Plasma Cell Myeloma Masquerading as Scleromyxedema

Abstract

Scleromyxedema is a rare progressive cutaneous mucinosis of unknown etiology with equal prevalence in both men and women. It is usually associated with monoclonal gammopathy in most of the cases. Various treatment modalities have been tried for scleromyxedema including steroids, intravenous immunoglobulin (IVIg), autologous hematopoietic stem cell transplantation, and melphalan, but none has proved to be fully effective. This paper reports a case of scelromyxedema in a patient who was found to have multiple myeloma on further evaluation. The patient was treated with six cycles of bortezomib, thalidomide, and dexamethasone, following which he had complete resolution of his skin lesions. While recent case reports have mentioned treatment of patients of scleromyxedema with varying combinations of IVIg, thalidomide, bortezomib, and dexamethasone, we describe a patient who has been successfully treated with a combination of bortezomib, thalidomide, and dexamethasone with complete resolution of all skin lesions.

Keywords: *Bortezomib, dexamethasone, plasma cell myeloma, scleromyxedema, thalidomide*

Varun Victor, Rashmi Maria Margareat

Department of General Medicine, St. John's Medical College, Bengaluru, Karnataka, India

Introduction

Scleromyxedema is a rare cutaneous mucinosis of unknown etiology with equal prevalence in both sexes. To date, less than 200 cases of this condition have been described in the literature. It is commonly associated with monoclonal gammopathy, but association with plasma cell myeloma is very rare.[1] Initially described by Arndt and Gottron in the year 1954, the diagnostic criteria for scleromyxedema has been modified by Rongioletti and Rebora in 2001. It is classified into generalized lichen myxedematosus (scleromyxedema), localized lichen myxedematosus, and an atypical variant. Diagnosis of generalized scleromyxedema is based on the tetrad of generalized sclerodermoid and papular eruption, fibroblast proliferation with associated mucin deposition, monoclonal gammopathy, and the absence of thyroid disease.[2] A wide variety of treatment options including melphalan, steroids, plasmapheresis, IVIg, isotretinoin, thalidomide, and autologous hematopoietic stem cell transplantation have been tried recently in the treatment of this condition with varying outcomes.[3] To date, there is no well-defined treatment for this condition. The objective of this case report is to highlight the clinical features of this rare entity and stress upon the favorable therapeutic response to the combination chemotherapy that was used for treatment.

Case Report

A 65-year-old male with no comorbidities presented with progressive swelling of the face and the upper limbs associated with induration of skin over the trunk and the upper limbs and loss of scalp hair. The skin lesions were associated with severe pruritus. His symptoms had gradually progressed over the course of 6 months.

On examination, he was found to have symmetric, waxy, papular lesions 3–4 mm in size, arranged in a linear pattern over the face, trunk, and the extremities [Figure 1]. The patient had exaggeration of facial ridges and leonine facies [Figure 2]. He was also found to have a "doughnut sign" on the metacarpophalangeal (MCP) joints of both hands [Figure 3]. Alopecia was also noted on the scalp.

Complete blood count revealed moderate anemia with a hemoglobin of 8 mg/dl. Peripheral smear showed normocytic normochromic anemia with rouleaux formation. Iron studies

How to cite this article: Victor V, Margareat RM. Plasma cell myeloma masquerading as scleromyxedema. Indian Dermatol Online J 2019;10:50-3.

Received: June, 2018. **Accepted:** July, 2018.

Address for correspondence:
Dr. Varun Victor,
Flat No-203, #236, Silicon Corner Apartments, 1st Cross, 40th Main, BTM 2nd Stage, Bengaluru - 560 068, Karnataka, India.
E-mail: dr.varunvictor@gmail.com

Access this article online

Website: www.idoj.in

DOI: 10.4103/idoj.IDOJ_135_18

Quick Response Code:

were suggestive of an anemia of chronic disease (Serum iron, 45 mcg/dL; total iron binding capacity, 220 mcg/dL; transferrin saturation, 15%; serum ferritin, 80 mcg/L). Vitamin B12 and folic acid levels were normal. Renal function tests, liver function tests, thyroid function tests, and urinalysis were completely normal. Immunoline was negative for anti-nuclear antibody (ANA). Skin biopsies were obtained from the skin lesions over the trunk and the upper extremities. They revealed abundant interstitial mucin interspersed between collagen bundles in the dermis with increased fibroblasts [Figures 4 and 5]. Congo-red staining of the specimen was negative for amyloid deposition. Based on the clinical and histopathological picture, a diagnosis of scleromyxedema was made. In view of the increased incidence of monoclonal gammopathy in this condition, a serum protein electrophoresis was done, which revealed a characteristic M-spike in the gamma region (3.2 g/L of gamma-globulins). Immunofixation study done in serum sample identified the M-protein as an IgG antibody with a lambda light chain. A free light chain assay was done which revealed elevated levels of lambda light chains (35.2 mg/L), normal kappa light chains (4.3 mg/L), and an altered kappa lambda free light chain ratio of 0.12. Bone marrow biopsy was done for evaluation of anemia and for ruling out multiple myeloma given the clinical picture and the presence of a monoclonal gammopathy in the SPEP and immunofixation studies. Bone marrow iron stores were 3+ and there was normoblastic erythroid maturation in the bone marrow smear, which confirmed anemia of chronic disease. There were increased plasma cells (30%) in the bone marrow smear. Skeletal survey and serum calcium levels were normal. A diagnosis of multiple

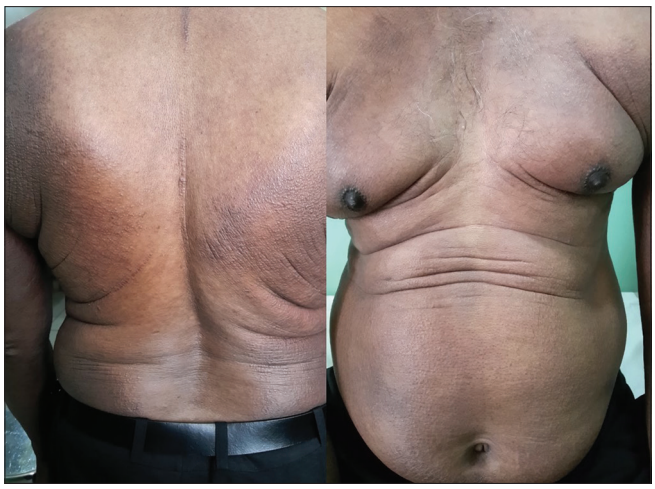

Figure 1: Waxy papular lesions over the trunk and back

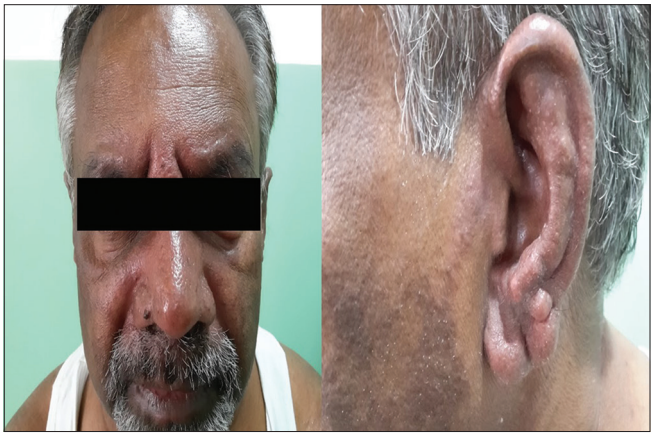

Figure 2: Leonine facies and exaggeration of facial ridges

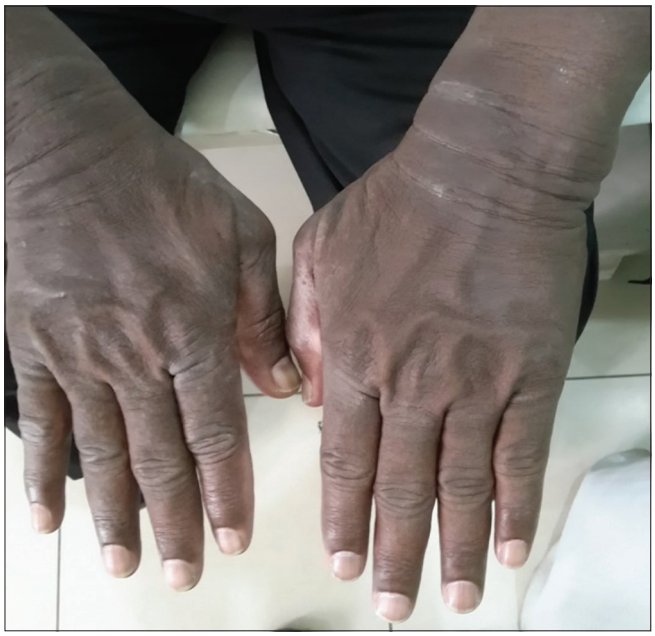

Figure 3: Doughnut sign on the metacarpophalangeal joints

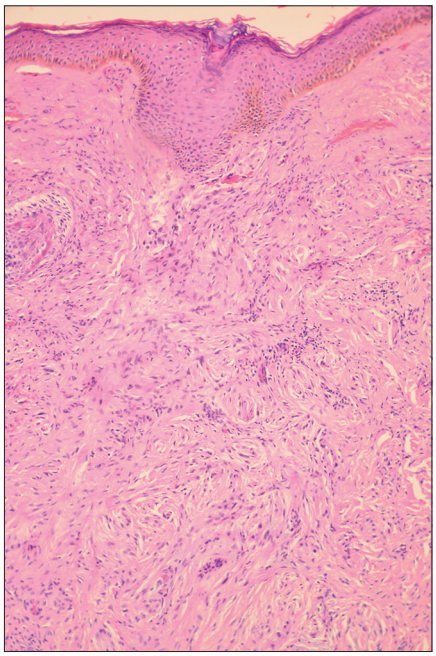

Figure 4: Dermis shows a lesion with proliferating fibroblasts with few thick bundles of collagen (H and E, ×20)

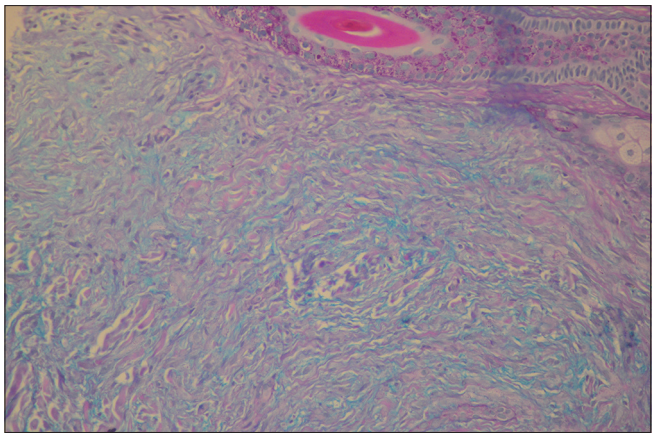

Figure 5: Alcian blue stain highlights markedly increased dermal mucin (Alcian blue, ×20)

myeloma was done based on the International Myeloma Working Group Criteria of 2014. Patient was started on the VTD (velcade/thalidomide/dexamethasone) regimen. Each cycle consisted of 28 days. Thalidomide was given at a dose of 100 mg/day for the first 14 days, followed by 200 mg/day for the next 7 days. Bortezomib (velcade) was given at the dose of 1.3 mg/m^2 (maximum of 2 mg/dose) on days 1, 8, 15, and 22. Dexamethasone (40 mg/dose) was given on days 1, 8, 15, and 22. A total of 6 cycles were given over a period of 6 months. The patient showed dramatic improvement with treatment with complete resolution of his skin lesions at the end of 6 months. Repeat serum protein electrophoresis was completely normal with no M-spike in the gamma region. Repeat free light chain assay revealed normal levels of kappa chains (12.2 mg/L), lambda chains (20.3 mg/L), and a normal kappa lambda light chain ratio of 0.60. Repeat bone marrow biopsy revealed only 2% of plasma cells. Patient was offered the option of autologous hematopoietic stem cell transplantation post VTD regimen, but declined it as he was unable to afford the procedure. He was doing well in subsequent follow-up visits.

Discussion

The patient in our case report presented with a typical picture of scleromyxedema. He fulfilled all the diagnostic criteria for the same. While monoclonal gammopathy is commonly associated with this condition, multiple myeloma manifesting primarily as scleromyxedema is extremely rare. This rare presentation adds a new insight into the clinical diversity of scleromyxedema. The diagnosis would have been missed in our case if the patient had not undergone a bone marrow biopsy. The clinician needs to consider the possibility of multiple myeloma in patients with scleromyxedema even if the patient has no other symptoms suggestive of the same.

There have been various case reports of successful treatment of scleromyxedema in the recent past with IVIg, combination of bortezomib and steroids, thalidomide or bortezomib monotherapy, plasmapheresis, cyclosporine, melphalan, and autologous hematopoietic stem cell transplantation.[4-11] The combination of thalidomide, bortezomib, and dexamethasone is not commonly being used in the treatment of this skin condition. We chose this combination of drugs based on standard chemotherapy options for myeloma and anecdotal reports of bortezomib and thalidomide that were used for the treatment of scleromyxedema. This regimen was opted for as it was cost-effective and our patient could not afford autologous hematopoietic stem cell transplantation. Given the cost effectiveness of this regimen compared to other options like IVIg, plasmapheresis or autologous hematopoietic stem cell transplantation, and the successful treatment outcome in our case, this regimen could be suggested as a less expensive alternative for treatment of scleromyxedema in the near future.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Shen M, Ng SC. Multiple myeloma masquerades as rheumatic diseases. Proc Singapore Healthc 2013;22:64-9.
2. Rongioletti F, Rebora A. Updated classification of papular mucinosis, lichen myxedematosus, and scleromyxedema. J Am Acad Dermatol 2001;44:273-81.
3. Cañueto J, Labrador J, Román C, Santos-Briz A, Contreras T, Gutiérrez NC, *et al.* The combination of bortezomib and dexamethasone is an efficient therapy for relapsed/refractory scleromyxedema: A rare disease with new clinical insights. Eur J Haematol 2012;88:450-4.
4. Dolenc-Voljč M, Jurčić V, Hočevar A, Tomšič M. Scleromyxedema with subcutaneous nodules: Successful treatment with thalidomide and intravenous immunoglobulin. Case Rep Dermatol 2013;5:309-15.
5. Koronowska SK, Osmola-Mańkowska A, Jakubowicz O, Zaba R. Scleromyxedema: A rare disorder and its treatment difficulties. Postepy Dermatol Alergol 2013;30:122-6.
6. Allam M, Ghozzi M. Scleromyxedema: A case report and review of the literature. Case Rep Dermatol 2013;5:168-75.
7. Westheim AI, Lookingbill DP. Plasmapheresis in a patient with

scleromyxedema. Arch Dermatol 1987;123:786-9.
8. Illa I, de la Torre C, Rojas-Garcia R, Altes A, Blesa R, Sierra J, *et al*. Steady remission of scleromyxedema 3 years after autologous stem cell transplantation: An *in vivo* and *in vitro* study. Blood 2006;108:773-4.
9. Blum M, Wigley FM, Hummers LK. Scleromyxedema: A case series highlighting long-term outcomes of treatment with intravenous immunoglobulin (IVIG). Medicine (Baltimore) 2008;87:10-20.
10. Caradonna S, Jacobe H. Thalidomide as a potential treatment for scleromyxedema. Arch Dermatol 2004;140:277-80.
11. Bhutani M, Shahid Z, Schnebelen A, Alapat D, Usmani SZ. Cutaneous manifestations of multiple myeloma and other plasma cell proliferative disorders. Semin Oncol 2016;43:395-400.