

### ■ Is Perioperative Hypertension Related to Intracranial Bleeding after Craniotomy? Basali *et al.* (page 48)

Using a retrospective case-control design, Basali *et al.* studied the relation between perioperative blood pressure (BP) increase and postoperative intracranial hemorrhage (ICH). The authors first searched their institution's database for all cases of craniotomy from 1976 to 1992. Of 11,214 patients undergoing craniotomy, they identified 86 (0.77%) in whom postoperative ICH had developed. Of those patients, 69 met inclusion criteria for the study. The authors then compared this group of 69 patients with a matched control group of 138 patients (2:1) who had no postoperative cranial bleeding after craniotomy.

Blood pressure records from preoperative, intraoperative, emergence from anesthesia, and immediate postoperative periods were studied. The authors defined postoperative hypertension as one recorded instance of systolic BP more than 160 mmHg or diastolic BP more than 90 mmHg before ICH. Hypertension in the intraoperative period was defined as at least two consecutive occurrences of BP more than or equal to 160/90 mmHg. In their review, the authors also collected the following data: type of anesthetic, estimated surgical blood loss, type of intraoperative fluids, duration of procedure, and body temperature at the end of surgery.

Approximately 50% of the cases of ICH occurred in the immediate postoperative period, 0–20 h after surgery. Of the patients who experienced ICH, 62% had intraoperative hypertension, whereas only 34% of control patients had intraoperative hypertension. Not surprisingly, duration of hospital stay and mortality were significantly greater in the ICH group than in the control group. Because of limitations resulting from its retrospective design and because of the lack of sufficient BP readings for control patients, the study showed an association, but not a causal relation, between acute intraoperative or early postoperative hypertension and ICH.

### ■ Patient Perception of Limb Position during Regional Anesthesia. Isaacson *et al.* (page 55)

To evaluate the influence of limb position changes on the incidence of incorrectly perceived or phantom sensations during regional anesthesia, Isaacson *et al.* observed 40 women scheduled to undergo genitourinary procedures with subarachnoid anesthesia. The authors'

objective was to reevaluate the controversy of rigid *versus* plastic influences on phantom sensations during regional anesthesia and to develop a better understanding of proprioceptive memory-imprinting processes.

Preoperative medication was limited to a maximum of 2 mg intravenous midazolam. After administration of subarachnoid block, patients were placed in the supine position and an opaque screen was placed in such a way as to prevent the patients from seeing their legs. Patients scheduled for procedures lasting 1 h or less were assigned to group 1 and were administered 1.5 ml lidocaine, 5%, in 7.5% dextrose; patients scheduled for procedures longer in duration than 1 h were assigned to group 2 and were administered 1.5 ml bupivacaine, 0.75%, in 7.5% dextrose. Then, patients in each group were randomized to one of four time groups: 1, 4, 7, and 10 min. The authors assigned each patient's dominant leg as the leg to be flexed first (ipsilateral limb). The nondominant (contralateral) leg was completely extended. The patient's legs were in this position for 1, 4, 7, or 10 min, depending on the time group to which the patient was randomized, and the patient was questioned regarding leg position. At the designated time, leg positions were switched simultaneously. Sensory testing to pin prick was performed 10 min after injection for each group and also was used during repositioning as a distraction to minimize movement cues.

The percentage of incorrect responses was analyzed using a logistic regression model with the independent variables of treatment and time. The authors found that inability to perceive a change in limb position was dependent on the point at which the position change was initiated, in relation to the onset characteristics of the local anesthetic. Patients incorrectly identified the position of the flexed-first limb more often than they did the position of the contralateral limb, leading the authors to conclude that proprioceptive memory involves a dynamic neuroplastic imprinting process (rather than a fixed body schema) that is influenced by limb position before onset of regional anesthesia.

### ■ Can Predictors of Perioperative Myocardial Infarction in Patients Undergoing Vascular Surgery Be Identified? Sprung *et al.* (page 129)

Sprung *et al.* used the Vascular Surgery Registry at The Cleveland Clinic to identify patients from January 1989 through June 1997 who underwent vascular surgery and