

## **The Complicated MRI Queue**

Williams JG

### **Story from the Front Lines**

An elderly man with history of prostate cancer presented to the emergency department with worsening back pain and leg weakness. Of note the cancer had previously metastasized to the spine resulting in cord compression for which he had undergone surgical intervention at an outside hospital several months before. The emergency department physician was concerned for a recurrence of spinal cord compression and ordered an MRI. However, the patient also had a history of claustrophobia and had required anesthesia support for prior MRI studies. It was late in the day and the ability to obtain a same day MRI was difficult, particularly with the need for anesthesia, so the patient was admitted to coordinate the various needs to complete the scan.

Efforts at pain control were effective but on the following day, the patient developed confusion, disorientation, and hallucinations. He was easily redirectable and ultimately able to get some sleep. These symptoms resolved in the morning and were attributed to hyperactive delirium. His hospital course was without further complications and on the following evening just before midnight the patient started fasting in preparation for the MRI with conscious sedation. He remained nil per os (NPO) while efforts were made to try and coordinate radiology and anesthesia schedules. Due to difficulties in coordinating schedules of the needed clinicians for the MRI scan, the patient was transferred to an outside hospital to complete the study, having fasted for 18 hrs in the interim.

### **Teachable Moment**

Cord compression is a serious condition and a known complication of metastatic cancer which requires urgent imaging and possible surgical intervention [1]. Thus, given the patient's presentation and known history of metastatic prostate cancer previously complicated by cord compression, admission for further evaluation and likely treatment was warranted. However, challenges in the ability to provide appropriate diagnostics and definitive treatment may have been avoidable. An early consultation to radiology or anesthesia may have resulted in guiding the patient to another facility, perhaps better equipped to manage and coordinate such highly technical situations. Furthermore, had this scenario been considered or encountered previously, the emergency department may have been able to construct a clear standard operating procedure for either of the complicating factors, concern for cord compression and diagnostic imaging requiring anesthesia support. Any of these could have resulted in transfer from the emergency department to another facility and resulting in decreased time to needed intervention and reduced hospital stay.

As mentioned previously, on the second night he developed delirium. This is a known risk of hospitalization, and while reports vary, delirium may occur in 6% to 56% of patients admitted [2]. Of course different groups are at greater risk and our patient had multiple risk factors including age, being male, and experiencing pain [2]. He received appropriate, conservative management and did not suffer further complications which occur in about 20% of older admitted patients, but in general delirium is a poor prognostic indicator [2]. It is hard to say if

this was preventable, but a shorter hospital stay, or avoiding hospitalization entirely, may have reduced the chance of it occurring.

Finally, prior to anticipated conscious sedation, the patient was made NPO. This practice comes from extrapolating risk of conscious sedation to general anesthesia. Little medical literature has been published regarding fasting prior to conscious sedation, and as a result most recommendations are based on expert opinion [3]. Since it was uncertain when the patient would undergo conscious sedation, it was reasonable to start his fast at midnight, should the study be performed at 0600, but due to the inability to coordinate care he remained fasting for at least 18 hours prior to his transfer. Better coordination of care could have prevented this unnecessary fast.

Ultimately, the patient received appropriate care, but it was not without complications that may have been avoided through better coordination of care or standard procedures for challenging, recurrent clinical scenarios.

#### References

1. Loblaw DA, Perry J, Chambers A, Laperriere NJ. Systematic review of the diagnosis and management of malignant extradural spinal cord compression: the Cancer Care Ontario Practice Guidelines Initiative's Neuro-Oncology Disease Site Group. *J Clin Oncol* 2005; 23:2028.
2. Fong TG, Tulebaev SR, Inouye SK. Delirium in elderly adults: diagnosis, prevention and treatment. *Nature reviews Neurology*. 2009;5(4):210-220. doi:10.1038/nrneurol.2009.24.
3. McKenna G, Manton S (2008) Pre-operative fasting for intravenous conscious sedation used in dental treatment: are conclusions based on relative risk management or evidence? *Br Dent J* 205: 173–176