**Inflammatory**	**Mixed inflammatory and sclerotic**	**Sclerotic**
Connective tissue changes (sclerosis)	None	None to minimal	Early sclerosis limited to lower two-thirds of dermis	Advanced sclerosis involving much of dermis
Dermal inflammation (lymphocytes and plasma cells)				
a. Degree	Minimal to mild	Moderate to dense	Moderate	Minimal
b. Distribution	Perivascular and Interstitial	Perivascular, periappendageal and interstitial often with extension to fat	Perivascular, periappendageal interstitial with involvement of the subcutis	Focal perivascular and periappendageal
Appendages	Normal	Normal	Entrapment within mid-dermis	Entrapment or loss
Subcutis	Normal	Normal	Liposclerosis	Liposclerosis

*Clinically defined early stages of morphea lacking specific histopathologic features. Slightly modified from Gilmour TK, Wilkinson B, BreitSN, Kossard S. Analysis of dendritic cell populations using a revised histological staging of morphea. Br J Dermatol 2000; 143: 1183–1192. Reproduced with kind permission from copyright owner John Wiley & Sons, 2012.

Generalized morphea are more likely to have a positive serology for autoantibodies, particularly homogenous antinuclear DNA, single stranded antibodies, antihistone antibodies, rheumatoid factor

and antitopoisomerase II alpha antibody.[5,6] Bisoprolol, bleomycin, peplomycin, D-penicillamine,bromocritine, L-5 hydroxytryptophane in combination with carbidopa, pentazocaine, and balicatib are reported to be the cause of morphea.[7]

The histopathology of morphea depends on the age of the lesions.

The morphea biopsies were grouped into four stages: (a) indeterminate, (b) inflammatory, (c) mixed (inflammatory and sclerotic) and (d) sclerotic according to the criteria used previously by Gilmour et al. (Table 1).[8]

In its earliest phase, lesions of morphea may be highly inflammatory with perivascular, interstitial, eccinotrophic, and perineural array of lymphocyte and plasma cells, associated with abundant mesenchymal mucin deposition between collagen bundles. Eccrine glands appear atrophic and lie higher in the dermis due to the replacement of subcutaneous fat by the newly formed collagen.[10]

The late lesion of morphea is non-inflammatory fibrosis with collagen bundles orientated parallel to the epidermis and complete absence of adnexal structuresThe perineural infiltration can be found in all the histopathologic stages, except the indeterminate stage.[8,9]

The perineural infiltration can be divided into 2 types :

a) the marginal perineural infiltration which denote perivascular infiltration because of the nerve tend to travel along blood vessel to form the neurovascular plexus in the superficial and deep dermis

b) the concentric perineural infiltration which independent of perivascular infiltration[8,9]

In our patient whose histopathology show advanced sclerosis in the whole dermis with many plasma cells infiltration around nerve as concentric type.

The significance of inflammatory cells around cutaneous nerves (perineural inflammation has been widely recognized in tuberculoid leprosy, secondary syphilis, atypical mycobacterial infections, herpes virus infection, leishmaniasis, borreliosis and human parvovirus B19 infection. The non-infectious inflammatory disorders including scleroderma, Shulman's syndrome (eosinophilic fasciitis), L-tryptophan associated eosinophilia myalgia syndrome, sarcoidosis, neuro-Behcet's disease and papular lesions of Degos' disease also have this feature.

These diseases can be excluded by history, clinical presentation and the sclerotic histopathology.

In our case, the histopathologic criteria alone is difficult to differentiate generalized morphea from systemic sclerosis and atrophoderma of Pasini and Perini. The perineural inflammation is more frequent observed in morphea than scleroderma.[8] Additional to (lacking of the clinical criteria such as sclerodactyly, digital ulceration, pitting digital scars, pulmonary fibrosis and sharply dermarcated depressed lesion with cliff drop border. Combining both the clinical and the

histopathology findings, our case is compatible with generalized morphea.

Topical treatments in morphea,the followings are effective using; calcipotriol in combination with betamethasone dipropionate, tacrolimus, and imiquimod.[11,12] Phototherapy (broad band UVA, UVA1, PUVA, and NBUVB) is suggested for the widespread disease.[11,12,13] Failure of phototherapy, the treatment should be switched to metrotrexate and systemic steroids. Mycophenolate mofetil may be considered for the unresponsive patient to metrotrexate and systemic steroid.

PUVA therapy together with topical calciprotriol in combination with betametasone dipropionate and topical Tacrolimus have been given to our patient, the skin lesions have become softened after 2 months of follow up period.

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