RADIOLGIC SAFETY

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MRI Safety

Video capsule endoscopy, introduced in 2001, has become a relatively common procedure. By the end of 2014, more than 1.5 million capsules were used. With the increased use of the devices, the risk of a patient presenting with an endoscopic capsule for an MRI has increased as well. Patients undergoing video capsule endoscopy should not undergo MRI until passage of the capsule out of the GI tract has been verified. There are potential risks of heating, migration, bowel injury or perforation that have not been studied, although according to a few reports of inadvertent MRI exposure, no harm was observed.

The User Manual for the PillCam Capsule Endoscopy Device states: “Undergoing an MRI while the PillCam video capsule is inside the patient's body may result in serious damage to his/her intestinal tract or abdominal cavity. If the patient did not positively verify the excretion of any PillCam video capsule from his/her body, he/she should contact the physician for evaluation and possible abdominal X-ray before undergoing an MRI examination.”

Besides patients undergoing uncomplicated capsule endoscopy examination, prolonged endoscopy capsule retention in the range of 1-1.7% has been reported. Patients with Crohn disease, neoplastic lesions, NSAID induced enteropathy, prior radiation treatment or extensive surgery, stenosis, adhesions, extensive diverticulosis, GI perforations and fistulas, are especially at risk.

The video capsules are easily detectable radiographically and cause metallic susceptibility artifact on magnetic resonance imaging. Therefore, the following actions may reduce the risk of exposing a patient to the MRI environment:

1. Adding a question on the MRI screening checklist regarding whether the patient has undergone a video pill endoscopy examination, the date of use and the date it was passed from the GI system.
2. If there is any question whether an endoscopiccapsule is present, obtain an x-ray prior to the MRI
3. Make the MRI technologist staff aware of the possibility and instruct them to stop a scan if they see an unexpected ferromagnetic susceptibility artifact on the MRI images.

References:
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