Spinal anesthesia for Cesarean delivery in a parturient with Arnold-Chiari type I malformation

To the Editor:
Arnold-Chiari type I malformation (ACM-I) consists of elongation and prolapse of the cerebellar tonsils below the foramen magnum.[1] The most common clinical symptoms of this condition include headaches, vertigo, nystagmus, neck and upper extremity pain and/or weakness, respiratory impairment, and seizures. Increased intracranial pressure (ICP) has been reported in patients with ACM-I.[2] The obstetric and anesthetic management of women affected by ACM-I is scarcely addressed in the literature,[3–5] and subsequently no uniform recommendations regarding mode of delivery (vaginal *vs* abdominal) and choice of anesthesia (regional *vs* general) can be made. Although some[5] have cautioned that dural puncture for anesthetic management of vaginal or abdominal delivery may initiate and/or exacerbate neurological symptoms of this condition, others have documented the safe use of regional anesthesia in these patients.[3]

A 35-yr-old gravida 1 para 0 otherwise healthy female with newly diagnosed (first trimester of pregnancy) and mildly symptomatic (recurrent headaches, vertigo, and numbness of both upper extremities) ACM-I malformation was evaluated by a multidisciplinary team of experts including the obstetrician, obstetric anesthesiologist, neurologist, and neonatologist at 37 weeks of gestation. The peripartum care plan aimed at avoidance of labour-induced stress, and particularly pushing-induced increase in the ICP in the second stage of labour. The peripartum plan was accomplished two weeks later by performing an elective Cesarean section under single-dose spinal anesthesia (with 12 mg of 0.75% bupivacaine, 10 μg of fentanyl, and 0.2 mg of preservative free morphine induced with a 27-gauge atraumatic needle). No exacerbation of preexisting maternal symptoms was reported postpartum.

In conclusion, this report not only emphasizes the importance of a multidisciplinary and individualized approach to pregnant women with uncommon, nonpregnancy specific disorders such as ACM-I, but also provides further evidence that spinal anesthesia can be safely and effectively performed in pregnant patients with ACM-I undergoing Cesarean delivery. However, for parturients with other types of ACM accompanied by other clinical manifestations, a different choice of obstetric and anesthetic management may prove more appropriate.

Krzysztof M. Kuczkowski MD
San Diego, California

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Use of a K^+-adsorption filter for the massive transfusion of irradiated red blood cells in a child

To the Editor:
The potassium level in the supernatant of irradiated packed red blood cells (IR-RBCs) increases rapidly and reaches more than 50 $mEq \cdot L^{-1}$ one week after irradiation.[1] Such high potassium loads might induce fatal arrhythmias especially in cases of rapid and massive transfusion.[2] Strategies reducing the potassium load from IR-RBCs are required to make transfusion safer.

Recently, a potassium-adsorption filter (Kawasumi Laboratories, Tokyo, Japan) has become commercially available for the rapid and massive transfusion of IR-RBC. It consists of a chamber containing sodium polystyrene sulfonate beads, which adsorb K^+ and release Na^+ in equivalent amounts. It can eliminate more than 80% of the potassium in the supernatant of IR-RBCs at infusion rates less than 50 $mL \cdot min^{-1}$.[3]

Massive bleeding may be observed during liver transplantation (LT), especially in children with congenital biliary atresia (CBA) undergoing a Kasai portoenterostomy. Recently, we experienced massive bleeding during a LT and were able to manage massive transfusion uneventfully using this filter.

A ten-month-old girl (weight 7.3 kg) with CBA was scheduled for LT. The operation lasted 986 min and anesthesia 1,127 min. Total bleeding amounted to 765 g, massive bleeding being observed specially during the