

Rare emerging disease claims Texas girl's leg

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A 14-year-old Texas girl was finally cured of an oft-fatal emerging disease when doctors amputated her lower leg, where the infection arose, after various antimicrobials proved ineffective. The culprit was *Pythium insidiosum*, a fungus-like microbe which rarely causes disease in humans and then primarily in Thailand. The case “clearly highlights the need for clinicians to have the best support possible from the clinical microbiology lab,” says Don Murphey of Cook Children’s Medical Center, who served as attending physician during the case. The case report is published in the April *Journal of Clinical Microbiology*.

The girl, otherwise healthy, presented to an urgent care facility with a 2-week history of a continuously enlarging erythematous bump on her lower leg, having reported recently swimming in an algae-filled pool. “Over the course of several weeks, what started as a very small lesion grew to involve most of her leg,” says first author Stephen J. Salipante, of the University of Washington, Seattle. “Initial cultures of the wound suggested that this was a bacterial infection, and it was treated as such, but without success.”

“She eventually needed to be hospitalized,” says Salipante. Her treatment team at Cook Children’s hospital tried increasingly aggressive medical and surgical management, including different antibiotic regimens, antifungals, and surgical debridements, but the infection simply didn’t respond. “Given the microscopic appearance of the organism, our working hypothesis was that this was some kind of unusual, and very aggressive [fungus](#),” says Salipante.

However, sequencing a segment of DNA that is useful for categorizing fungi, the ITS1 sequence, “revealed that this was not a fungus at all—rather, the DNA sequence very closely matched... *P. insidiosum*,” says Salipante. This microbe has long been known to be a veterinary pathogen, primarily affecting horses and dogs, disfiguring them, often fatally. Only about 150 human cases have been reported in the literature—nearly all of them in [Thailand](#). “Needless to say, this was an unexpected result, as this young woman had not left Texas,” says Salipante.

But “this organism did not demonstrate sensitivity in vitro to any of the antifungals or [antimicrobials](#) that had some activity for other isolates,” says Murphey. Efforts at treatment even included trying an experimental therapeutic vaccine for *Pythium*-afflicted horses,” says Murphey. “When it became clear to all of us that we were not going to clear the advancing local infection, we went on to amputation.”

The amputation “undoubtedly saved this young woman’s life,” says Salipante. Now, nearly six months later, there is no vestige of infection.

“Pythiosis is believed to be an emerging human pathogen, meaning that the number of cases are expected to go up in the future,” says Salipante.

“We have demonstrated that molecular identification by PCR screening and DNA sequencing provides a strategy to allow definitive identification of a range of pathogens, even unsuspected ones,” says Salipante.

“DNA sequencing is a not just a tool for discovery anymore - it provides critical data for making decisions impacting patient care,” says coauthor Brad T. Cookson of the University of Washington. “I would add that medical care currently offers patients something very special - our report demonstrates the vitality and utility of collaborative, transdisciplinary

approaches for solving challenging medical problems.”

More information: S. J. Salipante, et al. 2012. Molecular Diagnosis of Subcutaneous *Pythium insidiosum* Infection by Use of PCR Screening and DNA Sequencing. *J. Clin. Microbiol.* 50:1480-1483.

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