

Salvage of a Failed Spinal Cord Stimulator Trial

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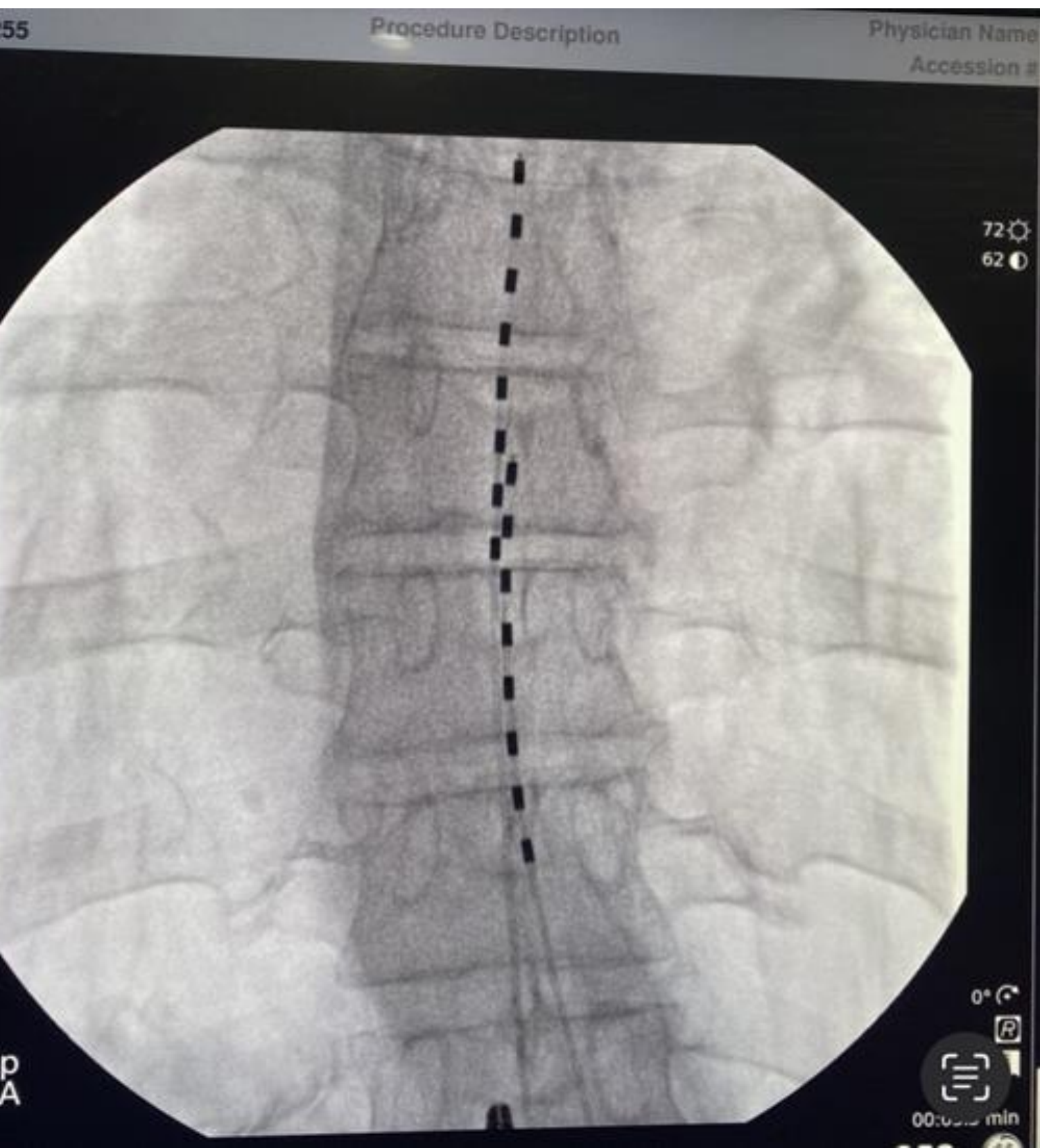
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INTRODUCTION

The prevalence of an episode of low back pain in a person in the United States is 80%, and as the population ages, so will the number of sufferers.¹⁻³ With the exception of general practitioners, pain specialists are the most common source of care for patients.¹ Spinal cord stimulation, a minimally-invasive and reversible therapy, should be explored when conservative management has been exhausted.¹⁻⁵

PATIENT BACKGROUND

- 64M with PMHx CAD, CHF, chronic pain related to lumbar DDD and spondylosis
 - LBP, buttock and radiculopathy
- PSHx: lumbar foraminotomy 10 years ago, lumbar spinal surgery with fusion ~5 years ago, C6-T1 ACDF October 2020
- Failure of nonsurgical management:
- Physical therapy/home exercise
- Tylenol, NSAIDs, gabapentin, pregabalin, cyclobenzaprine, tramadol, hydrocodone
- L3-4 and L4-5 TFESI, SIJ injections, caudal ESIs, MBBs, hardware blocks
- Repeat surgical evaluation - not optimal surgical candidate



INTERVENTION

TRIAL 1

- The patient consented and underwent a 2-lead SCS trial
- One lead was advanced to the superior endplate of T7, the other advanced to the middle of T8
- Patient was evaluated in the recovery area and reported good paresthesia coverage. Programming was completed by the device representative
- Due to lack of relief at day 5, patient brought back to clinic

Trial Day	Pain Relief
1	Soreness, but 50% relief
2	75% relief
3	Doing well but not getting as much relief, we are working on programming
4	Less relief, We have been adjusting his programming
5	No update, Patient brought to clinic for evaluation

TRIAL 2

- Verified no lead migration or fracture with fluoroscopic imaging
- We had a lengthy discussion on expectations for SCS implant, and that if we move forward with implant using the second system, he should expect 65% relief or even less
- He was agreeable to this and decided to move forward with SCS implant

Pulse Generator Device Switched	
Trial Day	Pain Relief
1	Minimal improvement
2	50% improvement with both standing and sleep
3	65% improvement
4	65% improvement, Trial deemed a success, Leads removed

RESULTS S/P PERMANENT IMPLANT

- <1 week follow-up: 50% improvement in pain complaint
- 1 month follow-up: 60% improvement. Norco reduced to 5mg q8h
- 3 month follow-up: 60% improvement. Discontinued Norco, continue pregabalin 100mg TID

DISCUSSION/PEARLS

- If the patient is reporting improvement and then abrupt loss of therapy, consider lead migration (13-22% of trials)^{6,7}
- If lead migration has occurred, consider aborting and offer a re-trial “pending insurance approval and willingness”
- It is possible to extend a trial using a different SCS pulse generator if the patient is not responding but is open to continuing a trial
- Consider trial results are based upon reports from device representatives, and this can constitute a conflict of interest

REFERENCES

- Deyo RA, Tsui-Wu YJ. Descriptive Epidemiology of Low-back Pain and Its Related Medical Care in the United States. *Spine (Phila Pa 1976)*. 1987;12(3):264-268.
- Hoy D, Bain C, Williams G, et al. A systematic review of the global prevalence of low back pain. *Arthritis Rheum*. 2012;64(6):2028-2037.
- Maher C, Underwood M, Buchbinder R. Non-specific low back pain. *The Lancet*. 2017;389(10070):736-747.
- Vallejo R, Bradley K, Kapural L. Spinal Cord Stimulation in Chronic Pain. *Spine (Phila Pa 1976)*. 2017;42(14):S53-S60.
- Yong, R. Jason., Nguyen, Michael., Nelson, Ehren., & Urman, R. D. (Eds.). (2017). *Pain Medicine An Essential Review* (1st ed. 2017.). Springer International Publishing.
- Waldman SD. Lumbar Spinal Cord Stimulation: Stage I Trial Stimulation. In: *Atlas of Interventional Pain Management*. 5th ed. Elsevier; 2021:1095-1098.
- Waldman SD. Spinal Cord Stimulation: Stage II Pulse Generator Implantation. In: *Atlas of Interventional Pain Management*. 5th ed. Elseiver; 2021:1099-1105.