

ANAESTHESIA FOR CAESAREAN DELIVERY IN A PATIENT WITH A SACRAL NEUROMODULATION DEVICE

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Introduction

Sacral neuromodulation (SNM)

A technique that electrically stimulates a sacral spinal nerve root to modulate a neural pathway with the aim of treating bladder and/or bowel dysfunction.

Accepted therapy for

- Non-obstructive urinary retention - Fowler’s syndrome.
- Refractory urinary urgency and frequency
- Urgency urinary incontinence
- Faecal incontinence¹

The use of Sacral neuromodulation (SNM) devices in pregnancy remains controversial.

Fowler’s syndrome

A form of chronic urinary non obstructive retention caused by the inability of urethral sphincter to relax

A rare but debilitating condition affecting young women

Symptoms:

- Inability to empty the urinary bladder
- Frequent urinary tract infections leading to back pain , suprapubic pain and or dysuria

Diagnosis:

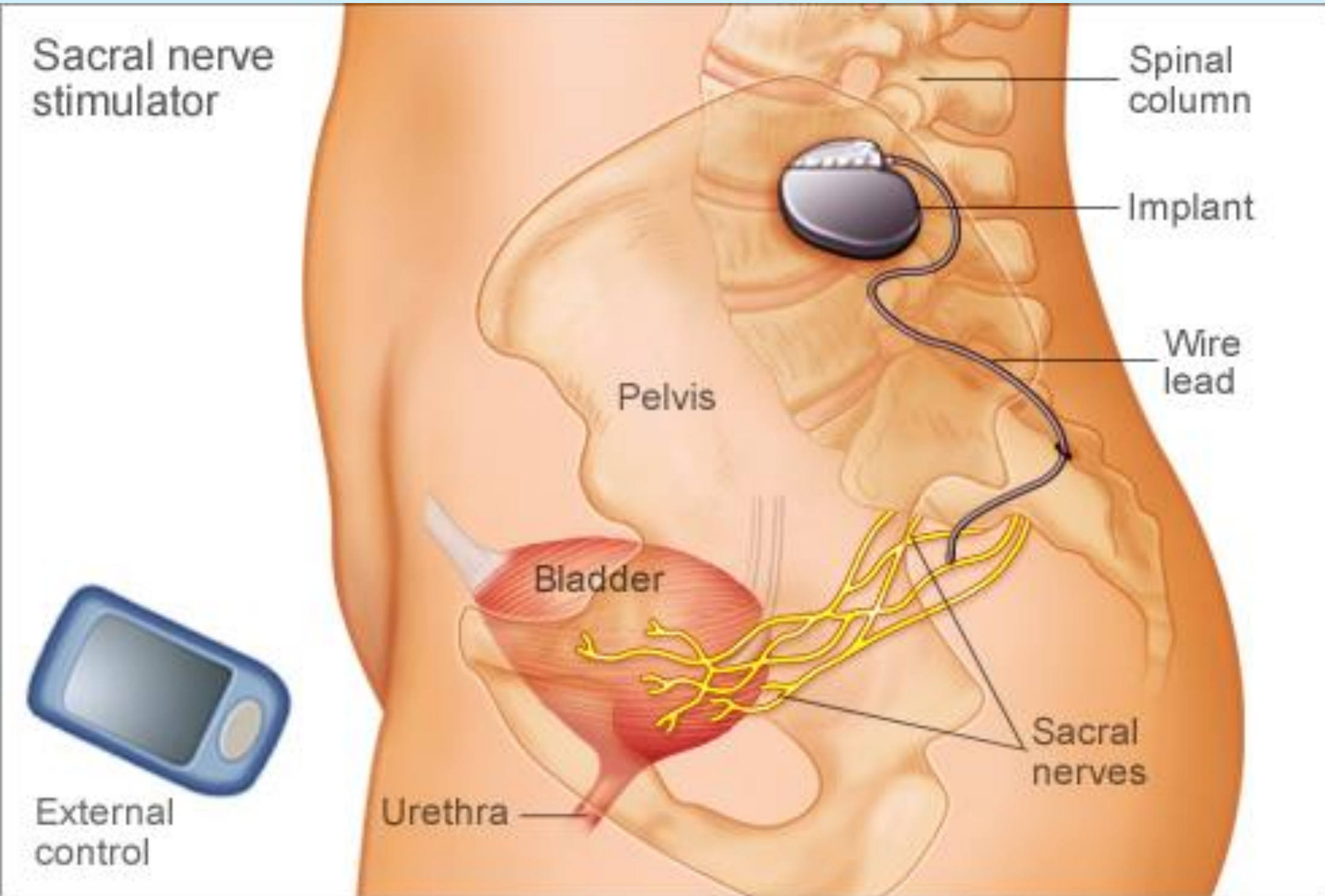
- Classical history of chronic retention of urine
- Uroflowmetry tests showing high postvoid residual volumes
- Increased resting urethral pressure profile
- Urethral sphincter electromyography (Gold standard)

Treatment:

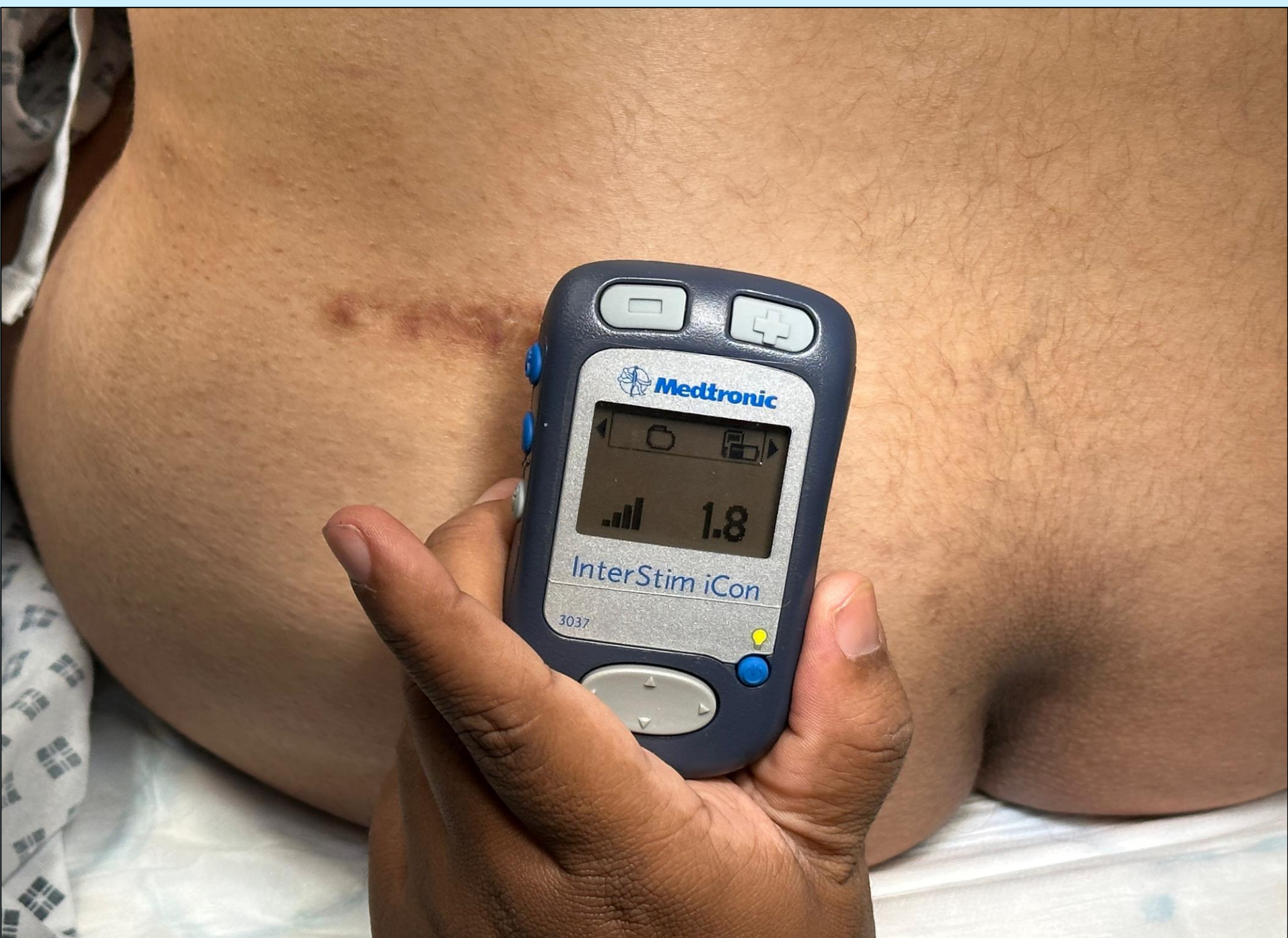
- Is still under research
- Aim is to restore bladder emptying
- Regular Clean intermittent catheterisation or urethral catheterisation and suprapubic catheterisation
- Sacral neuromodulation is the only intervention that is restorative.²

Case report

History	Planning	Management
- A 32 year old woman with Fowler’s syndrome was referred to the obstetric anaesthesia clinic in her second pregnancy. - She had an uneventful spinal anaesthesia for C-section in her first pregnancy in 2018. - Her Fowler’s syndrome was managed by self-catheterisation until an SNM was inserted in 2021 in India. - Medical history: corrected atrial septal defect and mild asthma.	- An obstetric multi-disciplinary team meeting (MDT) found no contraindications to vaginal birth. - The patient requested caesarean delivery as her surgeon was concerned about the risk of device & electrode displacement. - The SNM electrodes were in the sacral area and would be unaffected by neuraxial anaesthesia.	- On the day of caesarean, her husband turned off the SNM using a remote control (picture 2) . - The surgical team were advised to use bipolar electrocautery. - A single shot spinal anaesthetic was used with uneventful surgery and recovery. - The SNM was switched on in recovery. Her urinary catheter was removed in the evening, and she had a normal voiding pattern. - She was discharged home the next day.



Picture 1 : Showing location of SNM device taken from: <https://gcurology.com.au/sacral-neuromodulator-insertion>Sacral.



Picture 2 : Patient with gluteal scar showing SNM device insertion site and external control device.

Discussion

- The use of SNM in pregnancy has been controversial, with manufacturers advising against its use.
- There are concerns of potential theoretical teratogenic and abortifacient effects of SNM.
- Women are still being told that they cannot use it during pregnancy
- Switching it off leads to a recurrence of symptoms and there is no evidence of harm to mother or foetus in literature till date.
- The mode of delivery should be discussed at MDT as there is significant risk of SNM malfunction post-partum, although no evidence that this is reduced by caesarean delivery.
- It is important for anaesthetists to know where the device has been implanted, where the leads lie and how it can be turned off and on again at the time of surgery.
- Due to electromagnetic interference device is turned off and bipolar cautery is recommended for surgical procedures.
- After delivery the device must be checked for efficacy and returned to original settings .

References

- Goldman HB, Lloyd JC, Noblett KL, et al. International Continence Society best practice statement for use of sacral neuromodulation. Neurourol Urodyn John Wiley and Sons Inc.; 2018; 37: 1823–48
- University College London. Fowler’s Syndrome. Accessed on 25th January 2024. [https:// www.ucl.ac.uk/ion/fowlers-syndrome](https://www.ucl.ac.uk/ion/fowlers-syndrome)