Anesthetic Management is a Major Determinant of Early Exubation After Elective Cardiac Surgery

To the Editor:

In a recent article in CHEST (July 1997), 1 Reyes and coworkers reported their experience with early exubation after cardiac surgery and its impact on ICU stay and postoperative complications.

To investigate the hemodynamic effects and the influence on the postoperative ICU course of remifentanil/propofol anesthesia compared with fentanyl/propofol anesthesia, we prospectively studied 55 patients (mean age, 63.7 years; 32 male, 23 female; mean ejection fraction, 43.5%) undergoing elective cardiac surgery. After induction with fentanyl 10 μg/kg, thiopentone 1 mg/kg, and vecuronium 0.15 mg/kg, maintenance was obtained with 3 to 5 mg/kg/h propofol infusion randomly combined with fentanyl 2 μg/kg/h (group A, 29 patients) or remifentanil 0.5 to 1 μg/kg/min (group B, 26 patients), running throughout the surgical procedure. Invasive arterial pressure, thermomilion, and omniplane transesophageal echocardiography were registered intraoperatively. No relevant hemodynamic differences were found between the two groups. Postoperatively, mean duration of intubation was 7 h in group A and 4 h in group B (p<0.05), while duration of mechanical ventilation was 3 h in fentanyl patients and 1.5 h in remifentanil patients (p<0.05). ICU stay was shorter in group B (18 h) than in group A (27 h) (p<0.05). One patient in group A and none in group B failed extubation. No differences were found between the two groups in postoperative complications.

Reyes and coworkers observed a high incidence of exubation failure due to persistence of anesthesia (44% of patients who failed), and anesthesia was responsible for reintubation in one patient. They also performed “early” exubation between 7 and 11 h after operation in low- and moderate-risk patients. We agree with the authors on the importance of anesthesia in this field, but we think that the use of long-acting drugs (fentanyl, diazepam) should be reduced. In our opinion, exubation can be performed earlier than 7 h, and also in uncomplicated high-risk patients, if hemodynamic end-points are strictly kept with extensive monitoring (pulmonary artery catheter, transesophageal echocardiography) and aggressive therapy.

We conclude that in a setting where short-acting anesthetics are used and hemodynamics are respected, early exubation is feasible, even in compromised cardiac surgical patients, without increasing postoperative complications.

Antonio Reyes, MD
Intensive Care Unit
Hospital Universitario de la Princesa
Madrid, Spain

REFERENCES

1 Shapiro BA, Lichtenthal PR. Inhalation-based anesthetic techniques are the key to early exubation of the cardiac surgical patient. J Cardiothorac Vasc Anesth 1993; 7:135–36