

Intercostal Nerve Ablation for Refractory Post-Sternotomy Pain



PRESENTER:
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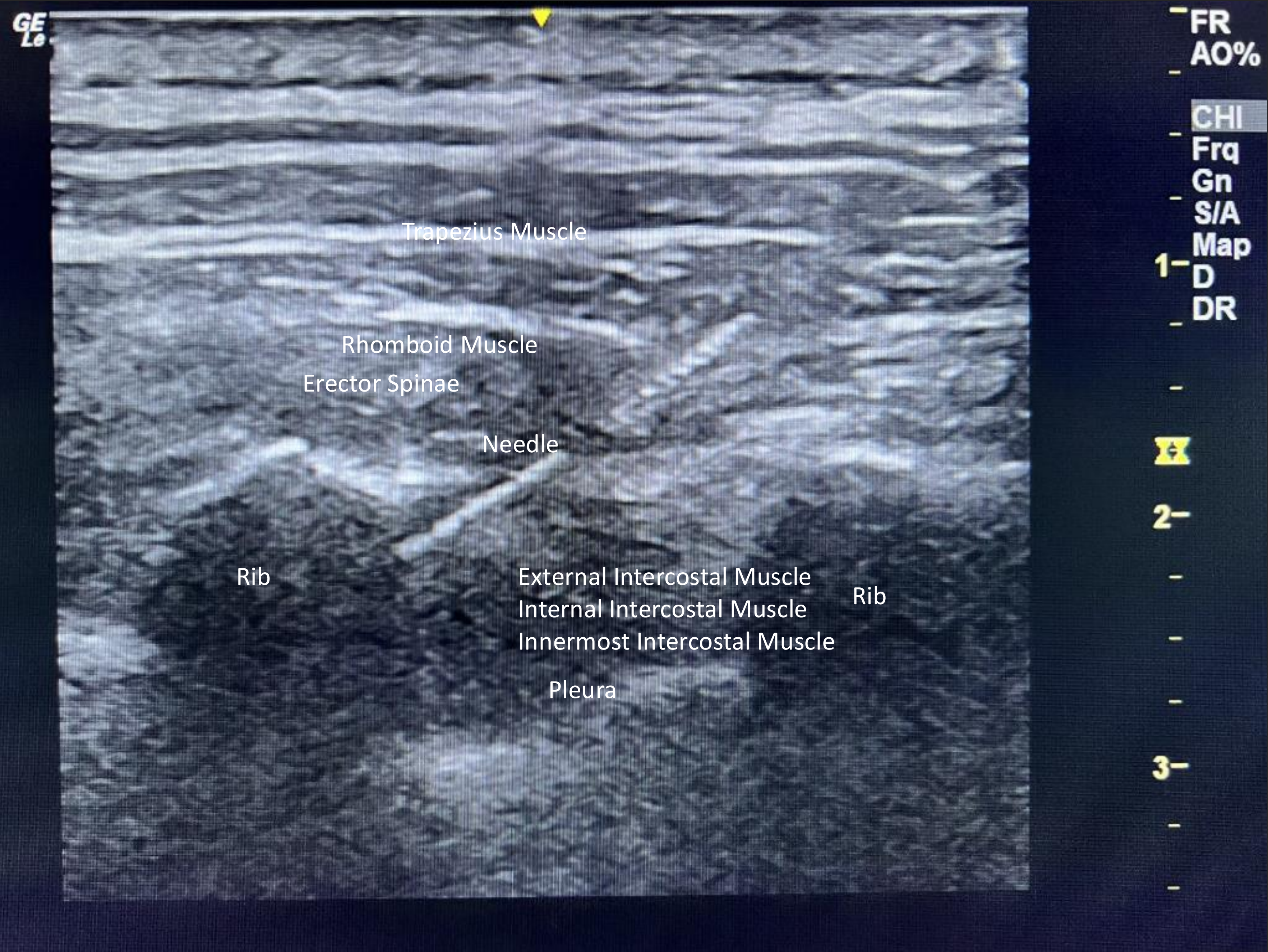
Introduction

- Chronic pain following sternotomy is common after cardiovascular surgeries, with an incidence between 11% and 56% one year postoperatively
- 280,000 patients undergo cardiac surgery annually, thus up to 156,800 may be expected to suffer chronic post-sternotomy pain
- 15% of patients experience severe pain and 47% report pain which interferes with daily activities
- Although intercostal nerve blocks have been well described for temporary post-sternotomy pain relief, and intercostal nerve ablation has been reported for similar pathologies, literature on intercostal nerve ablation specifically for chronic post-sternotomy pain is limited

Case Presentation

- 71-year-old female with history of hypertension, scoliosis, paroxysmal atrial fibrillation, and aortic valve/root and hemiarch replacement in 2019 presented to clinic with 9-10/10 sharp sternotomy scar pain which was temporally associated with her heartbeat and radiated proximally into her neck and distally into the chest
- This pain began immediately after her Bentall procedure, and was refractory to conservative medical management with non-opioid analgesics, and various opioid regimens
- Two years post operatively the patient underwent spinal cord stimulation with leads placed at T8-T9 and reported 0% relief. After spinal cord stimulator lead removal due to inefficacy the patient was referred to our clinic
- Her regimen consisted of duloxetine, 1% lidocaine patches, meloxicam 15mg daily, morphine ER 15mg twice daily and oxycodone/acetaminophen 10mg/325mg three times daily for breakthrough pain
- T3-T5 intercostal nerve blockade was performed using 0.25% bupivacaine with profound relief: a reduction in pain from 9/10 to 5/10, decreased frequency of oxycodone/acetaminophen usage, and omission of her evening morphine dose. She was able to sleep for 10 hours the night of the procedure, something she had been unable to do for the preceding three years
- T3-T5 intercostal nerve radiofrequency ablation was performed with a decrease in VAS from 9/10 to 3/10, sustained decreased opioid consumption, and improved functional status

Intercostal nerve ablation can be a valuable treatment for refractory post-sternotomy pain



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Discussion

- Intercostal neuralgia describes any painful condition of the intercostal nerves along the rib, chest, and abdominal wall. The intercostal nerves arise from the anterior rami of the thoracic spinal nerves and enter the respective intercostal space between the posterior intercostal membrane and parietal pleura. Intercostal nerve block/ablation can be performed anywhere along the nerve proximally/posteriorly to the target area
- Literature on intercostal nerve ablation for postoperative pain for pediatric surgeries, specifically the Nuss Procedure/Pectus excavatum correction abounds
- At many institutions intercostal nerve cryoablation is standard protocol following the Nuss Procedure as literature has shown significantly decreased opioid consumption as well as decreased hospital length of stay
- Limited literature of intercostal nerve ablation for post-sternotomy pain for cardiovascular surgeries is lacking and thus may be contributing to it's underutilization
- The etiology of the post-operative pain experienced in these two conditions is similar
- Literature on intercostal nerve ablation for post-sternotomy pain is scant. The presentation of our patient serves to add to the existing body of knowledge and provide supplementary evidence for utility of intercostal nerve ablation for post-sternotomy pain

Conclusion

- Intercostal nerve ablation can be an effective tool in the management of post-sternotomy pain refractory to conventional approaches

References

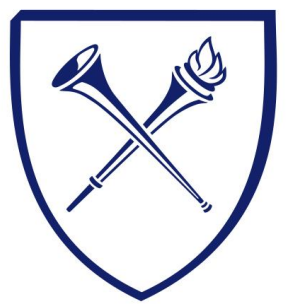
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