

# *Paecilomyces lilacinus* Septic Olecranon Bursitis in an Immunocompetent Host

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## Abstract

*Paecilomyces lilacinus* is a filamentous fungus that is a rare cause of infection in immunocompromised human hosts. We present a case of *P lilacinus* septic olecranon bursitis in an otherwise healthy 78-year-old male. This patient's case was complicated by wound breakdown after bursectomy and appropriate anti-fungal treatment, requiring a local soft tissue rearrangement.

This case demonstrates the need for appropriate and timely medical and surgical treatment in infections involving *P lilacinus*, which are not isolated solely to systemically immunocompromised and medically-ill patient populations. In cases where the patient is systemically immunocompromised or has been rendered locally immunocompromised, it is essential to obtain a full culture work-up, including fungi.

Cases of septic olecranon bursitis are typically occupationally-related with a history of trauma or penetrating injury to the area. Risk factors for septic olecranon include diabetes mellitus, alcoholism, chronic renal insufficiency, immunodeficiency, and intravenous drug abuse. *Staphylococcus aureus* is by far the most common pathogen, but others include *Streptococcus*, anaerobes, pseudomonas, *Mycobacterium tuberculosis*, and *Mycobacterium marinum*.<sup>1</sup>

*Paecilomyces lilacinus* is a filamentous fungus, related to *Penicillium* and *Aspergillus*, which is a ubiquitous saprophyte. It is a rare cause of infection in human hosts, usually occurring iatrogenically or in an immunocompromised host.<sup>2</sup> Our review of the English literature reveals no previously reported cases of septic olecranon bursitis with *P lilacinus* in a non-immunocompromised patient. We present a case of septic olecranon bursitis with *P lilacinus* in an immunocompetent, healthy patient. The authors have obtained the patient's

informed written consent for print and electronic publication of the case report.

## CASE REPORT

A 78-year-old, healthy, right-handed male presented to our clinic with a draining and possibly septic left olecranon bursitis.

Two weeks prior to his visit to our clinic, he was evaluated several times at an urgent care facility. The initial treatment there included aspiration of 3 mL of straw-colored fluid and steroid injection of the bursa. He presented back to the urgent care 12 days after his initial urgent care evaluation with worsening pain and swelling. Upon re-aspiration of the bursa, 10 mL of straw-colored fluid was obtained and sent for full culture work-up. Despite being started on oral antibiotics, the patient developed purulent drainage and soft-tissue breakdown at the site of the prior aspirations. He was referred to our clinic for surgical evaluation, as conservative treatments were ineffective.

On our initial evaluation, he reported a history of mild, recurrent olecranon bursitis of his left elbow that had been managed with compressive dressings. These episodes, including the current one, were not preceded by any trauma, bites, or identifiable injury. Further questioning revealed the patient to be an avid gardener and in caring for his garden, frequently crawled on the soil.

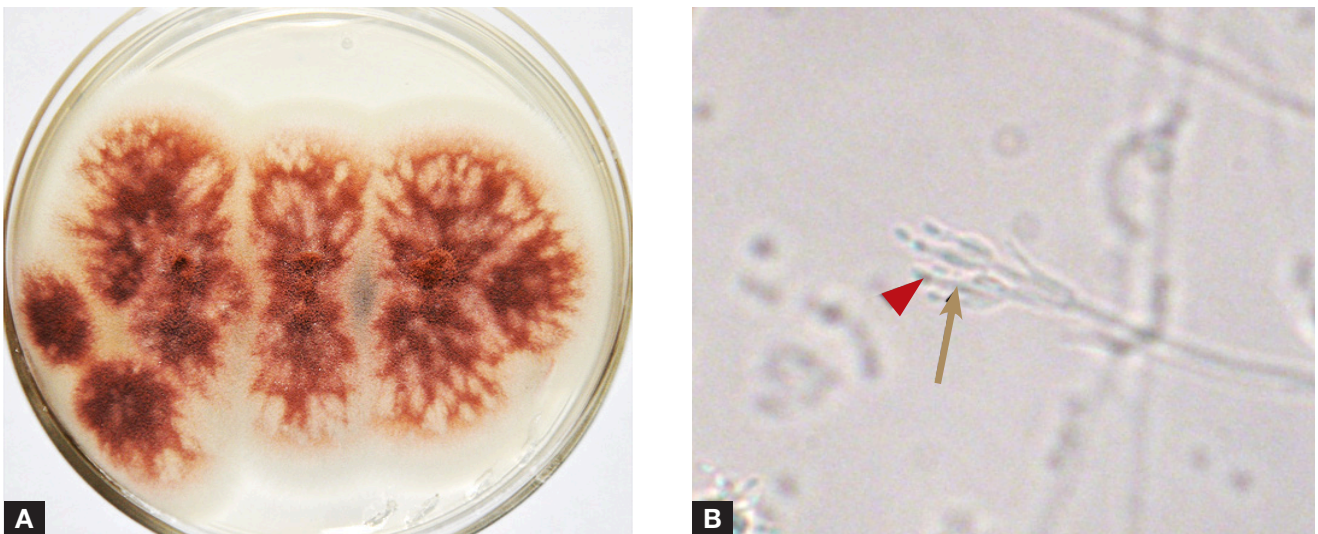
The patient underwent irrigation and debridement with olecranon bursectomy. The area of soft-tissue breakdown was elliptically excised and the wound closed. Operative cultures, as well as those from the urgent care, both grew a filamentous fungus, *P lilacinus* (Figure). An infectious disease consultation was obtained and the patient completed a 6-week course of oral voriconazole.

Four weeks following bursectomy, the patient developed a medial soft tissue defect (10 mm x 7 mm) with surrounding fibrinous exudate and exposed olecranon. He was taken back to the operating room for a repeat irrigation and debridement where the wound was noted to be clean. The soft-tissue defect was managed with a local tissue rearrangement by performing a rotational flap utilizing the skin overlying the triceps. He was placed into a well-padded posterior splint in extension to protect the wound and his splint and sutures were removed 2 weeks postoperatively. At his 6-week follow-up appointment, having completed his anti-fungal therapy 2 weeks prior, his wound had healed without any signs of infection or soft tissue compromise.

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**Figure.** (A) Macroscopic morphology of *Paecilomyces lilacinus*. Colonies initially appear wet and smooth, but quickly take on a lavender color with powder-like texture. (B) Microscopic examination of *P lilacinus* at 40x magnification reveals conidia (arrowhead) that are produced from basally-swollen phialides (arrow), which taper toward their apices.

(Photos are courtesy of Christopher D. Pfeiffer, MD, Medical Microbiology Fellow and Barbara D. Alexander, MD, MHS, Director of Transplant Infectious Disease; Clinical Mycology Lab; Duke University Medical Center, Durham, North Carolina).

## DISCUSSION

*P lilacinus* is a hyaline hyphomycete that is found worldwide in the soil and air.<sup>2</sup> Species of this fungus are uncommon human pathogens, but cause severe infections in immunocompromised patients. There have been increasing reports of infection in immunocompetent hosts.<sup>3-4</sup>

In a review of 119 cases of human infection by *P lilacinus*, 51.3% were cases of oculomycosis, 35.3% involved the skin and subcutaneous tissues, and the remaining 13.4% included cases of sinusitis, vaginitis, lung abscess, fungemia, and onychomycosis.<sup>2</sup> Additionally, there are rare cases of infection in immunocompetent patients without other identifiable risk factors, including prepatellar bursitis,<sup>5</sup> skin and soft tissue infections,<sup>3</sup> and vaginitis.<sup>4</sup> Interestingly, the case reported by Westenfeld and colleagues<sup>5</sup> was in a healthy 35-year-old male with septic prepatellar bursitis and adjacent soft tissue infection. He was initially treated with several aspirations and a local steroid injection, suggestive of an iatrogenic etiology.

Wessolossky and colleagues<sup>6</sup> reported a case of multidrug resistant *P lilacinus* olecranon bursitis in an 86-year-old patient with chronic lymphocytic leukemia responsive to bursectomy and ketoconazole.

We present a case of *P lilacinus* septic olecranon bursitis in an otherwise healthy 78-year-old male. Prior to the patient's case of septic bursitis, he related a history of mild, recurrent episodes of olecranon bursitis without prior injury, other trauma, or local bursal aspiration. Cultures were not sent on his first aspiration at the urgent care. However, cultures from both the second aspiration and eventual bursectomy grew *P lilacinus*, arguing against this fungus as a laboratory contaminant. It is plausible that the mold was introduced into the bursa during the first attempted aspiration. It is also possible that the

previously administered corticosteroid injection rendered this patient 'locally immunocompromised.'

This patient's case was complicated by wound breakdown after bursectomy and appropriate antifungal treatment, requiring a local soft tissue rearrangement. At most recent follow-up, his wound is healed and does not appear to be infected. This case demonstrates the need for appropriate and timely medical and surgical treatment in infections involving *P lilacinus*, which are not isolated solely to systemically immunocompromised and medically-ill patient populations. In cases where the patient is systemically immunocompromised or has been rendered locally immunocompromised, it is essential to obtain a full culture work-up, including fungi.

## AUTHORS' DISCLOSURE STATEMENT

The authors report no actual or potential conflict of interest in relation to this article.

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