

SOUTHWESTERN NEWS

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UT SOUTHWESTERN PLASTIC SURGEONS TREAT HAND INVADED BY FAST-MOVING BACTERIA

DALLAS-July 21, 1999-Through surgery and the latest wound-healing treatments, UT Southwestern Medical Center at Dallas physicians were able to save the hand of a Plano man who contracted an infection from a bacteria in the soil.

The man was infected by the potent bacteria from a seemingly innocuous pinprick-sized puncture wound while setting up a campsite for his son's baseball team. The interior of a tent pole had become filled with soil, so Joel Haka used an aluminum filament normally used to splice wire to clean it out. He subsequently jabbed himself in the fleshy area behind the thumb.

"It hardly bled at all," he said. "It didn't even require a Band-Aid."

But during the next four hours, Haka said, the skin around his hand grew increasingly red and oddly "crunchy," akin to a piece of crumpled paper. He was rushed to an area emergency room, where physicians took one look at the rotting skin around the wound and quickly called for an ambulance to take Haka to Parkland Memorial Hospital, where he could be treated by UT Southwestern specialists.

Clostridium perfringens, a dangerously invasive bacterium, had caused the fast-developing crepitation, said Dr. William Adams Jr., assistant professor of plastic surgery at UT Southwestern and chief of plastic surgery at Parkland.

"This bacteria can be contracted from soil via puncture wounds or large cuts," Adams said. "Within four hours, *C. perfringens* developed a gangrene-like infection in Joel's hand; an infection that could have led, in the most extreme case, to the loss of his arm."

C. perfringens cells proliferate after spore germination. The spores then release their toxin, which causes necrosis, or rotting, of the surrounding tissue. The bacteria themselves produce gas, which leads to a bubbly deformation of the infected tissues.

In a two-hour surgery, Adams and Dr. Brian Reagan, a plastic surgery resident, made an

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FAST-MOVING BACTERIA-2

incision over the infected region, examined the muscles for damage and then drained the area. They packed the unclosed wound with gauze and prepared to re-evaluate it in four hours. Their goal was to minimize the chance of the infection spreading to other areas of the hand and arm.

“With a rapidly developing infection such as this, we couldn’t close the wound,” Adams said. “Closing the wound in this situation may have resulted in worsening or recurrence of the infection.”

An intravenous shunt pumped a constant flow of high-dose penicillin antibiotics into Haka’s hand. The hand then underwent repeated hydrowash procedures once the acute infection began to heal. The whirlpool-like therapy promoted healing and kept the open wound clean.

Haka left the hospital four days later but still wasn’t in the clear. A home nurse continued the penicillin therapy for two weeks to ensure that the bacteria was gone. Eventually Haka, an avid golfer, should be able to hit the course again, Adams said.

“We started to worry about the possibility of this happening to kids,” said Barbara Haka, the patient’s wife. “What would happen if a child scraped a knee at camp or received a cut while playing in the yard?”

Physicians stress that while the bacteria is quite common, it requires certain conditions to manifest itself the way it did in Haka’s case.

“A scrape or abrasion is less likely to cause this type of rapidly moving infection,” Adams said. “Puncture wounds that offer a channel for the bacteria to travel deep into tissue are what causes problems.”

With summer outdoor activities on the upswing, Adams recommends that parents be alert and vigilant in the event of a wound infliction. Seek immediate medical attention if unusual swelling, pain and especially crepitus – air under the skin – occur at the wound site, he said.

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