A Rare Case of Hypersensitivity Reaction Associated With Sacral Neuromodulation Hardware

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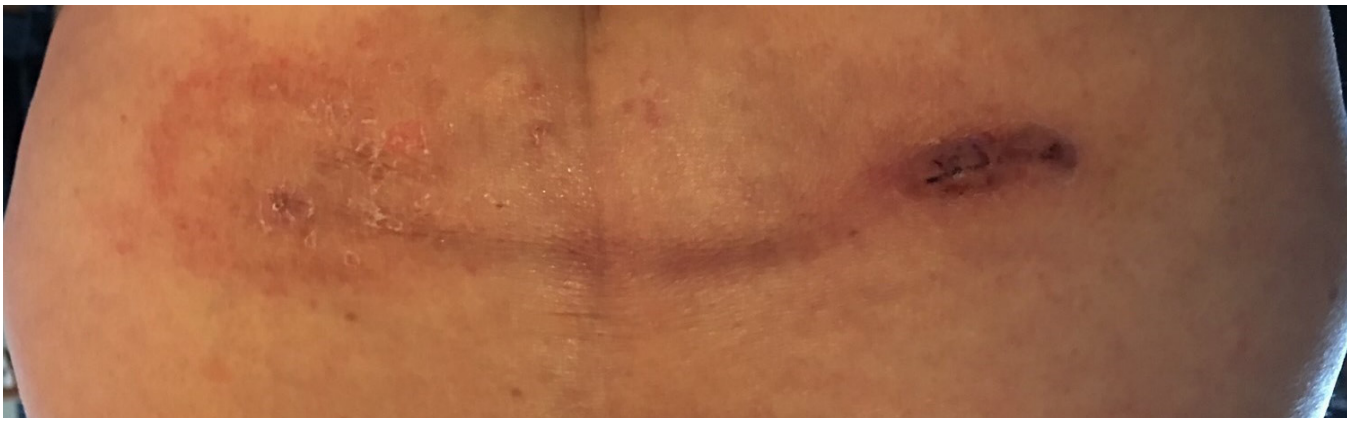
A 77-year-old female with history of lymphoma status post radiation therapy presented with approximately 10 years of intermittent urinary retention, managed with clean intermittent catheterization. Urodynamic studies revealed minimal detrusor contraction (3 cm H_2O) and a low amplitude, interrupted flow curve with maximum flow 9.5 mL/sec, average flow 2 mL/second, and appropriate EMG silencing. Cystoscopy was within normal limits. We proceeded with staged placement of Medtronic InterStim device. After stage 1 placement of the sacral neuromodulation device, the patient reported voiding larger volumes with less straining (an approximate 80% subjective improvement), denied further episodes of urinary retention, and her PVR improved from between 100 mL and 300 mL to 50 mL. However, she rapidly developed an erythematous skin reaction overlying the device lead (**Figure 1**). Physical examination revealed a discrete area of erythema overlying the neuromodulation lead from percutaneous entrance to exit site. The initial differential diagnosis included infection versus inflammatory response. Due to concern for infection, the device was promptly removed, at which time no purulence was noted along the course of the device components. Subsequent patch allergy testing revealed a strong reaction to vanadium, which is often used in titanium alloy, an external component of the InterStim implant. Both newer generation Medtronic and Axonics devices contain this titanium alloy; therefore, because of allergic intolerance to all available sacral neuromodulation devices, the patient's urinary symptoms were subsequently managed with percutaneous tibial nerve stimulation. While there are documented cases of adverse events after sacral neuromodulation including device migration[1,2], device infection[3], and gluteal hematoma[4], to our knowledge there are no cases in the literature describing a hypersensitivity to sacral neuromodulation devices. The American Contact Dermatitis Society does not recommend preoperative hypersensitivity evaluation for patients undergoing hardware implantation but does recommend a risk-benefit analysis when considering device re-implantation in patients who demonstrate hypersensitivity to a metal implant[5].

FIGURE 1.



Key Words

Implantable neurostimulators, adverse effects, hypersensitivity, urinary retention, therapy

Competing Interests

None declared.

Patient Consent: Obtained.

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