

Letters to the editor

Tissue necrosis caused by extravasated propofol

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To the editor: Clinical reports and animal studies have shown that extravasated propofol causes no serious sequelae [1–3]. However, we experienced a case in which accidentally extravasated propofol is likely to have caused necrosis of the forearm skin and muscle.

A 37-year-old undernourished man with a history of alcohol abuse underwent an emergency operation (resection of the stomach and drainage of the abdominal cavity) for pancreatitis due to perforation of a gastric ulcer. Eleven days later, a reoperation was performed to stop the leakage in a lesion at the anastomosis of the stomach to the small intestine. After reoperation, the patient fell into septic shock, and continuous arteriovenous hemodialysis was instituted for acute renal failure. The patient was managed with a ventilator in the intensive care unit, and, for sedation, propofol (Diprivan) was administered continuously into the superficial vein on the palmar side of the right forearm through a 22-gauge cannula with 5% glucose solution. The amount of propofol administered ranged from 100 to 200 mg·h⁻¹ (1.8–3.6 mg·kg⁻¹·h⁻¹). No other medication was administered into this line. After 8 days of continuous infusion of propofol, phlebitis and swelling of the forearm were observed in the vein where propofol was administered. Because an extravasation of propofol was suspected, the venous line was removed. Propofol had been infused for approximately 12 h at a rate of 150 mg·h⁻¹ (2.7 mg·kg⁻¹·h⁻¹) until the accidental extravasation of propofol became evident. Necrosis developed in the skin and muscle of the forearm (Fig. 1). The necrotic lesion was limited to the perivascular area. Although granulation at the margin of the necrotic lesion had been recognized 2 weeks later, the tissue under the necrosis had not recovered, and a skin defect ultimately remained. Three months after the onset of septic shock, the patient died from multiple organ failure.



Fig. 1. Ulcer of the forearm. The photograph shows the appearance 1 month after the accidental extravasation of propofol. The size of the ulcer was 3 × 9 cm

Although there have been several reports of extravasated propofol, this is the first report of a case in which extravasated propofol caused tissue necrosis. Propofol has been recognized to be a less invasive drug, because of its chemical properties, isotonicity, and neutral pH [4]. In previous reports of accidental extravasation [1,2] and intra-arterial injection [5–7] of propofol, propofol was harmless and did not induce any serious tissue damage. In this case, however, we could not find any cause of the tissue necrosis other than extravasated propofol. Although the general condition of this patient, including undernutrition and septic shock, was an important factor for skin necrosis by extravasation of propofol, we should be aware that extravasation of propofol can cause tissue necrosis.

References

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