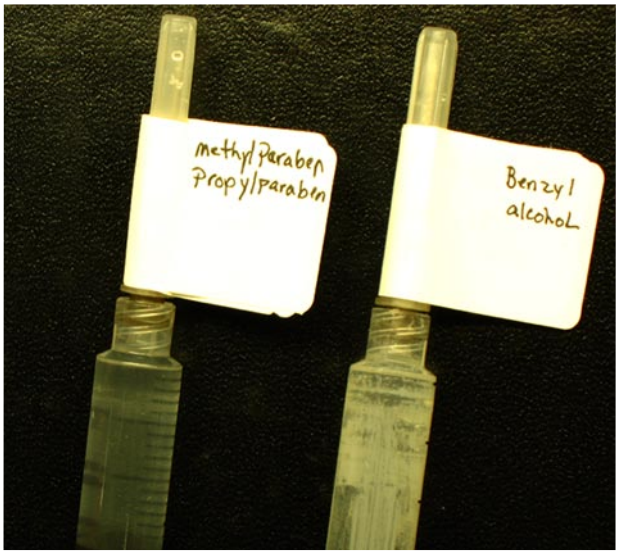

FIGURE Cloudy white precipitate resulting from the combination of dexamethasone with benzyl alcohol preservative and ondansetron.

alcohol and the other with methylparaben/propylparaben as a preservative) each with a 4 mg dose of ondansetron. The two syringes are displayed in the figure. At no time was there evidence of precipitate in the syringe containing the dexamethasone with the preservative methylparaben/propylparaben.

This type of reaction has been reported previously.[1] Hagan *et al.* reported precipitate formation on the syringe plunger, however at concentrations far less (less than half) than currently used by many practitioners at our institution (ondansetron 4 mg and dexamethasone 4 mg) The brand of dexamethasone in this study used benzyl alcohol as a preservative. We have recommended that the two drugs not be combined in the same syringe, and have notified the dexamethasone suppliers of our findings.

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Anesthetic management for a nail gun injury involving a cerebral venous sinus

To the Editor:

Pneumatic nail guns are used commonly in the construction industry and can cause traumatic injuries. We describe the anesthetic management of a patient undergoing craniotomy for nail removal complicated by an intraoperative venous air embolism (VAE).

A 30-yr-old male presented to the emergency department with a headache and bleeding from the scalp. While operating a nail gun overhead, a nail inadvertently deployed into the midline mid-frontal region of his head. On assessment he was alert and oriented, with stable vital signs and a Glasgow coma scale of 15. A skull radiograph (Figure) displayed the nail crossing the midline coronally. Cerebral angiography failed to show vascular disruption.

A decision was made by neurosurgery to remove the impacted nail emergently, with the patient requesting general anesthesia. Upon arrival in the operating room standard monitors were placed, and an indwelling radial artery cannula was placed pre-induction. After pre-oxygenation, a modified rapid sequence induction with cricoid pressure was performed with remifentanil 1 $\mu g \cdot kg^{-1}$, propofol 2 $mg \cdot kg^{-1}$ and rocuronium 0.6 $mg \cdot kg^{-1}$ administered intravenously. Anesthesia maintenance was with a 50/50 mixture of air and oxygen, sevoflurane 1.5–1.8%, with remifentanil infused at 0.05–0.15 $\mu g \cdot kg^{-1} \cdot min^{-1}$.

Approximately 20 min into the operative procedure and coincident with removal of the nail, the patient became suddenly hypotensive (a drop in blood pressure from 92/59 to 65/40 mmHg). His heart rate remained unchanged at 80 $beats \cdot min^{-1}$. Even though the end-tidal carbon dioxide did not change, a VAE was suspected. The patient was administered 100% oxygen, the surgical field was flooded with saline, the patient was positioned head down in left lateral tilt and the arterial pressure was supported by phenylephrine (total dose 300 µg *iv*). Following this resuscitation there was no further hemodynamic compromise of the patient during the subsequent surgical intervention.

At the completion of the surgical procedure, the anesthetic was transitioned to a total intravenous approach to facilitate patient transport to the radiology department. The patient underwent a computed tomography scan to rule out intracranial hemorrhage. A smooth emergence from anesthesia ensued and the

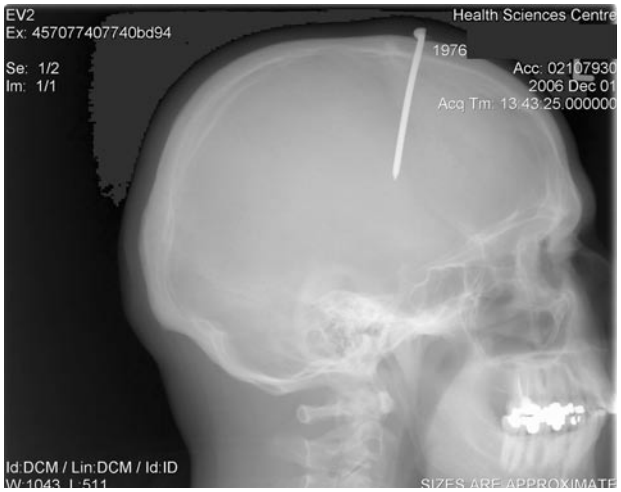

FIGURE Lateral skull radiograph showing the location of the intracranial nail.

patient made a complete recovery and was discharged from hospital on the third postoperative day.

Pneumatic nail guns are used commonly in the construction industry. An increasing number of penetrating cranial injuries have been reported.[1–5] Although there are case reports describing the neurosurgical management of these patients,[2–4] reports of anesthetic management of such cases are scant.

In this case, the anesthetic options included local anesthesia with intravenous sedation *vs* general anesthesia. The major benefit of performing this surgery with the patient awake was the ability to monitor for neurological deterioration acutely, which could signal vessel rupture.[4] Concerns with this approach include lack of patient cooperation, potential intraoperative agitation, limited access to the airway, the risk of a seizure and hemodynamic instability, including hypertension, which might have contributed to rupture of a false aneurysm, if present. In this case, patient preference for a general anesthetic dictated the approach.

In addition to standard anesthetic monitors, placement of an arterial cannula is important to permit close monitoring of the blood pressure. As seen in this case, a sudden drop in arterial pressure necessitated immediate intervention. Given the location of the nail, monitoring by echocardiography and placement of a central venous cannula to facilitate de-airing in the event of a VAE could have been considered.

Traumatic brain injury secondary to pneumatic nail gun discharge is becoming more common. Highlighting the anesthetic approach and potential intraoperative complications that may occur in these cases may aid in patient management.

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The Airtraq® laryngoscope for placement of double-lumen endobronchial tube

To the Editor:

Placement of a double-lumen endobronchial tube (DLT) is sometimes difficult due to the size and configuration of the tube compared with standard endotracheal tubes. For patients with difficult airways, DLT placement can be extremely challenging. The Airtraq® (Prodol, Meditec S.A., Vizcaya, Spain) laryngoscope is a new intubation device that provides a non-line-of sight view of the glottis. This anatomically shaped rigid laryngoscope has been reported to have several advantages, compared with the conventional Macintosh laryngoscope, in the management of normal and difficult airways.[1–5] However, one limitation is that the regular-size Airtraq® laryngoscope accepts a standard endotracheal tube with an internal diameter between 7.0–8.5 mm only. We report here