Aspergillus bursitis is an uncommon condition demonstrated as a nonspecific soft tissue mass. To our knowledge, the ultrasonographic findings of aspergillus bursitis in immunocompromised patients have not been previously reported. Here, we report a case of aspergillus bursitis in a renal transplant recipient, accompanied by the associated ultrasonographic findings.

Index words: Aspergillosis  
Bursitis  
Ultrasonography

Case Report

A 54-year-old male was referred to our hospital with a six-month history of a right heel mass. The patient had undergone a renal transplantation eight months prior as a result of chronic renal failure. His immunosuppression was prednisolone based. A physical examination revealed that the soft tissue mass was located in the right heel. The patient was without pain or tenderness. The dimensions of the soft tissue mass measured approximately 1.5×1.5 cm. The laboratory blood tests revealed a normal complete blood count, biochemical profile, erythrocyte sedimentation rate, and the C-reactive protein level.

On a plain radiography, the soft tissue mass showed no evidence of calcification.

Next, an ultrasonography was performed using a multi-frequency (5- to 12-MHz) linear-array transducer attached to a iU-22 (Philips Medical Systems). The mass was located in the superficial and medial portion of the Achilles tendon. Furthermore, the mass had a relatively well-defined margin with bursal wall thickening and increased internal echogenicity [Fig. 1A]. A color Doppler imaging revealed no evidence of a vascular signal. The
ultrasonographic impression was determined to be a nonspecific bursitis.

An excisional biopsy was performed and the mass was easily and completely removed from the right heel.

Upon a histopathologic examination, the specimen showed a dense, solid infiltration of giant cells, histiocytes, and lymphoplasmacytes mixed with intra- and extracellular fungal hyphae and spores. The hyphae were septate with acute angle branching. The special staining result for the Gomori methenamine silver staining was positive (Fig. 1B). These findings were consistent with the diagnosis of aspergillosis.

To date, the patient showed no signs of lesion recurrence, and the patient’s overall good physical condition has remained unchanged.

**Discussion**

Opportunistic fungal infections may cause either mild symptomatic or life-threatening complications, and represents a major cause of morbidity and mortality in immunocompromised hosts such as individuals who have undergone organ transplantation. The pathogenesis of the osteoarticular involvement of fungal infections in solid-organ transplant recipients is not completely understood; however, it is thought that the fungal infections may occur either by contiguous spread from a cutaneous focus, through direct tissue inoculation by the organism, or by hematogenous dissemination (4).

Aspergillus is a ubiquitous saprophyte that lives in decaying vegetation and is generally non-pathogenic in immunocompetent hosts. However, in immunocompromised hosts, aspergillus can cause pulmonary or systemic infection. After Candida albicans, the aspergillus species represents the second most common cause of opportunistic fungal infections in humans (8).

Few reports describing fungal bursitis cases exist in the literature (3-7). Among these reports, only one case describing septic olecranon bursitis caused by an aspergillus species exists (4). However, not all of these patients were in an immunocompromised state and these reports did not include imaging findings such as US, as we did in our case.

To the best of our knowledge, the ultrasonographic findings of fungal bursitis have not yet been reported. However, it is thought that they are similar to those of pyogenic or chronic inflammatory bursitis. Pyogenic or chronic inflammatory bursitis reveals peribursal edema, bursal wall thickening, and distension by fluid or gelatinous material of mixed echogenicity. Occasionally, internal debris and calcification may be apparent. A previous report indicates that a color Doppler imaging may reveal a bursal wall hyperemia (9). Many of these findings are consistent with our case.

To the best of our knowledge, this is the first case report of a definite ultrasonographic imaging of the aspergillus infection involving the subcutaneous calcaneal bursa. Although a rare condition, aspergillus bursitis

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**Fig. 1.** A 54-year-old male with a history of renal transplantation and a right heel mass in the last six months.

A. A gray-scale US examination revealed that the mass has a relatively well-defined margin and shows internal increased echogenicity (white arrows). The Achilles tendon is located in the deep portion of the mass (white asterisk).

B. The histopathologic findings showed branching septate hyphae at acute angles, suggestive of the Aspergillus species (Gomori Methenamine silver stain; × 400).
should be included in the differential diagnosis of immunocompromised patients with ultrasonographic findings of pyogenic or chronic inflammatory bursitis.

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References