The Unanticipated Difficult Airway During Anesthetic Care for MRI
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Introduction
- Anesthesiologists frequently provide services in off-site locations, presenting a unique set of challenges and safety considerations.
- The specifics of these sites vary by institution creating a need for an individualized plan for each site.
- In March 2015, the ASA’s updated Practice Advisory for Anesthetic Care for Magnetic Resonance Imaging was published in A&A to assist in the decision making process.

Case History
Patient History
- An 8-month-old female presented for MRI of the brain to evaluate her hydrocephalus status post third ventriculostomy.
- She had previously undergone multiple surgeries, including repair of imperforate anus, right modified Blalock-Taussig Shunt for pulmonary atresia and VSD, and lastly, VSD repair with RV to PA conduit at 7 months of age.
- There was no difficulty with intubation for these procedures.
Case Details
- Routine inhalational induction on fixed bed in zone 4 of MRI suite.
- Peripheral IV placement after induction
- Direct laryngoscopy with magnetic safe laryngoscopy equipment resulted in grade 2 view
- Unable to advance ETT due to resistance immediately past the vocal cords.

Case History
- Three attempts resulted in a grade 2 view with an inability to advance various sizes of endotracheal tubes.
- Two sizes of LMAs were also unable to be successfully placed.
- Patient developed stridor and ENT was consulted
- Patient remained easy to mask ventilate with an oral airway and shoulder roll in place.
- Allowed to emerge from general anesthesia in the MRI suite and was then taken upstairs to the main OR PACU for recovery
- Later that day, she underwent an airway evaluation by ENT under general anesthesia.
- She was diagnosed with posterior glottic webbing, likely the result of her previous intubations. This was incised, dilated and injected with triamcinolone.

Follow up
- Since that time the patient returned for the previously scheduled MRI. She underwent inhalation induction in the main operating room with difficult airway equipment available. She then had a peripheral IV placed and airway secured easily with direct laryngoscopy followed by transport to the MRI suite.

Discussion
- ASA practice advisory advises that the anesthesiologist have an “advance plan in place to deal with instrumentation of the airway and common airway problems (e.g., obstruction, secretions, laryngospasm, apnea, and hypoventilation) when patients are in an MRI environment.”
- The case presented above highlights the importance of having an institution specific plan for the management of an unanticipated difficult airway within the MRI suite.
- This plan should include:
  1. Radiomagnetic safe equipment
  2. A nearby location to elevate the level of care
  3. A system to call for additional help and airway equipment if needed.

References