

SACRAL NEUROMODULATION AND CARDIAC PACEMAKERS

Hypothesis / aims of study

Sacral neuromodulation [SNS] is an effective treatment for non-obstructive urinary retention and overactive bladder [OAB] refractory to antimuscarinics. Cardiac pacemakers provide rate control via sensing aberrant cardiac electrical activity and delivering precisely timed electrical impulses. The potential for cross-talk between implanted devices remains speculative.

Study design, materials and methods

We present a series of 2 patients with cardiac pacemakers who subsequently underwent staged SNS implantation and 2 patients who had previously had successful SNS implantation who later required cardiac pacemakers. Patients were all female with a mean age of 75. Indications for SNS included OAB refractory to antimuscarinics. Indications for cardiac pacemakers included: 3rd degree AV block, sinus node dysfunction with documented symptomatic recurrent bradycardia, and syncope. Cardiac devices provided either continuous or intermittent rate control. None of the devices had cardioversion or defibrillator capability. All patients underwent staged placement of InterStim [Medtronic, Minneapolis, MN] neuroelectrodes in the S3 foramen under monitored sedation with local anesthetic. Implantable pulse generators [IPG] were all programmed for continuous stimulation.

Results

Cardiac monitoring intraoperatively and postoperative telemetry did not demonstrate cross-talk with test stimulation. All patients met criteria [>50% reduction in their urgency, frequency, urge incontinent events] for placement of IPG's. IPG's were placed contralaterally to limit potential interaction between the IPG patient programmer and the cardiac pacemaker. Monitored programming of the IPG's did not reveal cross-talk. Patients continue to benefit from sustained reduction in their OAB complaints without untoward changes in cardiac status related to SNS at 6 month follow-up.

Interpretation of results

SNS does not demonstrate cross-talk with cardiac pacemakers.

Concluding message

The use of implantable pulse generators to treat various conditions [gastrointestinal motility dysfunction, chronic migraine, arrhythmias, lower urinary tract dysfunction] is increasingly common. In this small series, SNS appears to be safe in the setting of cardiac pacemakers without cardioversion/defibrillation technology.

<i>Specify source of funding or grant</i>	none
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	IRB of central maine medical center
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes