Localized Scleromyxedema Masquerading as Angioedema

Dear Editor,

Scleromyxedema (SM) is a rare, progressive, cutaneous mucinosis associated with systemic involvement and paraproteinemia and a triad of histological features: the presence of mucin deposition within the upper and mid reticular dermis, fibroblast proliferation and fibrosis in the absence of a thyroid disorder. The etiology is still elusive.[1] We report a 15-year-old boy with localized SM on the left side of the face masquerading as angioedema.

A 15-year-old boy, born to a non-consanguineous marriage, presented with sudden-onset, asymptomatic persistent swelling of the left face for seven months. The swelling was transient for an initial 1 month, which became persistent later. There was no history of angioedema or urticaria elsewhere on the body or history suggestive of weakness of facial muscles on the left side of the face. There was no history of fever, joint pain, vomiting, diarrhea, photosensitivity, weight loss or fatigue. His developmental milestones were normal. On examination, an ill-defined, non-tender, and non-pitting swelling was present on the left side of the face, involving the left lower eyelid, left cheek and left half of the chin. The skin over the swelling was pinchable [Figures 1a and 1b]. A differential diagnosis of Melkersson–Rosenthal syndrome and hereditary angioneurotic edema was considered and worked up. His routine hemogram, biochemistry profile, C-reactive protein and erythrocyte sedimentation rate (ESR) were normal. His complement levels C3—106 mg/dl (normal: 75–175 mg/dL), C4—16.2 mg/dL (normal: 12–42 mg/dL) and C1 esterase inhibitor—0.236 g/L (normal: 0.16–0.33 g/L), were within the normal limit. The antinuclear antibody (ANA) profile, serum electrophoresis and computed tomography (CT) of the head were normal. A skin biopsy showed unremarkable epidermis along with mild thickening of collagen with plump fibroblasts and perivascular lymphocytic infiltration in the dermis [Figures 2a and 2b]. Increased dermal mucin was seen as ratified, by alcian blue–periodic acid–Schiff (AB–PAS) stain, consistent with cutaneous mucinosis [Figure 3]. He was diagnosed with localized SM without systemic involvement and managed with symptomatic treatment. Parents were counseled about the prognosis, the self-resolving nature of the condition and regular follow-up.

Two clinicopathological subsets are included:

(i) Generalized papular and sclerodermoid forms with a monoclonal gammopathy and systemic involvement.
(ii) Localized papular form that does not have systemic implications.[2]

Circulating cytokines, such as interleukin (IL)-1, tumor necrosis factor (TNF)-alpha and tumor growth factor (TGF)-beta, which are known to stimulate glycosaminoglycan synthesis and fibroblast proliferation in the skin, could play a role in the pathogenesis of SM.[3] SM is almost always associated with paraproteinemia. Monoclonal gammopathy is usually IgG with lambda light chains.[4] Recent consensus has defined the diagnostic criteria, and at least three of the findings are necessary to confirm the diagnosis.[5]

1) Presence of generalized papular and sclerodermoid manifestations.
2) Characteristic microscopic findings.

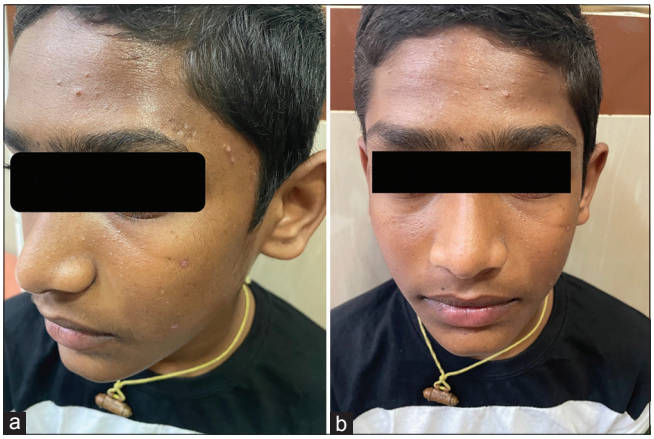

Figure 1: (a and b) Ill-defined, non-tender, and non-pitting swelling on the left side of the face, involving the left lower eyelid, left cheek, and left half of the chin

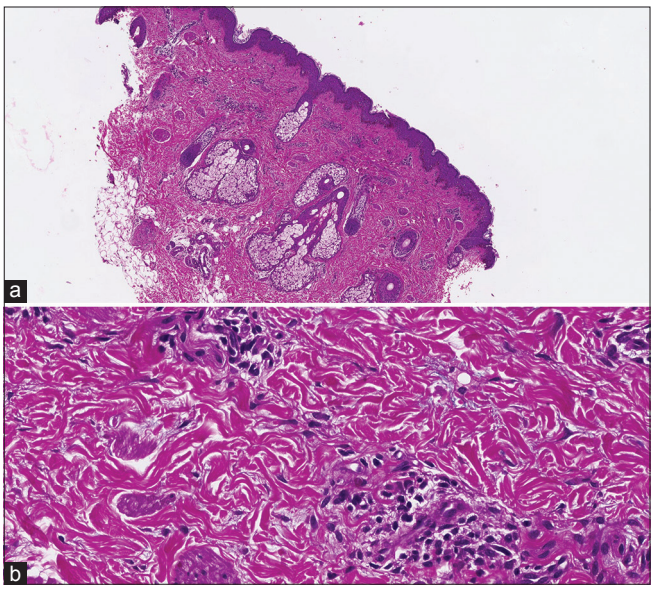

Figure 2: (a and b) Unremarkable epidermis along with mild thickening of collagen with plump fibroblasts and perivascular lymphocytic infiltration in the dermis (H&E, 40X and 100X) in figures a and b, respectively

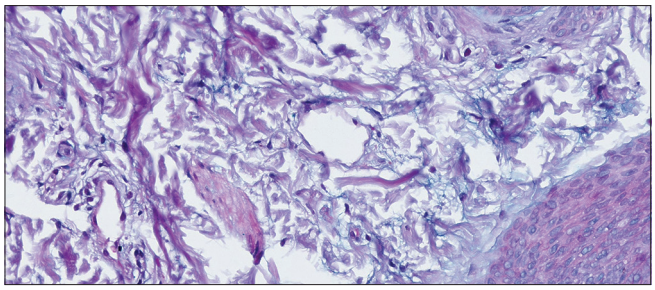

Figure 3: AB–PAS staining performed on the section from a cutaneous lesion of the face demonstrated Increased dermal mucin (AB-PAS stain, 100X)

3) Monoclonal gammopathy.
4) Absence of thyroid pathology.

For the localized lichen myxedematosus (LM) variant, five subtypes can be distinguished: (a) discrete papular LM (b) acral persistent papular mucinosis (c) self-healing papular mucinosis (d) papular mucinosis of infancy and (e) nodular LM. All of them must have the clinical and histopathological characteristics of LM but without paraproteinemia, systemic involvement or thyroid disease.[6]

S Gerstner *et al*.[7] reported an SM case of a woman presenting with soft, compressible periorbital edema, along with edema of hands and lower arms with pain and tingling sensation.

SM can be associated with internal manifestations, such as proximal myopathy, encephalopathy, peripheral neuropathy, migrating arthritis, sclerodactyly, seronegative polyarthritis, carpal tunnel syndrome, obstructive or restrictive lung disease, pulmonary hypertension, renal insufficiency, myocardial infarction, hypertension, atherosclerosis and ophthalmological complications, such as corneal deposits and thinning of the eyelids.[1] Gastrointestinal involvement is quite common, and it could present with distal dysphagia.[4] Dermato-neuro syndrome, presenting with fever, seizures and coma, along with a flu-like prodrome, is a rare complication of SM.[6]

One of the major differential diagnoses considered in our case was hereditary angioedema. Hereditary angioedema is a rare autosomal dominant disorder, due to a deficiency of C1 esterase inhibitor. It is clinically characterized by recurrent angioedema, mainly in the extremities, abdomen and upper airways, which can progress to asphyxia and death. The main triggers are mechanical trauma, infections and stress.[8] Hereditary angioedema was ruled out in our case by normal C1 esterase inhibitor levels.

No specific treatment appears to be uniformly effective in SM, and the relative efficacy of the treatments that have been utilized remains unclear. Systemic therapy with intravenous immunoglobulin (IVIg) is the treatment of choice. IVIg can be considered in patients with either fast deterioration of skin symptoms, dermato-neuro syndrome or life-threatening involvement of internal organs.[3] Other therapies that have been tried include steroids, methotrexate, cyclophosphamide, thalidomide, cyclosporine, oral retinoids, extracorporeal photopheresis and plasmapheresis.[4]

Localized forms of SM are rare and difficult to diagnose when they are especially unilateral and mimic angioedema. Histopathology may help in such cases. Early diagnosis could prevent unnecessary investigations and treatment.

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.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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References

1. Koronowska SK, Osmola-Mańkowska A, Jakubowicz O, Zaba R. Scleromyxedema: a rare disorder and its treatment difficulties. Postepy Dermatol Alergol 2013;30:122-6.
2. Griffiths CEM, Barker J, Bleiker T, Chalmers RJG, Creamer D, Rook GA. Rooks Textbook of Dermatology. 9th ed. Vol. 1. Chichester, West Sussex: John Wiley & Sons Inc; 2016.
3. Knobler R, Moinzadeh P, Hunzelmann N, Kreuter A, Cozzio A,

Mouthon L, *et al*. European dermatology forum S1-guideline on the diagnosis and treatment of sclerosing diseases of the skin, Part 2: Scleromyxedema, scleredema and nephrogenic systemic fibrosis. J Eur Acad Dermatol Venereol 2017;31:1581-94.
4. Thomas E, GeorgrA, Deodhar D, John M. Scleromyxedema: An atypical case. Indian J Dermatol 2015;60:323.
5. Atzori L, Ferreli C, Rongioletti F. New insights on scleromyxedema. J Scleroderma Relat Disord 2019;4:118-26.
6. Cárdenas-Gonzalez RE, Ruelas MEH, Candiani JO. Lichen myxedematosus: A rare group of cutaneous mucinosis. An Bras Dermatol 2019;94:462-9.
7. Gerstner S, Kneitz H, Bröcker EB, Trautmann A. Differential diagnosis of angioedema. Acute edematous scleromyxedema. Hautarzt 2014;65:454-7.
8. Campos RA, Valle SOR, Toledo EC. Hereditary angioedema: A disease seldom diagnosed by pediatricians. J Pediatr (Rio J) 2021;97:S10-6.

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