RESIDENT ROUNDS: PART III

CDS Protocol SAPHO Syndrome

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INTRODUCTION

History of Present Illness

A 57 year-old African American man presented with a 30-year history of painful skin lesions. The patient noted that the lesions begin as tender knots, which drain purulent fluid and become thick and crusted over time. The patient also noted a distant history of severe scarring acne as well as persistent bone pain, joint pain, and morning stiffness.

Past Medical History

Past medical history included diabetes mellitus, anemia, and benign prostatic hypertrophy.

Medications

Medications included insulin, metformin, and ranitidine.

Allergies

There were no known drug allergies.

Family History

Patient reported several family members with "bad skin".

Social History

The patient reported a social history of two to three alcoholic drinks per week, 1 pack of cigarettes per week, distant history of heroin.

Physical Exam

The patient's cutaneous exam was notable for several patches of scarring alopecia on the scalp and deep cribiform scarring over the bilateral cheeks, nose and forehead. On the right temple, left proximal medial arm and left proximal medial thigh were large fluctuant plaques with overlying cribiform ulcerations, thick overlying crusting and purulent drainage. The extremities had wide spread scarring and innumerable hyperpigmented vegetative nodules. The patient endorsed tenderness of the sternum to palpation.

LABS/Imaging

Abnormal: Hgb 8.5, tissue culture grew multiple mixed microorganisms but no predominating pathogens.

Bone Scintigraphy: Extensive periosteal reaction involving both femurs throughout their length consistent with hyperostosis.

Negative/normal: BMP, LFTs, ANA, RF, HIV, hepatitis serologies, RPR, quantiferon gold, tissue fungus culture & stain, tissue mycobacteria culture & smear.

Histopathology

Right thigh: The sections reveal a markedly corrugated epidermis with irregular proliferative epithelial hyperplastic and reactive changes without evidence of nuclear atypia. There is a deep dermal infiltrate composed of lymphocytes, plasma cells and aggregates of neutrophils. The dermis also shows variable fibroplasia with some edema and telangiectasia. Acantholysis is not noted but there is some dyskeratosis associated with exocytosis of neutrophils. Immunohistochemistry for Treponema and special stains (DPAS, Gram and acid fast bacilli) were negative for microorganisms. Direct immunofluorescence was negative for immune deposits.

Diagnosis

The diagnosis was SAPHO syndrome.

Treatment and Course

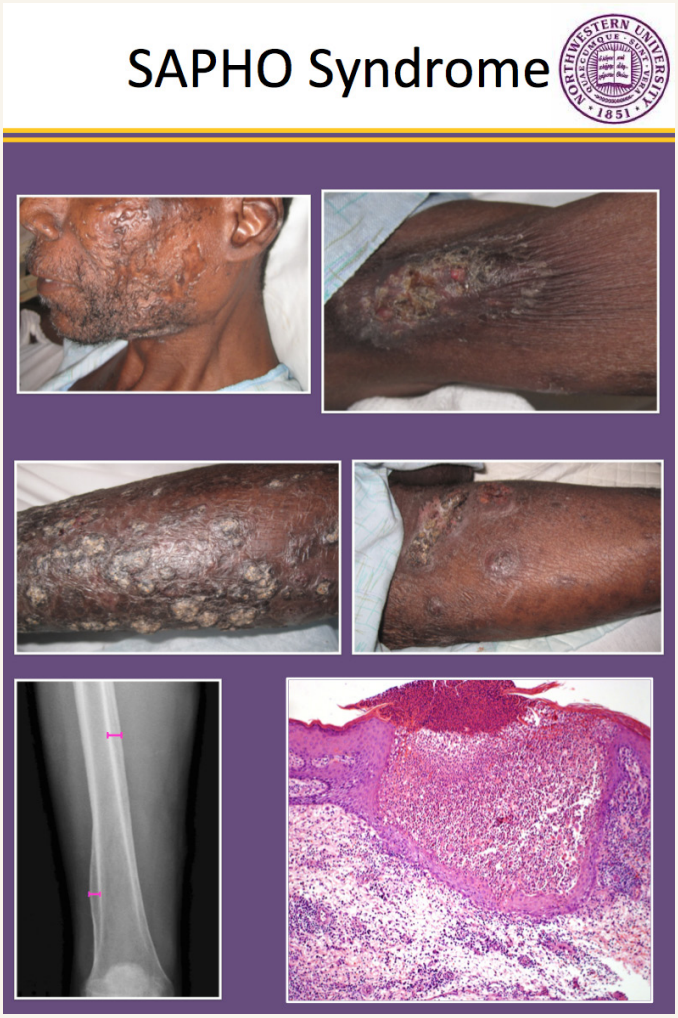
Our preferred treatment strategy is to start adalimumab; however, the patient's insurance denied coverage. We are currently attempting to get the medication at no cost to the patient through a patient assistance program. In the meantime, symptomatic lesions are treated with intralesional triamcinolone acetonide suspension.

DISCUSSION

The syndrome of synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) represents a rare constellation of chronic overlapping osteoarticular and cutaneous manifestations. The clinical presentation is heterogeneous and frequently incomplete, resulting in diagnostic difficulties.

The typical cutaneous manifestations include palmoplantar pustulosis and severe acne, which can manifest as acne conglobata,

FIGURE 1.



acne fulminans or hidradenitis suppurativa. Pyoderma gangrenosum, Sweet's syndrome and other neutrophilic dermatoses can also be seen. Osseous involvement can range from osteitis with sclerosing features to hyperostosis with cortical thickening resulting from chronic periostal reaction. Erosive arthritis can also occur. Osteoarticular manifestations most commonly involve the anterior chest wall, especially the sternocostoclavicular region, but can also involve the spine, pelvic girdle, sacroiliac joints, peripheral joints, long bones or mandibles. These osteoarticular changes are best characterized by total body scintigraphy, but plain radiographs, computed tomography and magnetic resonance imaging studies can also be alternatives.

The pathogenesis of SAPHO syndrome remains poorly understood but likely involves infectious, genetic and immunologic mechanisms. A pathogenic role of *Propionibacterium acnes* (*P. acnes*) causing a reactive osteitis in genetically predisposed individuals has been proposed since the microbe has been isolated from bone biopsy specimens. However, it remains unclear if the osteoarticular changes seen in SAPHO syndrome are directly related to *P. acnes.* Associations with inflammatory cytokine overproduction and neutrophil dysfunction have also been reported.

SAPHO syndrome generally has a chronic and protracted course; however, the severity of the symptoms can vary greatly from person to person. Given the rarity of the disease and the lack of large controlled studies, treatment remains empiric to date. Non-steroidal anti-inflammatory agents and analgesics generally provide only modest improvement. Bisphosphonates can be used given their anti-inflammatory effects and their inhibition of bone resorption and turnover. Antimicrobial agents may be considered given the suspected role of *P. acnes*, but their efficacy remains anecdotal. Recently, treatment with TNF-alpha inhibitors and interleukin-1 receptor antagonists has shown promise for refractory cases.

DISCLOSURES

None of the authors have disclosed a conflict of interest.

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