

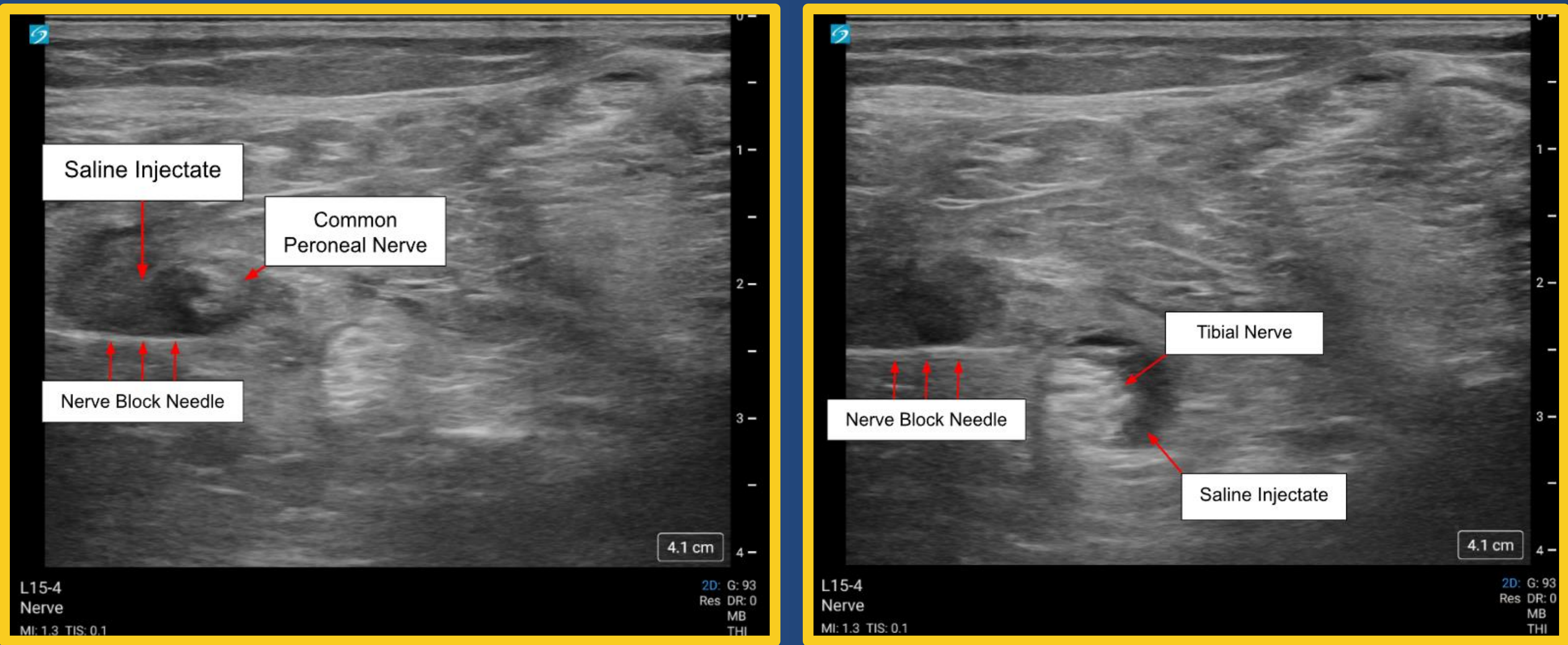
Rescue Saline Washout for Popliteal Sciatic Peripheral Nerve Block

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Background

- Peripheral nerve blocks are a common and highly effective method of mitigating perioperative pain, but could be associated with less desirable effects like motor blockades
- Previous literature described successful alleviation of respiratory distress from phrenic nerve palsy secondary to interscalene blocks using rescue saline washouts [1]
- Mechanism of saline washouts is not completely elucidated, it potentially reverses the effects of local anesthetic blockade by diluting it, or perhaps changing the pH and the sodium concentration [2]
- This case report showcases a successful rescue saline washout for a popliteal sciatic block with regain of motor and sensory function for a patient that required expedited return to ambulation.



Figures 1 & 2: 0.9% normal saline surrounding the common peroneal nerve (left) and tibial nerve (right). Sonosite Ultrasound utilized with L15-4 MHz Linear Transducer and Pajunk Sonoplex II needle.

Discussion

- Current literature peripheral nerve blockade rescue washouts come from case reports attempting to reverse phrenic nerve palsy
- The mechanism of saline washouts in discontinuing the effects of a local anesthetic block is not fully understood
- Proposed mechanism of rescue saline washout is dilution of local anesthetic, pH change, or sodium concentration effects [2]
- Expected sensory blockade with ropivacaine 0.5% in popliteal sciatic blockade is 20.7 + 6.2 hours [3]. Expected motor blockade is 10.5 + 3.8 hours [4].
- The patient regained modest sensory and motor function faster than expected at 3.5 hours and 4 hours after the initial block respectively (Table 1).
- Of note, the patient reported having **sensation return first prior to meaningful motor restoration**. This pattern is atypical, but at this time the possible mechanism of this is unelucidated by the authors.
- The clinical scenario described in this case report is significant because it is among the first in current literature that utilizes a rescue saline washout for a lower extremity block

Case Presentation

- A 73 year old, 62.4 kg, female with PMH of insulin dependent type 1 diabetes, contracture of right achilles tendon, presented for an elective right ankle arthrodesis with allograft and achilles tendon lengthening
- Single shot adductor canal (10 mL of Ropivacaine 0.5%) and **sciatic popliteal fossa block** (20 mL of Ropivacaine 0.5%) performed
- Case unexpectedly cancelled, but patient needed to be discharged same day
- Rescue saline washout performed with 25 mL of 0.9% normal saline** to approximate a similar volume as the initial block without causing discomfort (Fig 1 & Fig 2)
- Within the first 30 minutes** of the rescue saline washout, the patient reported **regaining some sensation**
- 1 hour after the washout** she did note some dorsiflexion and plantar flexion at **1+/- strength** (Table 1)
- 3 hours after the rescue washout**, the physical therapists noted that the patient had “light and deep touch to the lower extremity,” was able to perform the “sit and stand” maneuvers with a four wheel walker, and was also able to ambulate 200 feet with the walker (Table 1)
- Overall, the patient regained modest sensory and motor function faster than expected at 3.5 hours and 4 hours after the initial block respectively

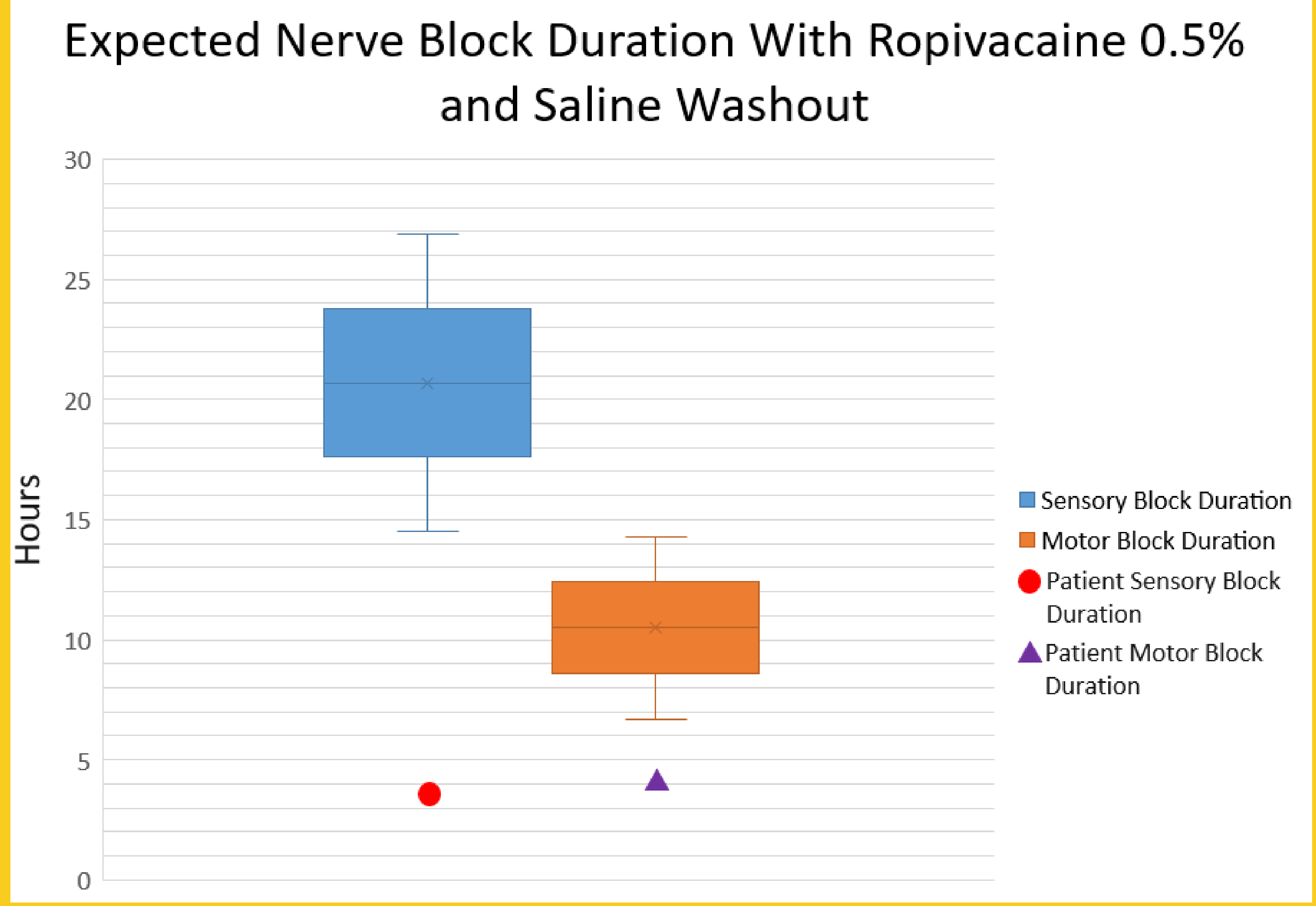


Table 1: Expected sensory block duration range per Fernandez-Guisasola et al (blue, 20.7 ± 6.2 hours) and motor block duration range per Casati et al (orange, 10.5 ± 3.8 hours). The patient’s initial sensory recovery time (red circle, 3.5 hours), and initial motor recovery time (purple triangle, 4 hours) depicted above.

Conclusions

- In circumstances of a block that is “no longer needed” due to unforeseen circumstances, a rescue saline washout for a popliteal sciatic nerve block can potentially provide modest return of sensory and motor function
- Further studies should take place before identifying rescue washouts as standard of care

References

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