Sporotrichosis mimicking cellulitis

Gul Karagoz, Ayten Kadanali, Senol Comoglu, Nur Betul Unal Ozdemir, Arzu Irvem

Abstract
Sporotrichosis is a cutaneous or systemic fungal infection caused by *Sporothrix schenckii*. The infection is characterized by nodular, pustular, or ulcerative lesions. The infection usually occurs after traumatic implantation of the fungus into the skin. We report a case presenting the first cellulitis and later on as a non-healing ulcer which was diagnosed by punch biopsy as sporotrichosis and managed successfully with itraconazole. A 56-year-old woman admitted to our department with complaint acute onset of swelling of the right lower-extremity with erythema and warmth. The patient was diagnosed initially as cellulitis and started on ampicillin-sulbactam. A diagnosis of sporotrichosis was made with histological examination skin biopsy, and the patient was started on itraconazole. 1 month after commencement of antifungal treatment, the ulcer began to dry up and at 3 months the lesions had healed. This case shows that if a wound does not respond to antibiotics in cases with the ulcer; some rare etiological agents should be considered.

Introduction
Cellulitis is an acute non-necrotizing bacterial infection of the dermis and subcutaneous tissue usually caused by trauma. It is characterized by erythema, edema, warmth, and fever. The diagnosis is clinical and the most common complication is a recurrence. The majority of infections (85%) is due to Group A beta-hemolytic streptococcus (1). The treatment of cellulitis consists of an antibiotic with rest of the concerned area.
Sporotrichosis is subacute to chronic infection caused by the thermally dimorphic fungus *Sporothrix schenckii*. Infection usually involves cutaneous and subcutaneous tissues (2). Lymphocutaneous sporotrichosis is characterized by nodular, pustular, or ulcerative lesions.

In this article, we aimed to present a sporotrichosis case that was misdiagnosed as cellulitis due to remarkable similarity between their clinical findings. A punch biopsy was performed since symptoms of the patient were not improved with long-term intravenous antibiotics and the diagnosis of sporotrichosis was made by the histopathologic analysis of the samples. The patient has been successfully treated with itraconazole following correct diagnosis.

We do not commonly confront sporotrichosis in our practice. We are, therefore, prompted to report the case.

Case Report
A 56-year-old woman admitted to our department with complaint acute onset of swelling of the right lower-extremity with erythema and warmth. She had no previous history of cellulitis. Pertinent findings on physical examination included a temperature of 37.2°C, a heart rate of 70 beats/min, and focal changes of the right tibial area (Figure 1a). There were confluent macular erythema and diffuse swelling of the lateral and anterior tibial regions. At admission, laboratory tests showed white blood cell count: 13,200 cells/mm³, C-reactive protein: 42, and erythrocyte sedimentation rate: 79 mm/h. Doppler venous scanning showed evidence of deep venous abnormalities. The patient was diagnosed initially as cellulitis and started on ampicillin-sulbactam. Because of the lack of improvement
in lower-extremity findings, daptomycin therapy was added on the 12th day. During the therapy, an ulcer was occurred due to rupture of the bullae which was located 3 cm superior of lateral malleolus (Figure 1b). Tissue biopsies were taken and sent to microbiological and pathological analysis. Tissue culture from the ulcer failed to grow any organism, and a course of antibiotics did not resolve the problem. Mycobacterial cultures and Mycobacterium tuberculosis complex polymerase chain reaction from the tissue biopsies were also negative. On histological examination of skin, biopsy showed a granulomatous reaction with multiple giant cells. On questioning, the patient confirmed that she had done some actual gardening before the erythema on her leg and dermatology consultation was made again. A diagnosis of sporotrichosis was made, and the patient was started on itraconazole 200 mg/day. The infection appeared to be controlled without further spreading or enlarging of the ulcer (Figure 1c). 1 month after commencement of antifungal treatment, the ulcer began to dry up and at 3 months the lesions had healed (Figure 1d).

Discussion

Sporotrichosis usually involves cutaneous and subcutaneous tissues. Pulmonary, osteoarticular, meningeal, and disseminated forms of sporotrichosis are uncommon and appear to occur primarily in immunocompromised patients who have a history of alcoholism, diabetes mellitus, chronic obstructive pulmonary disease, and AIDS (3-7). Lymphocutaneous and cutaneous forms of sporotrichosis occur in a healthy individual during the course of outdoor work. They are not life-threatening, but they will not recover spontaneously without antifungal treatment (8). Infections are most often sporadic and are usually associated with trauma during the landscaping, rose gardening, and other activities that involve inoculation of soil through the skin. Sporotrichosis usually arises after soil, moss, or other organic material containing the fungus is inoculated into the skin or subcutaneous tissue (9). After cutaneous inoculation of the fungus, a papule develops then usually ulcerates but may remain nodular with overlying erythema. Drainage from the lesion is not grossly purulent and has no odor. Similar lesions may occur through the lymphatic channels (10). Sporotrichosis can also be transmitted from infected cats or scratches from digging animals such as armadillos (10-14). Cutaneous and subcutaneous lesions were categorized into 3 separate clinical classifications: Lymphocutaneous disease, fixed lesions, and multifocal (disseminated) cutaneous disease. In lymphocutaneous disease patients had classical nodular lymphangitis, usually involving an extremity, with characteristic “marching” progression proximally from a distal lesion. In fixed lesions, patients had 1 or 2 ulcerative or plaque-like proliferative lesions without classical nodular lymphangitis. Multifocal cutaneous disease was defined as ≥3 lesions involving at least 2 anatomic sites (9). Both clinical forms, lymphocutaneous and fixed cutaneous, may present ulcerated, nodular or erythematosus infiltrated lesions, similar to our patient’s lesion described above.

Although the lymphocutaneous lesions have a classic presentation in many cases, other diseases (including non-tuberculous mycobacterial infections, nocardiosis, leishmaniasis, tularemia) can make lesions similar to those seen with sporotrichosis (15). Because it is uncommon and clinical manifestations are similar to other infections, the diagnosis of sporotrichosis is often delayed.

Byrd et al. mentioned that biopsy alone without tissue culture is insufficient to diagnose Sporothrix infection in their case report (16). We know that isolation of the organism from the tissue culture is always the gold standard, but if there is no growth on the culture and the clinical signs be consistent with histological examination, it can be diagnosed. For treatment of sporotrichosis, itraconazole 200 mg orally daily is recommended to be given for 2-4 weeks after all lesions have resolved,
usually for a total of 3-6 months (17). Because response rates of 90-100% were reported with itraconazole therapy for the treatment of cutaneous and lymphocutaneous sporotrichosis (6,18,19).

**Conclusion**

Despite the striking resemblance of the clinical behavior with cellulitis, histopathology confirmed sporotrichosis in this case. This paper shows that while a wound does not respond to antibiotics conventional therapy in cases with the ulcer, some rare etiological agents should be considered and we also emphasize the importance of making a definitive histological diagnosis in unusual ulcer cases.

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