

FIGURE Box plot of percentage changes in systolic blood pressure from baseline in the first 15 min after induction of spinal anesthesia. * and ^ represent significant changes ($P < 0.05$) from baseline for the control and study groups respectively.

Thirty-three ASA physical status I term parturients undergoing Cesarean section were randomized into two groups who received 1 mg metaraminol (Group S) or normal saline (Group C) in equal volumes infused over one minute, two minutes after the intrathecal injection of 2.2 mL 0.5% heavy bupivacaine with 15 μ g fentanyl. Volume loading was the same in both groups and the anesthesiologist managing the mother was unaware of group assignment. Blood pressure (BP) and heart rate (HR) were recorded at one-minute intervals for 15 min. A systolic BP $< 80\%$ of baseline was treated with 5 mg ephedrine every minute plus crystalloid until it normalized. Maternal hemodynamics, acid-base status of umbilical arterial and venous cord blood (UV), and Apgar scores were compared.

Demographic data, baseline hemodynamic data, level of block, amount of fluid used and incision-to-delivery time were comparable between groups. The percentage changes in systolic BP and HR from baseline were insignificant in Group S for the first seven minutes while Group C showed significant reductions in systolic BP and rises in HR (Figure). Between-groups comparisons also showed that Group S had higher systolic BP ($P = 0.025$) and lower HR ($P = 0.035$) than Group C for the first ten minutes. Ephedrine requirement (4.4 vs 12.2 mg; $P = 0.012$) and UV acidemia (7.35 vs 7.32; $P = 0.041$) was less in Group S. Venous cord blood pH was greater than 7.2 in all cases. The two groups did not differ in systolic BP and HR for the last five minutes of the study and Apgar scores were similar in both groups. Our results suggest that prophylactic metaraminol delayed the onset of maternal

hypotension, lessened ephedrine requirements and was associated with a better UV acid-base status. Though the clinical significance of our findings remains unclear, they support the concept that metaraminol may be a safe alternative despite initial worries of impaired uteroplacental circulation.³

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Acute pulmonary edema in relation with single coronary ostium following acoustic neuroma surgery

To the Editor:

A 61-yr-old woman without risk factors for cardiovascular diseases underwent elective surgery for a right acoustic neuroma. Surgery lasted nine hours, a relative hypotension (around 80/50 mmHg) was tolerated throughout the surgical procedure and no cardiovascular event was recorded. Two hours after extubation in the intensive care unit, she suddenly developed acute respiratory distress with marked hypoxemia (pO_2 52 mmHg, O_2 saturation 73%, pCO_2 69 mmHg). The chest *x-ray* was consistent with acute pulmonary edema; central venous pressure rose to 16 mmHg. The patient needed urgent re-intubation. The electrocardiogram showed ST-segment elevation in the anterior leads (V1–V3) and T-wave inversion in the lateral leads. Cardiac enzymes increased with creatine kinase (CK) 1615 IU·L⁻¹, CK-MB 30.6 μ g·L⁻¹ (normal < 3.5 μ g·L⁻¹) and troponine I 0.48 ng·mL⁻¹ (normal < 0.10). Cardiac echography showed severe impairment of left ventricular systolic function, with anterior, apical and septal akinesia; left ventricular

ejection fraction was calculated at 30%. Cardiac index (CI) was $1.6 \text{ L}\cdot\text{min}^{-1}\cdot\text{m}^2$, and pulmonary capillary wedge pressure 15 mmHg. Coronary angiography revealed a solitary ostium in the right aortic sinus, but the entire coronary system was free of any obstructive atherosclerotic lesions (Figure). The patient first received dobutamine $5 \mu\text{g}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$ and thereafter milrinone $0.5 \mu\text{g}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$, with a slight improvement in CI, but tachycardia developed. Infusion of glucose-insulin-potassium (GIK) was given over 72 hr. CI improved progressively. Extubation was possible 62 hr after the acute episode.

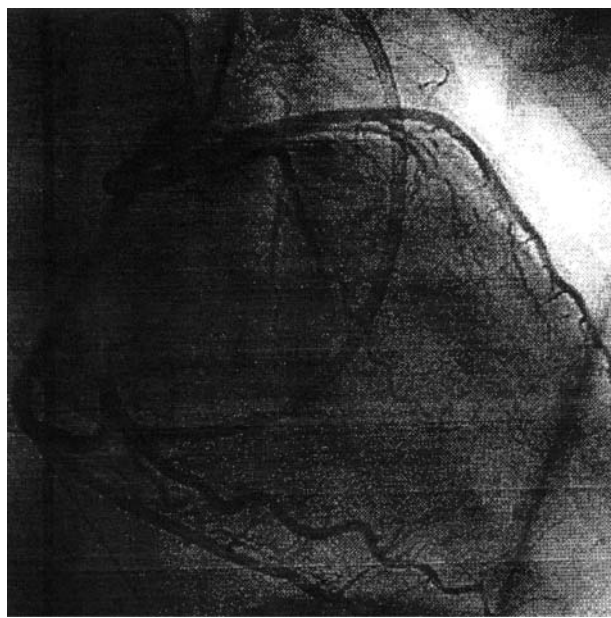
A single coronary ostium is found in 0.2–1.4% of adult patients undergoing coronary arteriography.^{1,2} The mechanism leading to myocardial infarction in the present setting remains open to discussion: 1) myocardial ischemia has been described in patients with this anomaly in the absence of additional atherosclerotic disease. The pathophysiology is not completely understood.^{2–4} Impairment of coronary reserve (functional obstruction) is one among other hypotheses. Although a mild degree of hypotension was tolerated, there was no evidence of myocardial ischemia during surgery; 2) coronary vasospasm may have occurred in the postoperative phase; 3) paradoxical air embolism causing an acute occlusion of the single coronary system should be considered after ENT surgery. The origin of the single coronary artery from the right aortic cusp together with the position of the patient during the procedure may have favoured air embolism.

In conclusion, this patient with a single coronary ostium but without heart disease, previously asymptomatic in daily life, suffered a myocardial infarction in the immediate postoperative period.⁵ Several explanations are likely. Whatever the exact mechanism, such individuals may be more prone to perioperative cardiac events.

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FIGURE

- 3 *Schwarz ER, Hager PK, Uebis R, Hanrath P, Klues HG.* Myocardial ischaemia in a case of a solitary coronary ostium in the right aortic sinus with retroaortic course of the left coronary artery: documentation of the underlying pathophysiological mechanisms of ischaemia by intracoronary Doppler and pressure measurements. *Heart* 1998; 80: 307–11.
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Identification of the epidural space: air or saline?

To the Editor:

It is clear that mischief (injection of air in a blood vessel, pneumocephalus, patchy and inadequate analgesia) can occur if air is injected when using a loss of resistance (LOR) technique to identify the epidural space.^{1,2} However, the injection of air is not necessary to detect a LOR and was never intended. When the tip of the epidural needle enters the epidural space, this increases