



HerbClip™

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FILE: ■ Aloe (*Aloe vera*)
■ Sevoflurane
■ Anesthesia
■ Herb-drug interaction

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RE: Case Report of Possible Interaction between Aloe and the Anesthetic, Sevoflurane

Lee A, Chui PT, Aun CS, Gin T, Lau AS. Possible interaction between sevoflurane and Aloe vera. *Ann Pharmacother.* 2004 Oct;38(10):1651-1654.

Herbal medications are more frequently used by patients undergoing surgery than by the general population. Up to 70% of surgical patients who use herb products before surgery (12% to 39% of patients) do not notify the doctor. There are case reports of postoperative bleeding in patients who took ginkgo (*Ginkgo biloba*) or garlic (*Allium sativum*) preoperatively. In addition, there are reports of herbs interacting with anesthetic drugs. As of July 27, 2004, this is the first report of a clinically significant bleeding complication with a possible contribution from an aloe (*Aloe vera*) product (unspecified) taken internally and its possible interaction with sevoflurane, an anesthetic.

A 35-year-old woman was admitted to the hospital to have a hemangioma (a mass of blood vessels) removed from her thigh. Anesthesia during the surgery was maintained with sevoflurane (0.5-1.3%). In this type of surgery, the patient would typically require 2 units of blood; however in this case the patient required 6 units of blood. In the recovery room she needed another unit of blood. During the first postoperative day, she required another 2 units of blood. The total blood loss was approximately 5L, twice-the expected 2.5L. The woman initially denied taking any medications. At a later date, she revealed to a nurse that she had been taking aloe, 4 tablets/day for the 2 weeks prior to hospital admission. The patient did not know if the preparation was whole herb or an extract.

The vascularity and size of the hemangioma were the most important factors for the massive intraoperative blood loss. However, the authors believe that hemostatic (blood flow) abnormalities induced by the anesthetic agents and aloe may have also contributed to the blood loss. Sevoflurane can impair platelet aggregation and prolong bleeding time by inhibiting thromboxane A₂ formation through suppression of cyclooxygenase activity

and may prolong bleeding by 40%. An in vitro estimation of anti-inflammatory activity of extracts of *Aloe vera* gel indicated that such a preparation can cause a 49% reduction in prostaglandin synthesis compared with a 63% reduction by indomethacin. These authors suggest on this basis that aloe may inhibit the secondary aggregation of platelets and contribute to perioperative bleeding. An objective causality assessment test called the Naranjo probability scale is claimed to reveal that the large blood loss was possibly related to the interactions between sevoflurane and aloe. The aloe tablets were not analyzed so it is not known whether the product was adulterated with other substances that could cause bleeding. The possibility of aloe contributing to the excessive bleeding is clearly largely speculative.

It would be preferable to use the anesthetic isoflurane in lieu of sevoflurane in patients or procedures that have a tendency for bleeding, because the antiplatelet effect of sevoflurane appreciably exceeds that of isoflurane. Even though it is not known with any confidence that aloe contributed to the bleeding, it would be beneficial for health care professionals to directly ask presurgical patients if they use any herbal medicine, so as to be aware of the possibility of contribution to bleeding and herb-drug interaction.

—Heather S. Oliff, PhD

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