

INTRODUCTION

One of the physiological functions of platelets is to aggregate and, thus, to participate in hemostasis. There are chemical compounds such as adenosine diphosphate (ADP), adrenaline, collagen, and ristocetin that induce platelet aggregation⁽¹⁾. There has been some interest in the interaction between inhaled anesthetics and platelet function. Several studies of the effects of inhalational anesthetic agents on platelet function have been reported since Ueda⁽²⁾ demonstrated in 1971 that clinical concentrations of halothane inhibited (ADP)-induced platelet aggregation^(3,4). Although some reported findings remain controversial^(3,4), halothane is considered to inhibit platelet aggregation^(5,6), whereas isoflurane is not.^(6,7) Sevoflurane in particular has been recently the subject of several investigations, however, the results remain contradictory.

Skillful surgery combined with blood saving methods and careful management of blood coagulation will all help in reducing unnecessary blood loss and transfusion requirements. Excessive surgical bleeding causes hypovolemia, hemodynamic instability, anemia and reduced oxygen delivery to tissues with a subsequent increase in postoperative morbidity and mortality⁽⁸⁾. The role of anesthetists in managing surgical blood loss has grown greatly in the last decade. Intraoperative blood loss varies according to the anesthetic agent used⁽⁹⁾ and with the type

of anesthesia⁽¹⁰⁾. Simple elevation of the surgical site may reduce blood loss, but may risk embolism in regions with non-collapsing veins⁽¹¹⁾. Maintaining normothermia reduces blood loss, because of the deleterious effects of hypothermia on platelet function⁽¹²⁾. Blood coagulation can also be compromised by fluid replacement and profound hemodilution. Moderate crystalloid substitution accelerates rather than inhibits blood coagulation; however, with advanced crystalloid hemodilution, blood coagulation may become compromised⁽¹³⁾. The use of colloids may also compromise coagulation⁽¹⁴⁾. A combination of generous amounts of crystalloids with some colloids may be optimal to maintain blood coagulation and avoid blood loss as resulting from coagulopathy⁽¹⁵⁾. Controlled hypotension has been used to decrease surgical blood loss. The limited efficacy of this technique may be related to the fact that relatively low blood pressures are commonly tolerated in routine anesthesia; thus, a further decrease in mean arterial pressure to approximately 50 mm Hg may only offer limited benefit^(15). Moreover, we are increasingly confronted with subgroups of patients who refuse blood transfusion or who are likely to lose more blood in the perioperative period (e.g. patients on antiplatelet agents or anticoagulants, patients with hepatic cirrhosis, and those with chronic renal failure). Several pharmacological hemostatic agents are currently being used by anesthetists as blood-saving agents in such circumstances.

