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SACRAL NEUROMODULATION DEVICE INFECTION: ANALYSIS OF RISK FACTORS

Hypothesis / aims of study

With the recent increase in the usage of sacral neuromodulation for voiding dysfunction, adverse events associated with the procedure such as infections have also risen. The purpose of this retrospective study is to compare the rate of infection in relation to the type of the procedure performed. We also aim to identify factors that may help lower the risk of infection and better salvage the device.

Study design, materials and methods

All patients who underwent sacral neuromodulation from 08/2001 to 07/2009 at our institution were identified. Their medical records were retrospectively reviewed. Information such as relevant history, indication for the procedure, performance of percutaneous evaluation (PNE), and type of the procedure was collected. Post operative notes including patient's symptomatic improvement and adverse events and their management were also reviewed.

Results and interpretation of results

A total of 126 patients underwent sacral neuromodulation therapy at our institution, 93 patients (74%) were females and 33 patients (26%) were males. The mean age was 64.1. 61 patients underwent PNE followed by single stage full implant, 61 underwent staged procedure, and 4 revision of their pre-existing interstim.

Five cases of infection (3.96%) were identified; all occurred after staged procedure. four out of the five were after the first stage (6.6% of all staged procedure) and one after second stage. Only two cases out of 126 patients (1.6%) ended up by explantation of the device .In both patients, culture of the wound site grew Methicillin resistant Staphylococcus Aureus (MRSA).

All cases of infection were detected early resulting in hospitalization for intravenous (IV) antibiotics. Salvage of the device was possible in 60% of the infection cases.

Concluding message

Overall infection rate is low and all cases occurred with staged procedure. No infection developed with full implant so every effort should be made to go for PNE followed by possible full implant. The long waiting time between first and second stage procedure seems to be a major risk factor. Shortening the waiting time may help to decrease the infection rate. Careful preparation for the surgery may also contribute to our low infection rate. Early recognition and immediate administration of proper antibiotics lead to better salvage of the device.

Table 1: Rate of infection with Sacral Neuromodulation therapy as shown by different studies.

Author	Year	Number of patients underwent 1st stage/2nd stage	Infection during the testing phase	Infection after IPG implant	Infection during any stage	Explantation caused by infection
Steven Siegel	2000	581/219		6.1%	6.1%	
K. Everaert	2000	177/53		1 (2 %)	1 (2%)	
Thomas Kessler	2006	209/91	2 (0.96%)	2 (2.1%) Revision done for 1 Patient	4 (3.06%)	
Adonis Hijaz	2006	214/161		4patients 2.5%(Infection with draining sinus)	4 (2.5%)	8 (5%)
Khan Pham	2008	124	5 (4%)		5 (4%)	
Wesely White	2009	221/202		7 (3.5%)	7 (3.5%)	

References:
[1] Henry, Gerard D. "revision washout decreases implant capsule tissue culture positivity: a multicenter study." *Journal of urology*. 179. (2008): 186-190.
[1] White Wesley M., Klein Frederick A., "incidence and predictors of complications with sacral neuromodulation." *Urology* 73(2009): 731-735.
[1] Daniels, David H. "Sacral neuromodulation in diabetic patients: success and complications in the treatment of voiding dysfunction." *Neurourology and urodynamics*. (2009)
[1] Washington, Blair B. "Implant infection after two-stage sacral nerve stimulator placement." *Int Urogynecol J*. 18. (2007): 1477-1480
[1] Siegel Steven W., Schmidt Richard A., "Long term result of a multicenter study on sacral nerve stimulation for treatment of urinary urge incontinence, urgency-frequency, and retention." *Urology* 56(2000): 87-91.
[1] Everaert K, Wyndaele J.J. "Patient satisfaction and complications following sacral nerve stimulation for urinary retention, Urge incontinence and perineal pain: a multicenter evaluation." *Int Urogynecol* 11(2000): 231-236.
[1] Kessler, Thomas M., Burkhard Fiona C., "Sacral neuromodulation for refractory lower urinary tract dysfunction: Results of a nationwide registry in Switzerland." *European urology* 51(2007): 1357-1363.
[1] Hijaz Adonis, Rackley Raymond, "Complications and troubleshooting of two-stage sacral neuromodulation therapy: A single-institution experience." *Urology* 68(2006): 533-537.
[1] Pannek, Jurgen. "Bacterial contamination of test stimulation leads during percutaneous nerve stimulation." *Urology*. 65. (2005): 1096-1098

References
1. Henry, Gerard D. "revision washout decreases implant capsule tissue culture positivity: a multicenter study." Journal of urology. 179. (2008): 186-190.
2. White Wesley M., Klein Frederick A., "incidence and predictors of complications with sacral neuromodulation." Urology 73(2009): 731-735.
3. Daniels, David H. "Sacral neuromodulation in diabetic patients: success and complications in the treatment of voiding dysfunction." Neurourology and urodynamics. (2009)

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