**Vibrio metschnikovii**, a Rare Cause of Wound Infection

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We report the first case of a postoperative wound infection caused by *Vibrio metschnikovii* on the lower right leg of a patient after saphenectomy. Compared to the healing of an uninfected site, that of the right leg was delayed, and a cure was achieved by intensified wound care. Several swabs taken from the infected site grew a gram-negative rod in pure culture that was identified as *V. metschnikovii* by the VITEK 2 system. The source of the infection was not detected; however, the absence of putative risk factors (exposure to water or shellfish or an episode of diarrhea), the profession of the patient (butcher), and the isolation of *V. metschnikovii* in a variety of farm animals (chicken, cattle, swine, and horses) suggest that infections caused by *V. metschnikovii* may be regarded as zoonotic.

**Case Report**

*Vibrio metschnikovii* was isolated from a saphenous vein donor site on the lower right leg of a 64-year-old male patient. Ten weeks earlier, the patient had undergone cardiac surgery with saphenectomy performed on both legs. After 8 weeks of an uneventful postoperative course, the healing of the explantation site of the right leg was noted to be delayed in comparison to that of the left leg. Signs of local inflammation included erythema and discharge of exudate after pressure but no pain. Multiple swabs were taken from the two explantation sites, but only swabs from the wound of the right leg yielded polymorphonuclear leukocytes and gram-negative, slightly curved rods in great numbers. The same gram-negative rods were also demonstrated in follow-up samples. When the infection became apparent, topical wound care was intensified and resulted in spontaneous healing of the wound after another 8 weeks without administration of systemic antimicrobial treatment.

**Microbiology.** The isolates appeared as catalase-positive and oxidase-negative, gram-negative, slightly curved rods and produced good growth of grayish, opaque colonies 2 to 3 mm in diameter with complete hemolysis on Columbia sheep blood agar after 24 h. Growth on MacConkey agar was poor with positive lactose utilization. Reduction of nitrate to nitrite was delayed, and a cure was achieved by intensified wound care. Several swabs taken from the infected site grew a gram-negative rod in pure culture that was identified as *V. metschnikovii* by the VITEK 2 system. The source of the infection was not detected; however, the absence of putative risk factors (exposure to water or shellfish or an episode of diarrhea), the profession of the patient (butcher), and the isolation of *V. metschnikovii* in a variety of farm animals (chicken, cattle, swine, and horses) suggest that infections caused by *V. metschnikovii* may be regarded as zoonotic.

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**Discussion.** *V. metschnikovii* can be found in various aquatic habitats, including streams, lakes, marine waters, and sewage, as well as in shellfish (3, 13). Human infections by *V. metschnikovii*, in contrast, are a rare event: so far, only one case of
and several preparations containing topical agents (a mixture of streptodornase and streptokinase rhea. Postoperatively, both vein donor sites were treated with fresh water, seawater, or seafood or any episode of diarrhea (5, 14, 15) have been reported. The possible sources of any direct contact with blood or other bodily fluids with his legs. Interestingly, *V. metschnikovii* isolates with cytotoxic production indistinguishable from our isolate have recently been cultivated from aborted cattle, swine, and horses as well as the brain tissue of ducks and geese in different parts of Germany (12, 20). *V. metschnikovii* has also been found in the intestines of chickens and together with *E. coli* in cases of infectious hepatitis of fowl (6, 7). These observations suggest that *V. metschnikovii* may be a zoonotic organism and can be transmitted to humans via the food chain.

*Vibrio* spp. are well known to produce a variety of toxins and hemolysins (4). Miyake et al. described a cytolysin specific for *V. metschnikovii* (15) with hemolytic properties; however, its role in infections caused by *V. metschnikovii* is unclear. Our isolate clearly demonstrated hemolytic activity, especially after 2 days of growth and after enhancement in the CAMP test. The strain showed a different verocytotoxic activity than the Shiga toxin of *E. coli* did, and PCR for Stx genes was negative (protocol in accordance with reference 18; data not shown).

The finding that the hemolysin and the cytotoxin were produced at a physiological temperature points to their possible contribution to the pathological process. The presence of large plasmids in *V. metschnikovii* was described by Dalsgaard et al. (5). Using a standard plasmid preparation procedure (QIAfilter plasmid midi kit, catalogue number 12243; QIAGEN, Hilden, Germany), we were also able to demonstrate a plasmid of about 340 kb in our isolate.

In conclusion, this is the first report to describe *V. metschnikovii* as the cause of a postoperative wound infection in a human, possibly linked to the handling and slaughtering of animals. The culture and identification were unproblematic due to robust growth on routine medium and a unique biochemical profile. The risk for human infections due to contact with colonized or infected animals and the putative virulence factors hemolysin and cytotoxin should be further investigated.

**REFERENCES**


