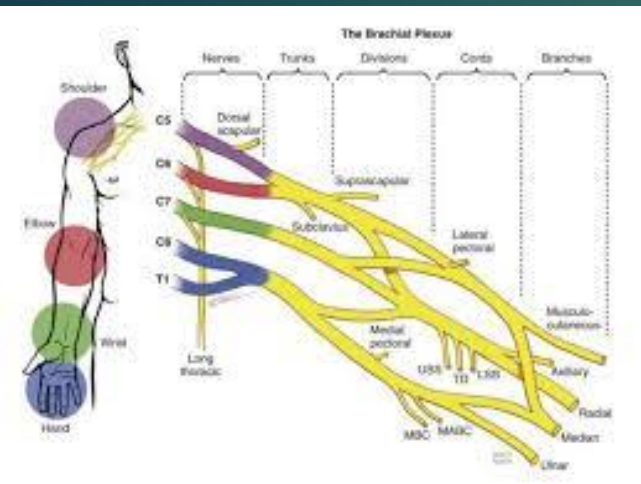


Peripheral Nerve Stimulation for the Treatment of Parsonage-Turner Syndrome: A Report of Two Cases

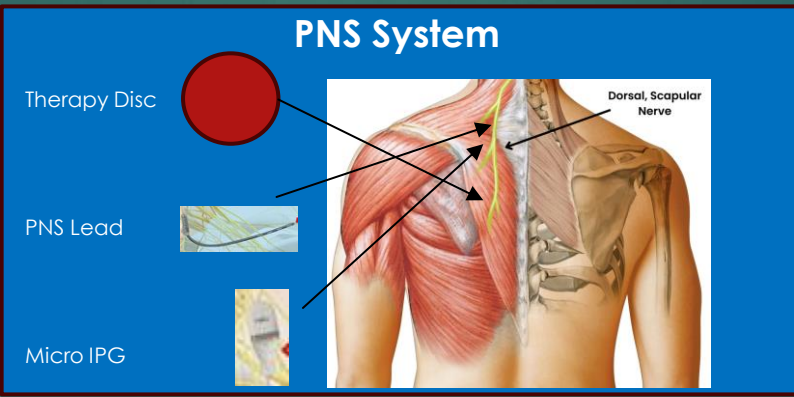
Suryateja D. Rao¹, Jason E. Crowther¹, Pascal Scemama de Gialluly¹
¹Division of Pain Medicine, Department of Anesthesiology and Perioperative Medicine, University of Massachusetts Chan Medical School

Introduction

- **Parsonage-Turner syndrome (PTS)** is a rare neuromuscular condition (prevalence ~1/100,000)
 - PTS presents as sudden-onset pain and neurological symptoms of the brachial plexus



- Current standard-of-care is pharmaceutical (analgesia, muscle relaxation, steroid therapy)
- **Peripheral nerve stimulation (PNS)** is an emerging modality for neurogenic pain and functional deficiency

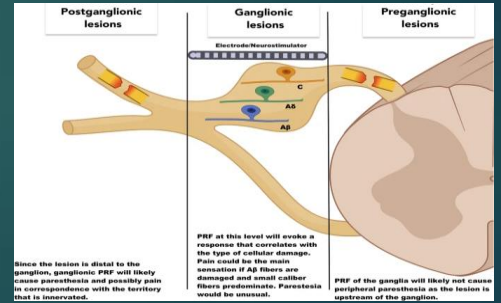


Case Characteristics

Case 1	Case 2
45 y.o. F	65 y.o. M
No significant PMH	Cervical spinal stenosis, total hip/knee arthroplasty
Cyclobenzaprine, anti-migraine therapies, Botox	Acetaminophen, tizanidine, cyclobenzaprine
C5, dorsal scapular nerve blocks	C5, dorsal scapular nerve blocks
Successful 1-week PNS trial	Successful 1-week PNS trial
Sustained pain relief (to present day)	Lack of efficacy, return to nerve block regimen

Discussion

- Even with 2 very similar clinical presentations of PTS, **variable efficacy** of PNS for long-term management
- Highlights:
 - Multifactorial nature of both neurogenic pain syndromes and of neuromodulation as a therapy
 - Presence of “unknown” confounders of therapeutic efficacy of PNS (e.g. cervical radiculopathy)
- Opens door for further investigation into:
 - Impact of lesion location (pre- vs. post – DRG) on PNS efficacy
 - Mechanism of action of neurostimulation, especially PNS (retrograde vs. anterograde stimulation, advantages of both)



“Brachial Plexus Injuries - Orthoinfo - AAOS.” *Orthoinfo*. orthoinfo.aaos.org/en/diseases-conditions/brachial-plexus-injuries/. Accessed 18 Nov. 2024.
 “Peripheral Nerve Stimulation (PNS).” *Dr. Robert Ycaza - Bradenton Pain & Wellness Center*, 2 Feb. 2021. robertycaza.com/peripheral-nerve-stimulation/.
 Demartini, L., Abbott, D.M., Bonezzi, C. et al. Radiofrequency stimulation of the dorsal root ganglion as a diagnostic tool for radicular pain syndromes: six representative cases. *J Anesth Analg Crit Care* 4, 60 (2024). <https://doi.org/10.1186/s44158-024-00194-y>
 Feinberg JH, Radecki J. Parsonage-Turner syndrome. *HSS J*. 2010 Sep;6(2):199-205. doi: 10.1007/s11420-010-9176-x. Epub 2010 Jul 30. PMID: 21886536; PMCID: PMC2926354.
 Smith CC, Bevelacqua AC. Challenging pain syndromes: Parsonage-Turner syndrome. *Phys Med Rehabil Clin N Am*. 2014 May;25(2):265-77. doi: 10.1016/j.pmr.2014.01.001. Epub 2014 Mar 18. PMID: 24787332.
 Van Eijk JJ, Groothuis JT, Van Allen N. Neuralgic amyotrophy: An update on diagnosis, pathophysiology, and treatment. *Muscle Nerve*. 2016 Mar;53(3):337-50. doi: 10.1002/mus.25008. Epub 2016 Jan 20. PMID: 26662794.