

# *Peyronellaea gardeniae* fungus infection presenting as posttraumatic hemorrhagic bullae and desquamation

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## INTRODUCTION

*Peyronellaea gardeniae* is a rare fungus, first described in 1966 by Chandra and Tandon,<sup>1</sup> which was never previously identified as a source of infection in humans. We report a case of a 72-year-old white man with multiple medical comorbidities who presented with extensive hemorrhagic bullae on his left upper extremity secondary to infection with *Peyronellaea gardeniae*.

## CASE REPORT

A 72-year-old white man with a medical history of chronic obstructive pulmonary disease, atrial fibrillation on warfarin, hypertension, and diabetes was transferred to our academic hospital for evaluation of extensive bruising and blistering on his left upper extremity. The patient's sister reported using a discarded wheelchair for the last 2 weeks, which was missing the left arm pad. Ten days before presentation, the patient noticed a "reddish bruise" where his left forearm rubbed against the bare metal arm of the wheelchair. Over the following days, this area continued to expand in size and became darker red and black. Three days before presentation, the patient's warfarin was discontinued because of concern for an enlarging hematoma. Because of increasing pain and new-onset generalized weakness, the patient's wife took him to an outside hospital where he was admitted with fever and started on broad-spectrum antibiotics. Computed tomography scan of the arm showed only subcutaneous edema. Despite treatment with antibiotics, there was progressive worsening of the skin lesions,



**Fig 1.** Extensive pink-black necrotic plaques, flaccid hemorrhagic bullae, and desquamation on left upper extremity.

and he was transferred to our hospital for further evaluation.

On examination, the patient had coalescing black and dark burgundy flaccid bullae, with admixed denuded patches of skin and surrounding erythema extending from the left wrist to the proximal upper extremity (Fig 1). Two punch biopsies were performed—one biopsy for hematoxylin-eosin and one for bacterial, fungal, and acid-fast bacilli cultures.

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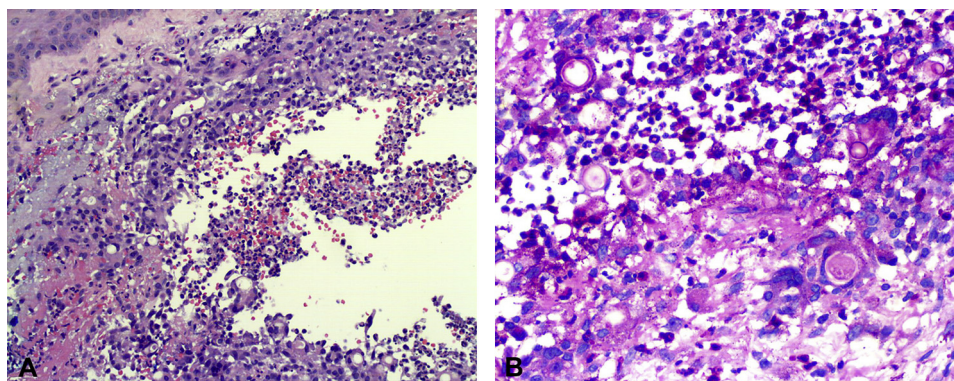
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**Fig 2.** Histopathology of punch biopsy specimens. **A**, Hematoxylin-eosin stain showed fungal spores in the presence of suppurative and granulomatous inflammation. **B**, Periodic acid–Schiff stain was positive for fungal spores; one organism with a prominent nucleus is present in the right lower quadrant of the image.



**Fig 3.** Significant improvement with re-epithelialization after 2 weeks of amphotericin B treatment.

Examination of the skin biopsy (after staining with hematoxylin-eosin) found fungal spores and suppurative and granulomatous inflammation (Fig 2). Preliminary culture results showed growth of fungal elements, and the patient was started on amphotericin B with significant improvement and healing of skin lesions during the following 2 weeks (Fig 3). Almost 4 weeks later, final results from the fungal culture revealed *Peyronella gardeniae*, and DNA sequencing was confirmatory.

## DISCUSSION

*P gardeniae* is a fungus that was originally described as causing pink to burgundy irregular

circles on the leaves of *Gardenia florida*.<sup>1</sup> It was further classified into the genus *Phoma* in 1990 and sequenced in the Netherlands.<sup>2</sup>

Traumatic wounds are a known site for infection by fungi. The most common mechanisms of injury that lead to posttraumatic fungal infection are traffic accidents or farm accidents, and the most common sites of involvement are the limbs.<sup>3</sup> *Mucorales* causes most posttraumatic fungal infections, followed by *Aspergillus*, with systemic symptoms manifesting 10 days after initial injury.<sup>3</sup> *Candida albicans* is the most commonly colonized fungal species in burn patients, a comparable population to patients with posttraumatic wounds caused by breakdown of the skin barrier.<sup>4</sup> Additionally, other types of *Candida* as well as *Aspergillus*, *Fusarium*, *Mucor*, and *Absidia* may cause infection in burn victims.<sup>5</sup> Because wound cultures are positive in less than 30% of posttraumatic fungal infections, a high level of suspicion is necessary so surgical debridement and appropriate antifungal medications may be initiated in a timely manner.<sup>6</sup>

We report a case of *P gardeniae* causing a post-traumatic fungal infection in an elderly patient with multiple comorbidities. Although fungal infection was not initially high on our differential diagnosis, biopsy and tissue cultures aided in rapid diagnosis and proper treatment. Our case shows an unusual organism causing an atypical clinical presentation of cutaneous fungal infection, thus, highlighting the importance of keeping atypical fungal infections in mind when approaching patients with acute-onset hemorrhagic and desquamative dermatoses after trauma.

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