◇ This Month in

ANESTHESIOLOGY

■ Preventing Respiratory Dysfunction in Morbidly Obese Patients after Abdominal Surgery. Pelosi *et al.* (page 1221)

During anesthesia and paralysis, morbidly obese patients, whose lung volumes are already reduced, are at greater risk of severe impairment of respiratory mechanics and gas exchange than are normal-weight patients. Pelosi *et al.* hypothesized that lung collapse and alterations in respiratory mechanics might be a function of an increased body mass index and intraabdominal pressure. In nine normal and in nine morbidly obese postoperative abdominal surgery patients, they measured lung volumes, respiratory system elastance, and intraabdominal pressure at positive end-expiratory pressure (PEEP) 0 and 10 cm H_2O to determine whether PEEP might improve respiratory mechanics and oxygenation in the morbidly obese patients.

The normal participants were studied in the recovery room 20 min after surgery, whereas the obese patients were transported to the intensive care unit, where the entire protocol was conducted after they had reached respiratory and hemodynamic stability. During the study protocol, all patients were anesthetized with diazepam, paralyzed with pancuronium bromide, and mechanically ventilated. The research team measured gas exchange; elastic and flow-resistive properties of the respiratory system, lung, and chest wall; and end-expiratory lung volume during the last 5–10 min of each of the two different PEEP levels, which were applied in random order and maintained for at least 25–30 min. Intraabdominal pressure readings were obtained using intrabladder catheters.

The obese patients had lower lung volumes, higher intraabdominal pressures, higher lung and chest wall elastance measurements, and lower oxygen pressures than did normal subjects. Increasing PEEP to 10 cm H_2O reduced elastance and improved oxygenation in obese patients but not in normal patients. Further studies would be helpful to define optimal levels of tidal volumes (not investigated in this study) and PEEP to keep the lung open in these at-risk patients, and to define the body mass index levels at which PEEP or larger tidal volume would be effective in maintaining normal respiratory mechanics and oxygenation.

■ Cardioprotective Effects of Sevoflurane during Ischemia and Reperfusion in Dogs. Toller *et al.* (page 1437)

To determine whether sevoflurane, like isoflurane, protects against consequences of prolonged coronary artery occlusion, Toller *et al.* assigned 75 dogs to one of seven experimental groups. All dogs were anesthetized with barbiturates, intubated, ventilated, and instrumented for measurement of aortic and left ventricular pressures and maximum rate of increase of left ventricular pressure ($+dP/dt_{max}$). They first underwent a 60-min left anterior descending coronary artery occlusion, followed by 3 h of reperfusion. In four experiments designed to test whether sevoflurane reduces myocardial infarct size by adenosine triphosphate–sensitive potassium channel activation, dogs received either intravenous drug vehicle (50% polyethylene glycol and 50% ethyl alcohol) or adenosine triphosphate–sensitive potassium channel antagonist glyburide in the presence or absence of a 30-min administration of 1 minimum alveolar concentration end-tidal concentration of sevoflurane.

Another set of experiments was designed to determine whether sevoflurane is associated with an acute memory phase and whether it reduces the time threshold to ischemic preconditioning. For these additional studies, sevoflurane was either discontinued 30 min (memory) before the 60-min left anterior descending occlusion, or a 2-min left anterior descending occlusion as an ischemic preconditioning stimulus was used with or without subsequent sevoflurane (with memory) pretreatment.

At the end of each experiment, regional myocardial perfusion was measured with radioactive microspheres, and infarct size was measured with triphenyltetrazolium staining. Vehicle and glyburide had equivalent effects on myocardial infarct size. Sevoflurane significantly decreased infarct size, an effect that was abolished by glyburide. Discontinuing sevoflurane 30 min before the prolonged left anterior descending occlusion did not afford myocardial protection, but sevoflurane enhanced the effects of the brief ischemic stimulus and reduced infarct size.

■ Maximizing Operating Room Utilization Dexter *et al.* (page 1491)

To maximize operating room (OR) utilization, it is important to schedule into open time as many submitted add-on elective cases as possible. Typically, such cases