Rare Intraoperative Complications Related to the Utilization of Intraoperative Magnetic Resonance Imaging During Glioma Surgery

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Disclosures

• None
Introduction

Intraoperative magnetic resonance imaging (iMRI) has become an established adjunct to maximize extent of resection while preserving function in glioma surgery. Postoperative complications are similar to those experienced in operations where iMRI is not used. Many institutions have gravitated towards a closed-bore iMRI system where the magnet is either brought into the operating room environment, or where the patient is transferred to an adjacent imaging suite. We describe two types of complications that can occur when patients are transferred to an adjacent suite for iMRI.
Methods

This was a retrospective chart review conducted at the Medical College of Wisconsin Department of Neurosurgery. Three patients with intraoperative complications were identified, followed by extensive chart review to identify the extent of harm that reached the patient.
Results

We present three cases of intraoperative complications attributed to our iMRI process, one of which was the inability to maintain inspiratory volumes after shearing of the pilot balloon and valve of the endotracheal tube (ET) during transfer, and two of which were burns related to our non-invasive navigation tracker.
Discussion

Complications related specifically to the transfer and imaging process of iMRI utilization during neurosurgical procedures are rare. Alternatives to non-invasive stereotactic sensors adherent to the patient’s skin are available for neurosurgical procedures that include iMRI, and should be used if possible. Additionally, during prone iMRI cases, pilot line check should be added to the pretransfer checklist in order to maintain ET integrity through the iMRI transfer process when such transfers are utilized.
Summary Points

- Pilot line shearing and burns from non-invasive stereotactic sensors are possible complications with increased risk during intraoperative MRI cases for glioma surgery.
- Steps can be taken to mitigate the risk associated with these complications, and can be safely incorporated into intraoperative MRI case workflows.