

Contact Dermatitis from a Polyurethane Dialysis Catheter

To the Editor:

Contact dermatitis is common among hemodialysis patients, but rarely (after topical anesthetics, antiseptics, and antibiotics are ruled out), the catheter itself may be the cause. In this letter, we discuss a patient with allergic contact dermatitis likely caused by an indwelling hemodialysis catheter.

An 81-year-old Filipino male with chronic renal failure and diabetes mellitus presented with generalized pruritus and a rash on his chest 6 weeks after the insertion of a Vaxcel Plus 19 cm hemodialysis catheter (Boston Scientific Corporation, Natick, MA). Physical examination was notable for a large eczematous plaque on his left upper chest surrounding his catheter, as well as lichenified crusted papules with excoriations on his upper back, upper arms, and legs. The rash did not improve with cessation of the use of povidone-iodine swabsticks (Medline Industries, Inc., Mundelein, IL). The patient improved with the twice-daily application of clobetasol propionate ointment around his hemodialysis catheter and triamcinolone cream to his body. He wrapped the external portion of the catheter in gauze bandages daily. After 3 weeks, the chest rash and generalized pruritus had almost totally cleared with the use of gauze wrapping and topical steroids, suggesting that the patient was reacting only to the external portion of the catheter.

The result of patch testing with the 29-antigen Thin-Layer Rapid Use Epicutaneous (T.R.U.E.) Test (Mekos Laboratories A/S, Hillerød, Denmark) was negative, as was the result of open application testing with the povidone-iodine swabsticks. Patch testing was conducted via the application of four components of an identical catheter to the left volar forearm with white petrolatum and Hypafix Tape (BSN Medical GmbH, Hamburg, Germany) (Fig 1A). This application test was read at 48 and 108 hours. Three

of four components of the catheter caused a ++ reaction at 108 hours (see Fig 1B); all three of these components were made of polyurethane (Boston Scientific representative, personal communication, April 2008). Polyurethane is derived from isocyanates, but we were unable to patch-test with any isocyanates. The component that did not cause a reaction was wrapped in a protective felt covering. Ten volunteer controls were patch-tested the same way; none of them had a positive patch-test reaction to any of the four catheter components.

After 6 months, the patient required only triamcinolone cream several times a week and had near complete control of his symptoms. At this time, the patient underwent surgery for an arteriovenous (AV) fistula for reasons other than the dermatitis, which cleared completely after removal of the catheter.

Cases of allergic contact dermatitis from polyurethane-containing medical devices have been reported in association with plastic molders, a prone positioner, and hearing aids.¹ One case of contact dermatitis from a polyurethane vascular prosthesis (Thoratec Corp., Pleasanton, CA) has been reported.² The patient had developed contact dermatitis 2 weeks after placement; patch testing later confirmed these findings after the complete removal of the device.

Hemodialysis patients are especially susceptible to contact dermatitis. A prospective study of 75 hemodialysis patients noted that 19 patients had one or more positive skin-test results when exposed to 53 different potential allergens in the hemodialysis process; the most common was lidocaine-prilocaine cream (37%), followed by topical antiseptics.³ The results of all skin tests using fragments of dialysis membranes were negative. In another study of hemodialysis patients, 8% experienced dermatitis around the AV fistula,⁴ but the causative allergens were not identified.

Although contact dermatitis from catheter components and other polyurethane-containing products have been reported separately, our case likely demonstrates allergic contact dermatitis from polyurethane in a chronic hemodialysis catheter.

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From the David Grant Medical Center, Travis Air Force Base, Fairfield, CA.

Address reprint requests to Patrick E. McCleskey, MD, FAAD, Department of Dermatology (SGOMD), David Grant Medical Center, 101 Bodin Circle, Travis Air Force Base, CA 94535. E-mail: patrick.mccleskey@us.af.mil

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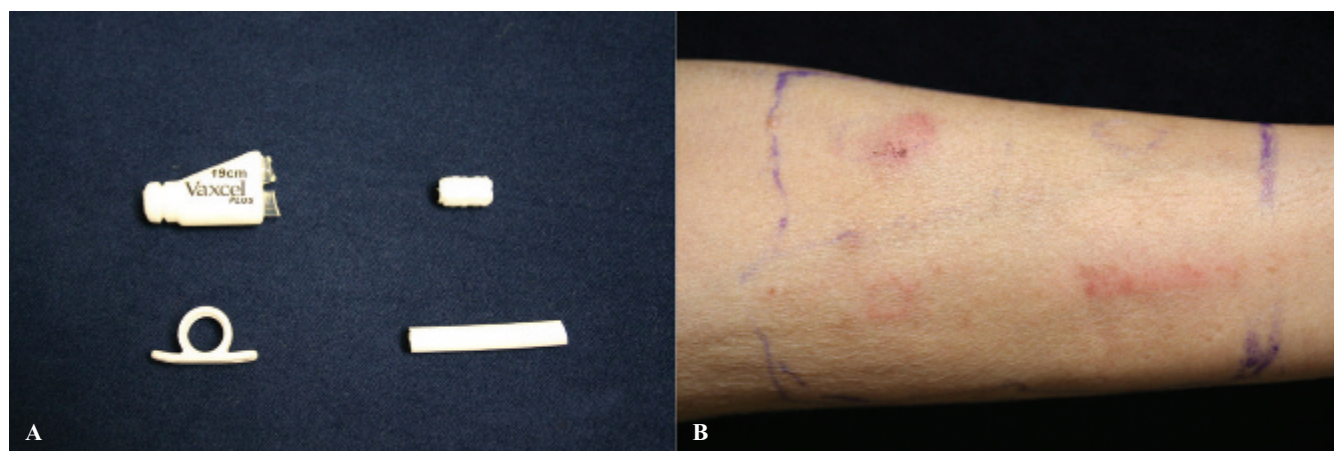


Figure 1. A, Patch-tested components of the Vaxcel Plus chronic dialysis catheter. B, Application test results at 108 hours.

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Maj. Patrick McCleskey, USAF, MC

Capt. Sarah Clark, USAF, MC

David Grant Medical Center, Travis Air Force Base, CA

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NEWS

Jennifer Nguyen Wins Second Contact Allergen Bee

Ponciano D. Cruz Jr

The second Contact Allergen Bee was held in New Orleans at the lunch session of the Annual Meeting of the American Contact Dermatitis Society on February 3, 2011.

Eight residents from the United States and Canada competed and Jennifer Nguyen from the University of Pennsylvania emerged as the Queen Bee champion.