

Introduction

Upper extremity ischemia & necrosis in a patient with severe secondary Raynaud's phenomenon, improved with an **infraclavicular nerve block**.

Case Presentation

- ❖ A 60 y/o F
- ❖ PMH: multiple sclerosis, secondary Raynaud's phenomenon due to limited systemic sclerosis, hypothyroidism, Dupuytren's contracture
- ❖ Presentation: **right index finger ischemia with ulceration**
- ❖ Intolerant to diltiazem and sildenafil; poor response to alprostadil.
- ❖ Pain team consulted for intractable pain in the right hand.
- ❖ **Difficulty** using hydromorphone (**PCA**) **device** due to digit lesions.
- ❖ Oral and intravenous analgesics → **inadequate** pain relief.
- ❖ **Infraclavicular nerve block** placed with 20 mL of 0.25% ropivacaine and 2mg of dexamethasone, followed by a catheter with a continuous infusion of 0.2% ropivacaine.
- ❖ **Immediate pain relief** after block
- ❖ Physical Exam:
 - 1) Right arm → erythematous, dilated veins, warm skin
 - 2) Blister popped
 - 3) Ulcer started to heal
- ❖ Nerve block catheter → 1 week
- ❖ Rheumatologic medications adjusted.
- ❖ Discharged **pain free** without the catheter.
- ❖ **4 month follow-up:**
 - ❖ continued healing of her finger
 - ❖ decreased pain
 - ❖ **no further Raynaud's flares**



During admission



After nerve block

-Dilated veins
-erythematous skin



4 month post-discharge

References

- 1) Greengrass, Roy A, et al. "Continuous Regional Anesthesia before Surgical Peripheral Sympathectomy in a Patient with Severe Digital Necrosis Associated with Raynaud's Phenomenon and Scleroderma." Regional Anesthesia and Pain Medicine, vol. 28, no. 4, 1 Aug. 2003, pp. 354-358, [https://doi.org/10.1016/s1098-7339\(03\)00186-x](https://doi.org/10.1016/s1098-7339(03)00186-x). Accessed 21 June 2024.
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- 3) Stephas, Sarah A, et al. "Peripheral Nerve Blockade for Patients with Raynaud Phenomenon and Other Causes of Digital Ischemia: A Case Report and Practice Implications." AANA Journal, vol. 89, no. 5, 1 Oct. 2021, pp. 391-395.
- 4) Wigley, Fredrick. "UpToDate." Www.uptodate.com, 14 May 2024, www.uptodate.com/contents/treatment-of-severe-or-refractory-raynaud-phenomenon?search=raynauds+treatment&source=search_result&selectedTitle=2~150&usage_type=default&display_rank=2#H2846880340. Accessed 27 July 2024.
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Discussion

- ❖ Nerve blocks → **5th line treatment** for severe, refractory cases
- ❖ Documented nerve blocks performed: stellate ganglion, lumbar sympathetic, supraclavicular, and axillary blocks.
- ❖ Our case → **1st** reported case of **continuous infraclavicular nerve block** for Raynaud's Phenomenon.
- ❖ Surgical sympathectomies
 - decrease severity of future Raynaud's attacks
 - information lacking on long-term effects of regional anesthesia induced sympathectomies.
- ❖ Pathophysiology of analgesia:
 - **Sympathectomy** → vasodilation, relieving ischemic pain & promoting healing of ulcer
 - **Local anesthetic** → reduced pain transmission by inhibiting Na channels on the neuronal cell membrane.
- ❖ Long-term impact:
 - significant improvement in finger at 4 month follow-up
 - no new flares
- ❖ Emotional impact:
 - Could not use hydromorphone PCA → pts may feel embarrassed
 - Notable change in **affect**; more **positive outlook** on life

Conclusion

By sharing our case, we hope to increase awareness of the key role an infraclavicular nerve block played in our patient's recovery from a severe Raynaud's flare, and to encourage further research into advancing regional anesthesia techniques as **earlier management** options for Raynaud's phenomenon.