Accidental intra-arterial injection of midazolam and pethidine during endoscopy: a reminder that a routine procedure can result in disaster

A cannula for venous access was placed in the antecubital fossa of a 60-year-old man for the delivery of analgesia and sedation during colonoscopy, and 5 mg midazolam and 50 mg pethidine were injected. The patient complained about heat, burning, and ongoing pain in his right forearm. The skin of the forearm was red, with some white spots similar in appearance to hives. After an infusion system was connected to the cannula, it became evident that there was backflow of arterial blood, and it was realized that the cannula had been placed in a small artery. Immediate infusion of 20 mL of 0.9% saline solution, 10 mL of lidocaine 0.5%, and 20 000 units/24 hours of heparin into the involved artery resulted in symptomatic relief within 8 hours and there were no negative sequelae.

Accidental intra-arterial injection of these drugs can lead to severe tissue damage, resulting in compartment syndrome, gangrene, and amputation [1, 2]. Although there are no specific guidelines for the management of unintended arterial drug injection, some successful strategies can be gleaned from published case reports [3, 4]. The management should include dilution of the drug in the arterial vasculature, vasodilation to counteract vasospasm, and anticoagulation to prevent thrombosis. A combination of vasodilators (calcium-channel blockers, iloprost, papaverine, lidocaine), sympathetic nerve plexus blockade, and anticoagulant/thrombolytic agents (heparin, urokinase, tissue plasminogen activator, platelet aggregation/thrombokinase inhibitors) have circumvented the need for surgical fasciotomy or thrombectomy in the past [3].

There are a number of recommended precautions that should ensure safe venous access and avoid unintentional intra-arterial drug injection [3, 5] and these are illustrated in Figure 1 and Figure 2. Because pain is a typical symptom of inadvertent arterial injection, health personnel should be particularly aware of patients who might not be able to report this symptom and who are therefore at increased risk (such as unconscious, pediatric, or mentally handicapped patients). We think that this report is noteworthy because it is possible that most endoscopists are not aware of this rare complication and are also not familiar with the management of this emergency situation.

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