Case Report

A vexing case of non-healing ulcers with interstitial lung disease

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ABSTRACT

Clinically amyopathic dermatomyositis is a subset of dermatomyositis that does not have any clinical evidence of muscle inflammation. Hence, it frequently poses a diagnostic challenge to the clinician. Here, we present a middle-aged farmer who presented only with multiple non-healing ulcers and was eventually found to be having early interstitial lung disease. He was finally diagnosed with anti-melanoma differentiation-associated gene 5 dermatomyositis and was started on aggressive immunosuppressants.

Key words: Dermatomyositis, Interstitial lung disease, Myositis, Ulcer

Dermatomyositis is a group of autoimmune disorders characterized by classical skin rash and muscle weakness. Clinically, amyopathic dermatomyositis (CADM) includes those patients with classical features of dermatomyositis but no clinical evidence of myositis [1]. It comprises two broad subgroups, the truly Amyopathic DM (ADM), and hypomyopathic DM (HDM). The latter has laboratory evidence of muscle inflammation (any one of elevated muscle enzymes, electromyographic evidence, magnetic resonance imaging signal changes, or suggestive findings on biopsy), while the former has neither clinical nor laboratory evidence of muscle inflammation [2]. Anti-melanoma differentiation-associated gene 5 (MDA-5) associated dermatomyositis (MDA-5 DM) is a recently identified subtype of ADM characterized by rapidly progressive interstitial lung disease (RP-ILD) and unique cutaneous features. It has a number of diagnostic as well as therapeutic challenges.

Here, we report the case of an MDA-5 DM who presented solely with multiple non-healing ulcers and was eventually found to be having early changes of interstitial lung disease (ILD) on imaging. It emphasizes the importance of keeping a high index of suspicion about the possibility of a CADM in a patient presenting with characteristic cutaneous features without any muscle weakness.

CASE REPORT

A 48-year-old male farmer presented with bilateral symmetrical small and large joint inflammatory polyarthritis for 9 months, non-healing ulcers over both elbows for 7 months (Fig. 1), and periorbital swelling for the past 5 months. The ulcers started from the extensor surface of both elbows 7 months ago and were circular with 4 cm diameter, had a punched-out appearance with a regular margin, undermined edges, and a clean base. Later, similar ulcers also appeared over the knuckles and on the sole of the foot. Periorbital puffiness was not associated with any local eye symptoms or any generalized swelling. He also complained of Raynaud's phenomenon for the past 1 year and alopecia for 3 months. There was no history of rash, fever, photosensitivity, cough, dyspnea, any weakness, skin tightening, dryness of mouth, enthesitis, dactylitis, uveitis, genital or oral ulcer, or low back pain.

Examination revealed swelling and tenderness of small joints of the hand and feet with a mildly restricted range of motion. Multiple pitting ulcers were present on the fingers of all four limbs. There was fine inspiratory crepitation over the lower part of the posterior chest wall on both sides. Neurological examination was normal.

Investigations revealed normocytic normochromic anemia of chronic disease (Hb=10.9 g%, mean corpuscular volume=83 fL, mean corpuscular hemoglobin=27 pg, reticulocyte=0.5%, serum iron=24 mcg/dl (reference: 37–145 mcg/dl), and total iron-binding capacity=221 mcg/dl (reference: 250–450 mcg/dl). Liver function tests showed mild elevation of transaminases (alanine transaminase=72 U/L, aspartate aminotransferase=95U/L; reference: 8–45 U/L). Renal function, electrolytes, and urinalysis were normal. Inflammatory markers were mildly raised [erythrocyte sedimentation rate=66 mm in 1st hour, C-reactive protein=7.6 mg/L (reference <5 mg/L), ferritin=973 ug/L

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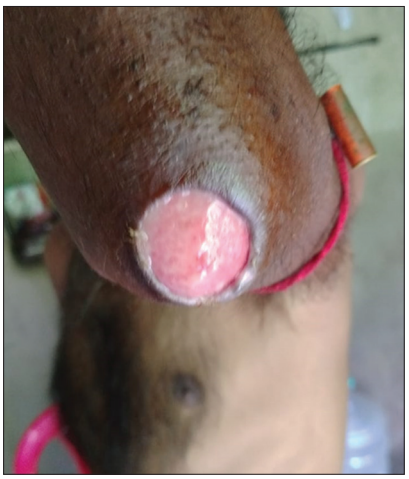

Figure 1: Ulcer over the left elbow

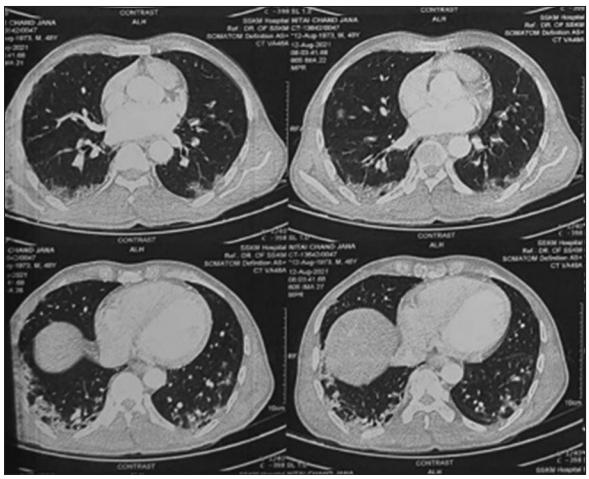

Figure 2: Cross-section of high-resolution computed tomography scan of thorax showing multiple fibroreticular opacities in bilateral lung fields

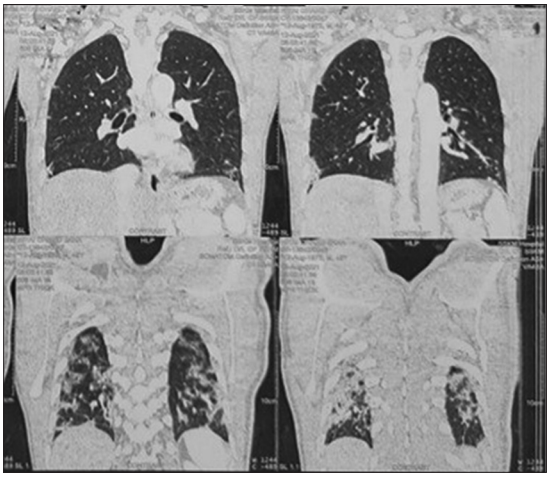

Figure 3: Coronal section of high-resolution CT scan of thorax showing multiple fibroreticular opacities and few ground glass opacities in bilateral lung fields

(reference: 13–150 mcg/L), creatine phosphokinase=173 U/L (reference: <170 U/L)], and human immunodeficiency virus which were non-reactive. Rheumatoid factor, antinuclear antibodies (ANA), anti-cyclic citrullinated peptide, and antineutrophil cytoplasmic antibodies were negative. ANA profile had positive Ro-52. The chest X-ray showed bilateral patchy lower lobe opacities. High-resolution computed tomography thorax showed few fibroreticular opacities with mild bronchiectasis in bilateral lung parenchyma with mild subpleural consolidation and ground-glass opacities suggestive of ILD (Figs. 2 and 3). The electromyographic study was within normal limits. Myositis profile showed strong positivity for anti-MDA5.

With a diagnosis of MDA5-associated dermatomyositis, the patient was started on oral steroids at 1mg/kg prednisolone and cyclophosphamide 500 mg monthly for ILD. His ulcers resolved, and periorbital puffiness subsided after two weeks of treatment. Chest imaging and lung function studies on follow-up visits did not show any further progress of ILD.

DISCUSSION

Due to the absence of any clinical or laboratory evidence of myositis, the entity of CADM is difficult to diagnose. According to various studies, 9–50% of patients with dermatomyositis can present with CADM and 23–73% of patients with CADM have MDA5 positivity [3]. Anti-MDA-5 antibody was first described by Sato *et al*. in a Japanese study way back in 2005. On analysis of autoantibodies from 298 patients with a variety of connective tissue diseases, anti-MDA-5 antibodies were found in 19% of patients with dermatomyositis. Rapidly progressive ILD (RP-ILD) compared to patients devoid of anti-MDA-5 autoantibodies [4]. In a study by Fiorentino *et al*., 13% of dermatomyositis patients who were positive for the anti-MDA-5 antibody had typical cutaneous symptoms such as skin ulcers, including ulcers on nail folds, elbows, and knees, tender palmar papules, and hyperkeratosis of digital pulp. These patients also had an increased risk of hand swelling, arthritis/arthralgia, and diffuse hair loss [5].

Thus, a constellation of classical punched-out skin ulcers with vasculopathy (60–70%), arthralgia (50%) or arthritis (80%), and ILD (60–100%) helps to reach a diagnosis. In 20–75% of patients, ILD had a rapidly progressive course (RP-ILD) which is now universally considered a hallmark of MDA-5 DM [6].

Several treatment options have been tried for MDA5 DM, but there is a dearth of high-quality evidence. Based on expert consensus, a combination of double immunosuppressants (glucocorticoids with calcineurin inhibitors) or triple IS (double IS combined with cyclophosphamide and mycophenolate mofetil) are frequently used in treatment, especially to halt the progression of ILD [7,8]. We treated the patient with only glucocorticoids and cyclophosphamide and got positive results. Our case also highlights the importance of early diagnosis and treatment initiation which are very essential to improve survival, in patients with MDA-5 DM.

CONCLUSION

A high index of suspicion is necessary for the diagnosis of CADM like MDA5 dermatomyositis, especially in patients with early presentation. Characteristic skin ulcers with RP-ILD are

hallmarks of the disease. Prompt treatment can improve outcomes and prevent the progression of ILD.

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