Removal of Sacral Nerve Stimulation Devices for Magnetic Resonance Imaging What Happens Next

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Abstract

Introduction Sacral neuromodulation (SNM) devices (Medtronic, Minneapolis, MN, USA) are not approved to undergo magnetic resonance imaging (MRI) of sites other than the head. When MRIs are required, devices are often removed prior to imaging. We reviewed the prevalence of device removal for MRI at a large academic institution and the subsequent clinical course of these patients. Methods A retrospective review of all SNM explants from 2009–2015 was performed. Cases explanted for MRI were analyzed to collect demographics, clinical characteristics, and postremoval management. Descriptive statistics were calculated. Results Ninety patients underwent SNM device removal, with 21 (23%) occurring for MRI. At explant, 20 patients (95%) were female and median age was 66 years. Suboptimal symptom control from SNM was noted in seven (33%) of these patients preoperatively. Of those explanted, six (29%) required MRI for neurologic and 10 (48%) for orthopedic concerns. The remaining MRI indications included abdominal masses (10%), genitourinary disease (5%), surveillance for prior malignancy (5%), and cardiac disease (5%). Only 16 (76%) patients explanted ultimately underwent MRI. MRI results impacted clinical management in 9/16 (56%) of the imaged patients. Only two (10%) of explanted patients underwent device replacement. Conclusions In patients receiving SNM therapy, device removal for MRI is most commonly due to orthopedic and neurologic pathologies. About half of the MRIs performed impacted non■GU clinical management. It is of paramount importance to confirm the necessity of MRI before removing a functional SNM device. Since SNM replacement was rare in this cohort, research is needed on the safety of various MRI types with SNM devices in vivo..

Keywords

Fecal incontinence, magnetic resonance imaging, neurourology, refractory overactive bladder, sacral neuromodulation.