

DORSAL ROOT ENTRY ZONE LESIONING AFTER FAILED SPINAL CORD STIMULATION AND INTRATHECAL PAIN PUMP THERAPY

Blake Evans, MD; Timothy Sowder, MD; Michael Kinsman, MD

Department of Anesthesiology, University of Kansas Medical Center, Kansas City, Kansas

BACKGROUND

- Intractable neuropathic pain following a spinal cord injury is a feared complication that poses unique therapeutic challenges.
- Initial treatment for neuropathic pain involves a combination of multidisciplinary conservative care, medications, and interventional therapies.
- Spinal cord stimulation and intrathecal targeted drug delivery are options if the pain is deemed refractory.¹
- Dorsal root entry zone (DREZ) rhizotomy involves nerve destruction at the dorsolateral sulcus.²



Figure 1: Intraoperative sagittal view of probe placement

CASE

- A 26-year-old female with refractory neuropathic pain found significant relief with a selective DREZ rhizotomy.
- Patient had previously suffered from chronic, severe low back and bilateral lower extremity neuropathic pain secondary to a gunshot wound with resulting spinal cord injury.
- Conservative measures such as physical therapy and medications failed to provide relief. She underwent multiple interlaminar and transforaminal steroid injections, spinal cord stimulation, and intrathecal pain pump insertion without significant improvement.
- She was then referred to Neurosurgery to evaluate for possible selective nerve root rhizotomy.
- Patient underwent a left L4 DREZ rhizotomy followed by the same procedure at right S1 which provided significant relief to her neuropathic pain.
- The procedure did not result in worsened sensory impairment or numbness of her extremities.
- She is now able to perform her normal daily activities and participate in intensive physical therapy with a decreased need for pain medications.

DISCUSSION

- There are multiple treatment options available for neuropathic pain, however these more conservative therapies are not always successful.
- This case highlights the potential for significant pain relief following selective DREZ rhizotomy in the treatment of neuropathic pain resistant to spinal cord stimulation and intrathecal drug delivery.

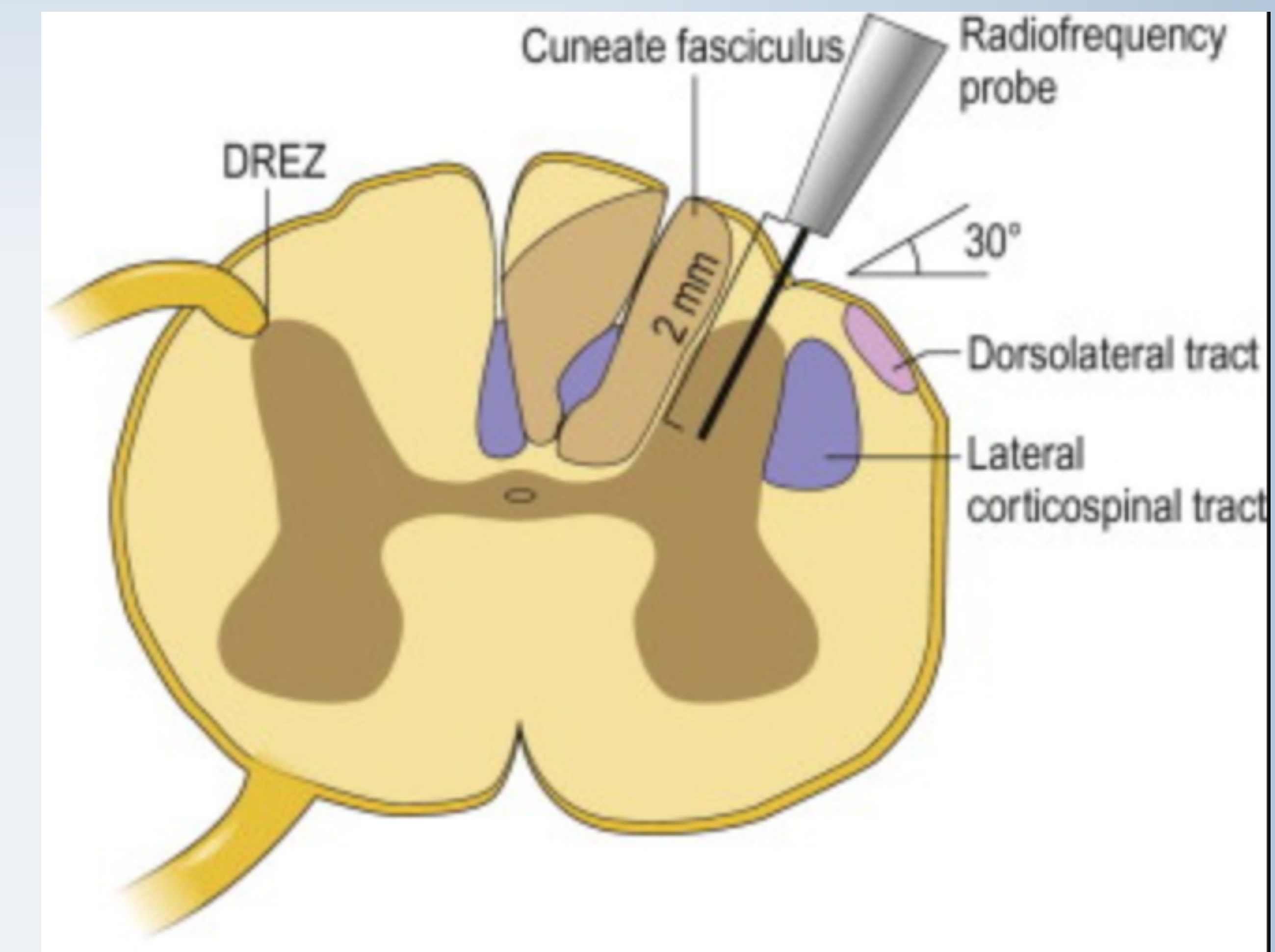


Figure 2: Probe placement during DREZ rhizotomy

<https://musculoskeletalkey.com/strategies-for-treating-pain-2/>

CONCLUSIONS

- Severe neuropathic pain after sustaining a spinal cord injury can be debilitating and life-altering.
- Appropriate referral, proper patient selection, and thorough risk/benefit discussions remain imperative to maintain successful outcomes.

REFERENCES

1. Bates, D., et al. A Comprehensive Algorithm for Management of Neuropathic Pain. *Pain Med* 2019 Jun 1; 20(Suppl 1):S2-S12. doi: 10.1093/pm/pnz075
2. Piyawattanametha, N., et al. Efficacy and factors determining the outcome of dorsal root entry zone lesioning procedure (DREZotomy) in the treatment of intractable pain syndrome. *Acta Neurochir (Wien)*. 2017 Dec;159(12):2431-2442. doi: 10.1007/s00701-017-3345-3.

The authors have no conflicts of interest regarding the content of this presentation