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### Harlequin Color Change in an Infant during Anesthesia

*To the Editor:*—An unusual cutaneous phenomenon has been observed in premature, newborn, and young infants. This phenomenon consists of episodes during which a sharp, midline demarcation in color occurs, bisecting the child into pale and plethoric halves. In 1952, Neligan and Strang<sup>1</sup> described this color change in 22 newborn infants and labeled it the "Harlequin Color Change." Although in the usual sense, harlequin means variegated or mottled, in the described condition there is a strict boundary between pale and plethoric halves. To our knowledge, such a change never has been reported to occur under anesthesia. We recently anesthetized an infant with complex congenital heart disease who exhibited "harlequin-like" color changes during anesthesia.

A 9½-month-old, 6-kg boy was scheduled for Nissen fundoplication and gastrostomy because of recurrent bouts of aspiration pneumonia. Significant history included birth one month prematurely and complex congenital heart anomalies, including double outlet right ventricle, coarctation of the aorta, a small pulmonary outflow tract, atrial septal defect (ASD), ventricular septal defect (VSD), and a hypoplastic mitral valve. Previous surgery included coarctation repair, pulmonary artery banding, a Blalock-Hanlon atrial septectomy, a right Blalock-Tausig shunt, main pulmonary artery ligation, and tracheostomy. On the day of surgery, we administered oxygen and gave atropine, 100 µg. Anesthesia was induced with ketamine, 15 mg, followed by pancuronium, 1 mg. Maintenance drugs included fentanyl 8 µg/kg, pancuronium, and oxygen. Twenty minutes after induction, we noted plethora of the right side of the child's face and head, which was highly demarcated

and precisely in the midline, running from the base of the neck anteriorly to posteriorly. The lips and tongue were not involved. Vital signs were normal and remained stable. PaO<sub>2</sub>, PaCO<sub>2</sub>, and pH<sub>a</sub> were 83 mmHg, 47 mmHg, and 7.33, respectively. The color change persisted for 1 h and resolved spontaneously. Other intraoperative and postoperative events were unremarkable, and no other color changes occurred.

To our knowledge, this case is the first "harlequin-like" phenomenon reported in the operating room. The changes described are alarming when seen and are not widely known among anesthesiologists. To date, the harlequin color change remains a clinical curiosity associated with no other apparent autonomic phenomenon.<sup>1,2</sup> No associated morbidity has yet been described, although hypoxemia has been implicated as a possible triggering agent.<sup>3</sup>

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### Assessing Inspiratory Force—An Indicator

*To the Editor:*—The assessment of neuromuscular function prior to extubation includes nerve stimulation, observation of ability to sustain head lift, and measurement of vital capacity and inspiratory force.

Inspiratory force is a measure of respiratory reserve, which corresponds to the maximal negative pressure in centimeters of water that can be generated at inspiration.<sup>1</sup> The measurement procedure does not depend on patient cooperation, and it can be applied advantageously

in semiconscious patients. Evaluation of inspiratory force prior to extubation is of importance in clinical conditions, which increase the work of breathing, as well as in hypoxemia and low cardiac output states.<sup>2</sup>

The procedure requires a manometer capable of registering subatmospheric pressure. Such manometers can be expensive and are not always at hand. A simple device for indicating a predetermined inspiratory pressure has been developed in cooperation with Dameca