



FIGURE Class zero airway in a six-year-old boy.

sent for an anesthetic. Nonetheless, the prevalence of a class zero airway in children is probably higher than the literature (or lack thereof) suggests, and formal evaluation of the pediatric class zero airway for predicted ease of laryngoscopy, intubation, and mask ventilation is awaited.

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## *An ounce of prevention worth a pound of cure*

To the Editor:

Evidence is mounting that maintenance of normoglycemia ( $4\text{--}6\text{ mmol}\cdot\text{L}^{-1}$ ) improves outcome after myocardial infarction<sup>1</sup> and cardiac surgery.<sup>2,3</sup> Although perioperative glucose control is a laudable goal, its achievement is elusive as illustrated by the failure of a sliding scale insulin administration preserving normoglycemia.<sup>4,5</sup> A recent case at our institution demonstrates that hyperglycemia when severe is difficult to treat, particularly in a diabetic patient.

A 48-yr-old female type I diabetic was transferred to our coronary care unit from a nearby community hospital with unstable angina. She had elevated cardiac enzymes and ST elevations in multiple leads. During transport to our institution her insulin infusion was stopped. The patient was scheduled for immediate revascularization surgery after coronary artery angiography revealed multi-vessel disease. Due to the urgency of the situation insulin administration was likely overlooked and not restarted. When our team learned of the scheduled emergency surgery her blood glucose was  $23.7\text{ mmol}\cdot\text{L}^{-1}$ . The patient was transferred to the operating room within 30 min while on a nitroglycerin infusion diluted in 5% dextrose. After induction of anesthesia the patient's blood glucose level was greater than the upper detection limit of our glucose analyzer, i.e.,  $> 27\text{ mmol}\cdot\text{L}^{-1}$  (GEM Premier 3000 Blood Gas and Electrolyte Analyzer Model 5700 Instrumentation Laboratory Canada Ltd Richmond Hill, ON, Canada). We immediately started an insulin infusion at  $10\text{ U}\cdot\text{hr}^{-1}$  and administered insulin in boluses of 30 or 40 units every 20 to 30 min over the course of the surgery. Despite the massive doses of insulin administered, a total of 300 U over four hours after induction until arrival of the patient in the intensive care unit, the blood glucose remained elevated at  $12.4\text{ mmol}\cdot\text{L}^{-1}$ . After another four hours the blood glucose reached normal levels but thereafter the patient required exogenous glucose to maintain normoglycemia. Twelve hours after the end of the operation, the blood glucose was finally stabilized at  $7.2\text{ mmol}\cdot\text{L}^{-1}$  with the patient receiving insulin at  $4\text{ U}\cdot\text{hr}^{-1}$ . The patient's postoperative course was complicated by renal failure requiring continuous veno-veno hemodialysis. The patient was discharged home on postoperative day ten.

This case demonstrates that a good deal of time and massive doses of insulin are required to reverse the insulin resistance of cardiac surgery in a diabetic patient; once established, severe hyperglycemia is

impossible to overcome during the typical three to four hour time frame of cardiac surgery. Preoperative attention to the prevention of hyperglycemia is necessary for successful blood glucose control and the potential benefits of insulin therapy.

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### *Use of the LMA in an unusual “impossible to ventilate” situation*

To the Editor:

The laryngeal mask airway's (LMA) effectiveness as an emergency airway device has earned it a prominent role in the American Society of Anesthesiology difficult airway algorithm.<sup>1</sup> We describe an unusual case where the LMA's ability to provide positive pressure at the larynx may have prevented a hypoxic episode in a patient with an unanticipated difficult airway. A 68-yr-old, 102-kg gentleman with a medical history significant for hypertension, gastroesophageal reflux (GER) and



FIGURE Prominent forehead lesion; source of air leak.

osteoarthritis presented for debridement and exploration by the otorhinolaryngology service. The patient had undergone several previous surgeries during this hospitalization for removal of a hemangiopericytoma of the ethmoid sinus that extended through the cribriform plate. Following excision of the hemangiopericytoma through a bifrontal craniotomy and anterior skull base osteotomy, the defect between the brain and nasal cavity was closed with a pericranial flap. The patient developed an infection of the pericranial flap, requiring removal of the bone plate with loss of the base of the skull including ethmoid roof, cribriform plate, and plenum sphenoidali, thereby leaving a large connection between the frontal sinus and the nasal cavity. Since his previous anesthesia inductions and intubations had been uneventful and in the presence of active GER disease, a rapid sequence induction with propofol, succinylcholine and fentanyl was performed. When direct laryngoscopy by the anesthesia resident did not yield an acceptable view for intubation, the mask was re-applied to the patient. Manual ventilation resulted in synchronous puffs of air in the resident's face emanating from a 2-cm circular area of skin breakdown on the patient's forehead (Figure), and no appreciable chest