International Journal Dental and Medical Sciences Research
Volume 5, Issue 3, May - June 2023 pp 419-422 www.ijdmsrjournal.com ISSN: 2582-6018

Scleromyxedema and systemic Sclerosis Overlap

Dr C V Sonia George, Dr Jijith Krishnan
Government Medical College Thrissur, Kerala , India

Date of Submission: 01-06-2023 Date of Acceptance: 10-06-2023

I. INTRODUCTION

Scleromyxedema is a rare, severe skin disorder. Presents with abnormal accumulation of mucininthe skin , causing papular and sclerodermoid bumps, increased production of fibroblasts . patients characteristically have circulating monoclonal gammopathy with absence of thyroid disorder [(1)].Systemic sclerosis is a complex disease in which extensive fibrosis, vascular alterations, and autoantibodies against various cellular antigens are among the principal feature. [(2)] Though these two diseases mimic each other in clinical features there is a wide array of differences between them histological and pathophysiological. Here we are describing a case of limited systemic sclerosis developinga superimposed scleromyxedema.

II. CASE REPORT

A 54yearyear-old lady with recurrent polychondritis arrived at the rheumatology clinic. She complained of gradually thickening skin on her hands and legs, which was pruritic in character. After a while, she started to experience paresthesia and pain in her fingertips, which got worse as she went about her usual tasks like bathing and cleaning. She also had trouble swallowing and had dyspnea on exertion.

Physical examination revealed fingertip ulcers, sclerodactyly, calcinosis, thick, indurated, and hyperpigmented skin. Nailfold architecture was found to be distorted by digital nail fold capillaroscopy.

Laboratory tests revealed a normal range for the total blood count, renal function test, and liver function test. 60 mm/hour (0–20 mm/hour) erythrocyte sedimentation rate. Centromere pattern immunofluorescence test for antinuclear antibodies was positive at a level of 1:320.Kappa free light chain concentration increased to 27.50 mg/l (5.71–26.3 mg/l). Lung disease with a restrictive pattern was discovered by a pulmonary function test. A skin biopsy revealed perivascular lymphocytic infiltrates in the superficial dermis and an epidermis with localized loss of rete ridges. The patient was started on methotrexate and cyclophosphamide due to limited systemic sclerosis. Tadalafil supportive therapy was also started. She recovered and her illness stopped progressing.

Two years later on presentation with yellowish waxy papules on dorsum of hand and ear lobes, with diffuse thickening of skin and leonine facies .Further testing was done on the patient; the results of the serum electrophoresis showed a M band, the urine Bence Jones proteins test came back negative, and the thyroid function test was normal. Repeat skin biopsy results showed thinner epidermis, mucin deposition, significant fibroblast proliferation, and enhanced collagen deposition across the dermis with positive alcian blue staining. Pilosebaceous unit atrophy is detected.Perivascular and peri appendageal lymphocytic infiltration present. On bone marrow biopsy there was plasmacytosis (20%), immune histochemistry positive for CD138 in 20 % of cells. She was referred to oncology department but in due course contracted covid 19 infection and departed this life

Fig 1. Thickening of skin in hands

International Journal Dental and Medical Sciences Research
Volume 5, Issue 3, May - June 2023 pp 419-422 www.ijdmsrjournal.com ISSN: 2582-6018

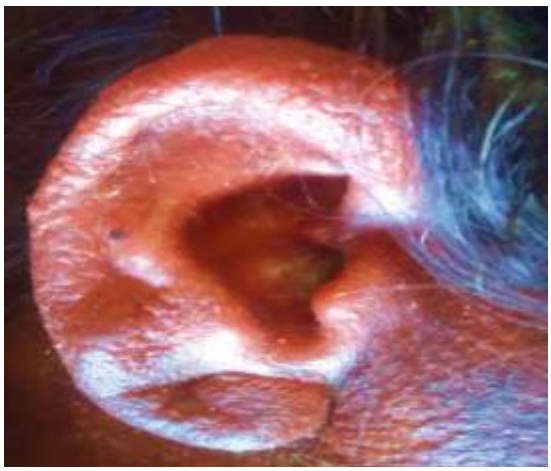
Fig 2. Waxy papules on ear

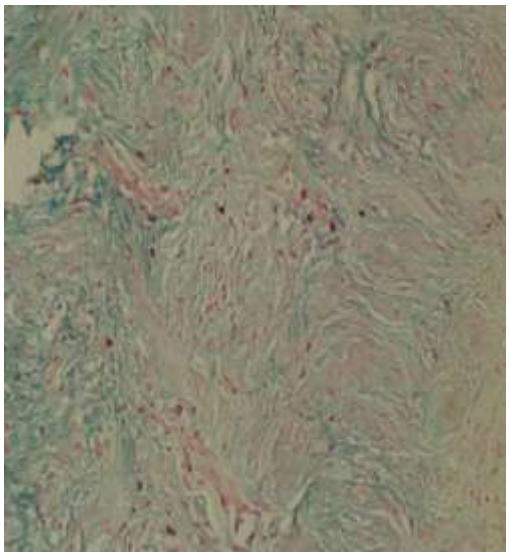
Fig 3:Alcian blue positive in dermis.

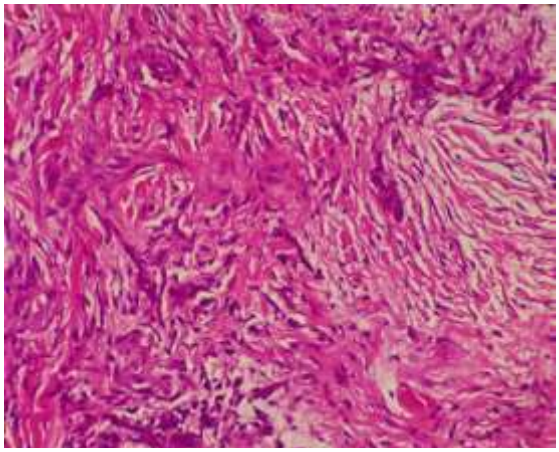
Fig 4. Skin biopsy: dermal mucin deposition and fibroblast proliferation

III. DISCUSSION

Systemic sclerosis and scleromyxedema are two distinctive skin indurative disorders. Ofwhich systemic sclerosis has two major subtypes limited and diffuse ; limited cutaneous scleroderma, fibrosis is mainly restricted to the hands, arms, and face. Raynaud's phenomenon is present for several years before fibrosis appears, pulmonary hypertension is frequent, and anticentromere antibodies occur in 50 to 90% of patients. Diffuse cutaneous scleroderma is a rapidly progressing disorder that affects a large area of the skin and compromises one or more internal organs.[3]. The main features of early systemic sclerosis are microvascular dysfunction and autoimmune phenomena[4 5]

The close mimic of scleroderma is scleromyxedema which is one of the forms of lichen myxedematous. Rongioletti refined the old classification and proposed the following 3 forms of lichen myxedematous: the generalized papular and sclerodermoid variant is the one that should be called scleromyxedema [6 7] The aetiology of scleromyxedema is unknown. Fibroblasts from patients with scleromyxedema have been found to synthesize a greater quantity of hyaluronic acid than normal fibroblasts and, subsequently, a greater amount of mucin.[8] Several studies have shown that serum from patients with scleromyxedema stimulates in vitro proliferation of dermal fibroblasts,[9] [10]resulting in hyaluronic acid and prostaglandin E production.[11]Although 83% of patients with this disease have igg paraproteinemia, isolated serum IgG fails to produce this response, thus, suggesting that nonparaprotein factors may also be responsible for excess fibroblast proliferation[8]

Although scleromyxedema was initially considered to be a disorder limited to skin involvement, it is associated with monoclonal paraproteinemia[12-15] and extracutaneous manifestations including inflammatory myopathy [16 17],erosive arthropathy [18], sicca complex [18], and proximal oesophageal dysmotility [19] have received increasing attention.

There are lot of clinical features common in these two disorders like skin involvement,Raynaud's, pulmonary involvement and oesophageal dysmotility. But there is striking difference in the frequency of association of above symptoms with each disorder.Our patient initially had the features suggestive of limited systemic sclerosis with the characteristic anticentromere antibody positive.She was clinically improving with methotrexate and cyclophosphamide.Later she developed the characteristic papules typically flesh

coloured, noninflammatory and 2–3 mm in size and tightly spaced on ear lobules and face.The typical features of leonine facies, microstomia and 'donut signs' over affected proximal interphalangeal joints developed. The skin lesions not typical of systemic sclerosis has made us probe further.

Although systemic sclerosis andscleromyxedema share many clinical features [20-22], they are histologically distinct: collagen deposition in the papillary dermis and increased number of fibroblasts, the histopathological hallmarks of scleromyxedema, are strikingly different from the sclerosis of the dermis and subcutaneous fat, obliteration of dermal appendages and decreased number of fibroblasts characteristic of scleroderma.

The most distinguished evidence was the variability in the skin biopsy which clearly proved the serial biopsy had fibroblast proliferation with collagen deposition in dermis.The associated monoclonal gammopathy with absence of thyroid disorder has strongly supported our diagnosis of scleromyxedema. As we all know the pathophysiology of both diseases are entirely different their overlap has been rarely observed, this entity needs further research to answer our queries.

IV. CONCLUSION

To the best of our knowledge, this overlap has been rarely reported in the literature.

This case also highlights importance of high clinical suspicion in diagnosing a case.

REFERENCE

[1]. Rongioletti F. Scleromyxedema. UpToDate. Waltham, MA: UpToDate; 2015

[2]. Medsger TA. Systemic sclerosis (scleroderma): clinical aspects. In: Koopman WJ, ed. Arthritis and allied conditions: a textbook of rheumatology. Philadelphia: Williams & Wilkins, 1997:1433-65

[3]. Armando Gabrielli, M.D., Enrico V. Avvedimento, ,etal, mechanisms of disease scleroderma: a review article n engl j med 360;19 nejm.org may 7, 2009

[4]. Gilbane AJ, Denton CP, Holmes AM. Scleroderma pathogenesis: a pivotal role for fibroblasts as effector cells. Arthritis Res Ther 2013; 15: 215.

[5]. Mahoney JM, Taroni J, Martyanov V, et al. Systems level analysis of systemic sclerosis shows a network of immune and profibrotic pathways connected with genetic polymorphisms. PLoS Comput Biol 2015; 11: e1004005

[6]. Rongioletti F: Lichen myxedematous (papular mucinosis): new concepts and perceptives for an old disease. Semin Cutan Med Surg 2006;25:100–104. 2

[7]. Heymann WR: Scleromyxedema. J Am Acad Dermatol 2007;57:890–891

[8]. Harper RA, Rispler J. Lichen myxedematosus serum stimulates human skin fibroblast. Science 1978;199:545 - 7.

[9]. proliferation Ferrarini M, Helfrich DJ, Walker ER, Medsger TA, Whiteside TL. Scleromyxedema serum increases proliferation but not the glycosaminoglycan synthesis of dermal fibroblasts. J Rheumatol 1989;16:837 - 41.

[10]. White GM, Jeffes III EW. Stimulation of fibroblasts by paraprotein in scleromyxedema. J Am Acad Dermatol 1989;21(4 Pt 1):816 Yaron M, Yaron I, Yust I, Brenner S. Lichen myxedematosus (scleromyxedema) serum stimulates hyaluronic acid and prostaglandin E production by human fibroblasts. J Rheumatol 1985;12:171 –

[11]. (14)Yaron M, Yaron I, Yust I, Brenner S. Lichen myxedematosus (scleromyxedema) serum stimulates hyaluronic acid and prostaglandin E production by human fibroblasts. J Rheumatol 1985;12:171 – 5

[12]. Perry HO, Montgomery H, Stickney J. Further observations on lichen myxedematosus. Ann Intern Med 1960;955-69.

[13]. Reid TL, Spoto DV, Larrabee GJ, Shlamowitz MA, Horowitz SA. Monoclonal paraproteinemia with subacute encephalopathy, seizures and scleromyxoedema. Neurology 1987;37:1054-7.

[14]. Farmer ER, Hambrick GW, Shulman LE. Papular mucinosis. Arch Dermatol 1982;118:9-13.

[15]. McCarthy JT, Osserman E, Lombardo PK, Takatsuki K. Abnormal serum globulin in lichen myxedematosus. Arch Dermatol 1964;89:446-50.

[16]. Verrity AM, Toop J, McAdam LP, Pearson CM. Scleromyxoedema myopathy. Histochemical and electron microscope observations. Am J Clin Pathol 1978 ;69:446-51.

[17]. Rothe MJ, Rivas R, Gould E, Kerdel FA. Scleromyxoedema and severe myositis. Int J Dermatol 1989;28:657-60.

[18]. Frayha RA. Papular mucinosis, destructive artho pathy, median neuropathy and sicca complex. Clin Rheumatol 1983;2:277-84.
[19]. . Aligood TR, Burnett JW, Raines BL. Scleromyxoedema associated with esophageal aperistalsis and dermal eosinophilia. Cutis 1981;28:60-4
[20]. Gabriel SE, Perry HO, Oleson GB, Bowles CA. Scleromyxoedema: a scleroderma-like disorder with systemic manifestations. Medicine 1988; 67:58-65.
[21]. Fudman EJ, Golub J, Ike RW. Scleromyxoedema with systemic involvement mimics rheumatic diseases. Arthritis Rheum 1986;29:913-17.
[22]. Helfrich DJ, Walker ER, Martinez AJ, Medsger TA Jr. Scleromyxoedema myopathy: case report and review of the literature. Arthritis Rheum 1988; 31:1437-41