Improving access to MR imaging for patients with non-MR conditional cardiac devices

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Background:
• The presence of a cardiac pacemaker or defibrillator has traditionally been regarded as an absolute contraindication to MR scanning
• MR conditional devices do now exist, but older cardiac devices were not designed to undergo MR scanning
• However around 75% of patients with a cardiac implantable electronic device (CIED) will have a lifetime indication for a MR scan
• The consequences of not undergoing MR when indicated include late and misdiagnosis, as well as allowing access to treatments that require MR planning
• There is now increasing data suggesting the risk of scanning non-MR conditional devices is minimal provided specific safety protocols are followed
• International guidelines now endorse MR scanning in patients with non-MR conditional devices, with the aim that all centres implanting cardiac devices should be able to offer this service

OBJECTIVES
• To establish an MR imaging service for patients with non-MR conditional cardiac devices
• To improve the timely diagnosis and management of additional health conditions in these patients

BARRIERS TO CHANGE
MRI departments cite three main barriers to providing a service for patients with non-MR conditional devices:
1. Lack of training
2. Concerns around risk
3. Cross-departmental logistics

METHODS FOR CHANGE
• Develop a standard operating procedure to ensure all staff had access to the information needed to safely deliver this service
• Create a patient information sheet so that patients had access to the information they needed prior to consenting to MR imaging
• Implement a standard referral form which allows collection of the information needed to weigh up the risks and benefits of MR scanning for each individual patient

RESULTS
• The Queen Elizabeth Hospital, Birmingham has a well-established service for imaging patients with MR conditional devices, having previously completed > 250 scans
• Prior to the commencement of this initiative seven patients with non-MR conditional devices were referred for MR imaging and declined due to their device
• Following this initiative three patients have been accepted for MR scanning with two undergoing scans for possible malignant cord compression

CONCLUSIONS
• Development of standard operating procedures enables better access to MR imaging for patients with non-MR conditional devices, reducing misdiagnosis and improving access to treatment options
• As referring clinicians become aware that cardiac devices are no longer an absolute contraindication to MR imaging it is likely demand for this service will continue to grow

REFERENCES
1. mrimypacemaker.com