This report reviews a case of dermatomyositis presenting with weakness and extensive calcification in an adult. While dermatomyositis is not uncommon in adults, it is uncommon for calcifications to be present. Children develop calcifications more frequently than adults. When present in adults, small calcifications on areas of frequent trauma such as elbows and fingers are more common. However, this patient presented with large calcified deposits in his abdomen and extremities. His treatment and course are described. [West J Emerg Med. 2012;13(1):136–138.]
His CK levels improved with hydration, and he received intensive physical therapy throughout his hospitalization. At hospital discharge, the patient had 4/5 strength globally and was able to sit in a chair unassisted. He continues to work toward ambulation through outpatient physical therapy.

DISCUSSION

Dermatomyositis is a disease that can present in individuals of all ages, with peak incidence in adults during the fifth and sixth decades of life. It has an incidence of 5.5 per million people. The exact mechanism for dermatomyositis is not known, but it is postulated to have an autoimmune component. Some cases are felt to be paraneoplastic. In most cases, the rash and proximal weakness appear simultaneously. However, 30% of patients experience the cutaneous symptoms without weakness (dermatomyositis sine myositis), and 10% have muscle weakness without cutaneous symptoms. Initial cutaneous symptoms often include burning and pruritus, which may be associated with exposure to ultraviolet light or sunlight. Muscle weakness is characterized predominantly by proximal hip and shoulder muscle involvement: patients may have complaints of difficulty standing from a sitting position or raising their arms above their heads. They also have complaints of pain and tenderness to their muscles.1

Laboratory tests to support the diagnosis of dermatomyositis include serum muscle enzyme concentrations as well as autoantibody tests. Often, CK, LDH, aldolase, and aminotransferases are elevated from muscle breakdown. Patients usually have autoantibodies ranging from nonspecific antinuclear antibodies to the more specific anti–155 kDa. Electromyography (EMG) is characterized by increased irritability with spontaneous fibrillation and sharp waves. Often, skin and muscle biopsies show inflammatory changes, segmental necrosis, or other nonspecific findings. The diagnosis is confirmed through clinical history and examination of proximal muscle weakness with skin findings and 2 of 3 laboratory criteria. These include elevated muscle enzymes, EMG changes, and tissue biopsy, as described above.1

Although this patient had the typical findings of dermatomyositis, with confluent photosensitive rash over the malar area of his face and proximal muscle weakness, he also suffered from extensive calcinosis. While described as a complication of dermatomyositis in pediatric and adolescent patients, calcinosis is much less common in adult patients. Among the few cases seen in adults, calcinosis is often located in hard deposits around areas that experience frequent trauma (elbows and fingers).2 Socioeconomic status may play a role in the progression of calcinosis, as demonstrated in case reports3; this patient is a migrant worker without insurance. He demonstrated problems with timely follow-up to ensure he was getting the appropriate medicines after his initial diagnosis of rhabdomyolysis.

This patient developed extensive calcifications in the subcutaneous tissue of his right flank (Figure 1) and abdomen (Figure 2). This area is not typically affected in adults; however, the trauma from his appendectomy may have initiated an

Figure 1. Coronal view of computed tomography showing extensive calcification of right flank.

Figure 2. Sagittal view of computed tomography showing right-sided calcification as well as small calcific foci on left anterior abdomen.
inflammatory response in this region. This inflammation likely precipitated the formation of the calcium deposits in his abdominal wall with resultant calcinosis.4

Treatment is largely based on controlling the likely autoimmune component of the disease. One possible etiology is complement-mediated inflammation at the vascular level; another is a direct cytotoxic effect of lymphocytes on the muscle cells. Initial therapy consists of high-dose steroids. Immunosuppressant and cytotoxic agents are often given early in the course in order to wean off steroids, thereby limiting the toxic effect of chronic steroids. Methotrexate, azathioprine, and mycophenolate mofetil are common agents used in dermatomyositis. If this combination of drugs is unsuccessful, intravenous immunoglobulins have shown promise for short-term treatment.5

Calcinosis is a difficult complication to treat. Some studies have shown success with diltiazem, aluminum hydroxide, and even alendronate in children.6,7 However, refractory cases of calcinosis that cause pain or interfere with function may need to be referred for surgical excision.8

Treatments for the rash are first focused on controlling systemic processes, but providing protection is also extremely important through limiting sun exposure and using sun protective clothing and sunscreen.

Current theories indicate calcinosis may be a consequence of untreated or unaggressively treated dermatomyositis. In juvenile dermatomyositis, early aggressive intervention offers the best protection from development of calcinosis. This adult patient had been experiencing symptoms for about 14 months before he received aggressive treatment, most likely another factor in his development of calcinosis.3 This patient suffered to the point at which he was no longer able to complete his activities of daily living. Luckily, he showed rapid signs of improvement with high-dose steroids and azathioprine. He was given prednisone and azathioprine also as an outpatient with continued improvement in his symptoms. Initially, intravenous immunoglobulin was considered because of the severity and progressive nature of his symptoms; however, it was never given owing to his response to other medicines.

The overall prognosis for patients treated with dermatomyositis is good, with a 5-year survival rate of 95% and a 10-year survival rate of 84%. Those who die from the condition often have pulmonary or cardiac manifestations as well. While most persons with dermatomyositis improve and respond to therapy, up to 30% experience long-term consequences.9 At a 2-month follow-up appointment, the patient was ambulating without assistance and was able to complete activities of daily living. He still reports some difficulty in standing from low sitting positions but continues to improve as his disease process is better controlled. The patient continues to take immunosuppressants and diltiazem. His calcifications remain, but his pain and symptoms are controlled.

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