Novel Use of Percutaneous Thoracic Spinal Cord Stimulation for Refractory Interstitial Cystitis

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BACKGROUND

- Interstitial cystitis/bladder pain syndrome (IC/BPS) affects ~2–3 million individuals in the U.S.
- Characterized by pelvic pain/pressure, urinary urgency, frequency, and nocturia.
- Pathophysiology is multifactorial: urothelial dysfunction, sensory nerve upregulation, and chronic inflammation
- Diagnostic uncertainty and variable treatment response contribute to significant morbidity.
- Evidence for thoracic spinal cord stimulator (SCS) in IC/BPS is extremely limited.

OBJECTIVE

To describe a case of refractory IC/BPS successfully treated with thoracic percutaneous SCS, highlighting potential neuromodulation of both pain and urinary symptoms.

METHOD

- 62-year-old woman with persistent lumbar spinal pain after L4–5 laminectomy/discectomy with superimposed IC/BPS.
- Failed gabapentin, pregabalin, cyclobenzaprine, methocarbamol, tizanidine, celecoxib, and narcotics.
- Sacral nerve stimulation trial provided no benefit for IC symptoms.
- Refractory radicular pain prompted SCS trial.

Thoracic SCS may benefit both **pelvic pain** and **urinary symptoms** in patients with refractory IC/BPS.

PROCEDURE/LEAD PLACEMENT



- Abbott SCS system
- Two 8-contact leads
- Left: superior T7
- Right: superior T8
- Burst stimulation
- ~70% radicular pain relief + improved urinary incontinence

OUTCOME MEASURES

Outcome	Pre	2-wk	Change
NRS (pain)	8.4	6.33	↓24.7%
ODI	96%	72%	↓25.0%
ICPI	9	5	↓44.4%
ICSI	7	4	↓42.9%

RESULTS

- Improvement reported in both low back and bladder pain.
- Urinary urgency, frequency, and nocturia greatly improved.
- Permanent implantation followed a successful trial.

CONCLUSION

- Thoracic SCS may modulate central pain-processing pathways with downstream effects on visceral sensory signaling.
- Improvement in bladder symptoms after thoracic stimulation suggests the possibility of shared neural pathways between somatic and visceral pain.
- Sympathetic/visceral neuromodulation may contribute to bladder symptom improvement, but the mechanism remains uncertain.

CLINICAL IMPLICATIONS

- Consider SCS as a potential adjunct in highly selected patients with refractory IC/BPS and coexisting neuropathic pain after failure of established therapies.
- Prospective studies are needed to define efficacy, mechanism, durability, and patient selection.

Percutaneous thoracic SCS coincided with improvement in both pain and IC/BPS symptoms.