

Using an Erector Spinae Plane Block to Treat Chronic Abdominal Pain due to Slipping Rib Syndrome

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Background

- Slipping rib syndrome (SRS) is a painful affliction which can go undiagnosed for a prolonged period of time and is characterized by severe, sharp, intermittent pain in the abdomen, back or lower chest.
- This condition arises from hypermobility of the anterior false ribs, as a result, the loose tip of these ribs can cause impingement of the intercostal nerves, which run inferior to the adjacent ribs.
- Nerve impingement, often induced by movements such as deep respiration, twisting, or bending leads to a severe and sharp pain that can evolve into a long-lasting, chronic dull ache or burning pain.¹
- The condition generally evolves insidiously, often exhibiting unilateral involvement, with the 10th rib being most commonly affected.²
- Treatment starts with measures such as, heat, massage, physical therapy, NSAIDs and acetaminophen. Localized nerve blocks are often used for persistent pain, whereas, rib resection or plating may be required for refractory cases.³
- This case demonstrates possibility of utilizing an erector spinae plane block to address SRS.

Methods

The patient provided consent for the details of this case to be disclosed. As this case report is devoid of identifiable information, it is exempt from IRB review requirements as per UT Southwestern policy

Case Presentation

- 52 year old female presented to the chronic pain clinic referred by a gastroenterologist. She had a history of chronic abdominal pain, which was attributed to the Irritable Bowel Syndrome (IBS).
- In November 2020, she developed a new, right upper quadrant pain, which was described as “burning”, “hot”, “sharp”, and “stabbing” and lacked a discernable trigger or cause.
- Patient rated her pain 3/10 but could intermittently escalate to 8/10 multiple times a week, with rest and NSAIDs brining minimal relief.
- Based on the history and physical exam, which was positive for tenderness to palpation in the RUQ and positive Hook sign, the anterior cutaneous nerve entrapment syndrome was suspected and she was referred for a diagnostic and therapeutic intercostal nerve block.
- Given the specific location of the patient’s pain, the feasibility of performing an erector spinae plane (ESP) block to alleviate this patient’s pain attributed to SRS was contemplated.

The erector spinae plane block can be used as an alternative to the intercostal nerve block for successful treatment of slipping rib syndrome.

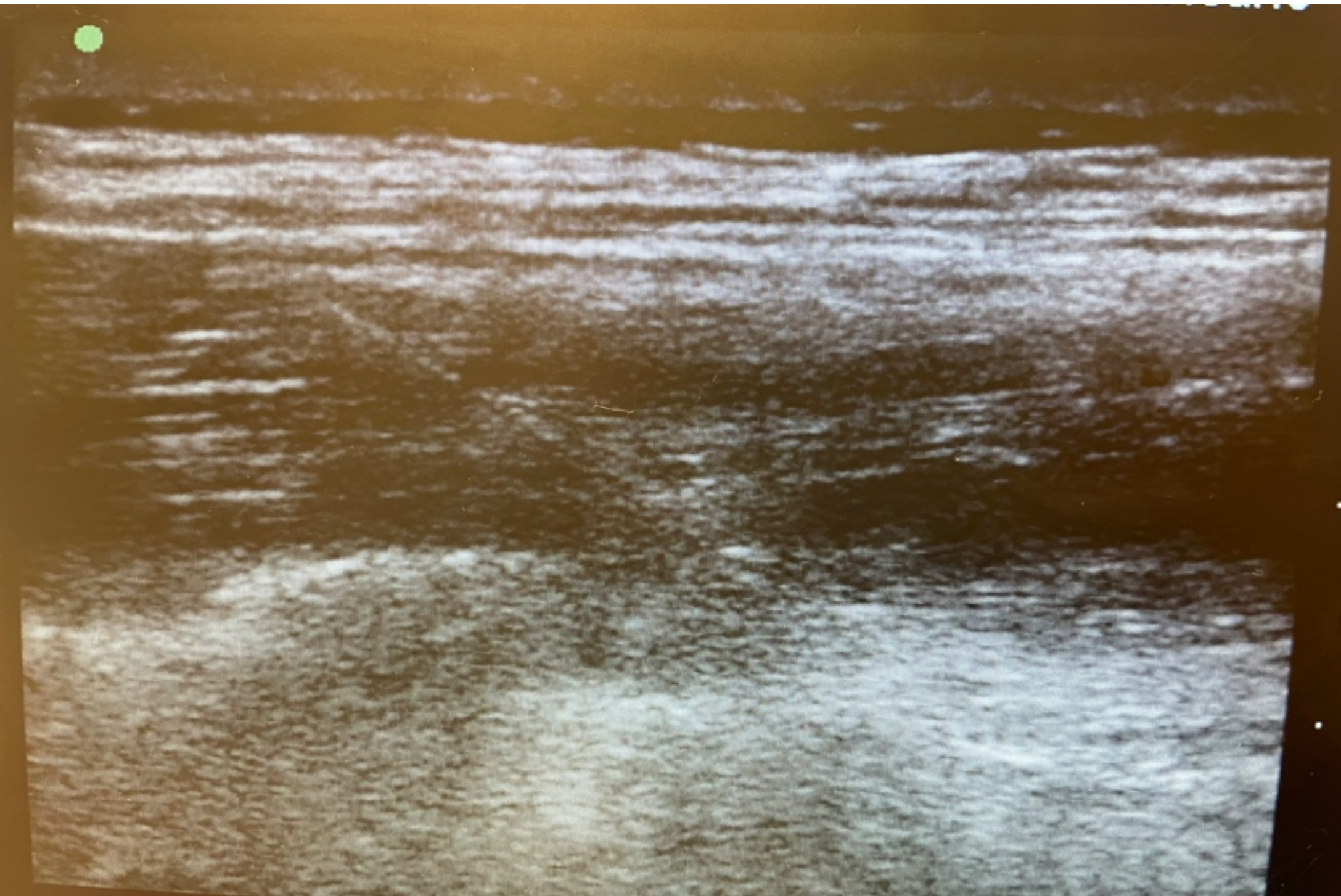


Figure 1: Ultrasound image of the T9 transverse prior to injection.

Case Presentation/Results

- Patient presented to the clinic in July 2021 and after obtaining appropriate consents the procedure was performed.
- Under ultrasound guidance, the T9 transverse process was identified and a nerve block needle was inserted in plane until it was engaged with the ostium.
- After negative aspiration, 10ml of 0.5% ropivacaine with 40mg of triamcinolone was injected with intermittent aspiration.
- Within several minutes after the procedure, patient reported decrement in her pain from 8/10 to 2/10.
- At the follow up visit, two months later, patient reported sustained reduction of her pain by at least 80% since the intervention.
- As of June 2023, patient has not necessitated further clinic visits for her SRS.

Discussion & Conclusion

- The ESPB involves the injection of local anesthetic into the fascial plane deep to the erector spinae muscle while remaining superficial to the vertebral transverse process.
- Relatively substantial volume of local anesthetic ensures adequate dispersion within the fascial plane, typically spanning 3 to 8 vertebral levels along the cranio-caudal axis⁴.
- Evidence from several systematic reviews and meta-analyses demonstrates the capacity of ESP block to produce effective post-operative analgesia.⁵
- The hypothesized mechanism of action of the ESP block points to the dissemination of the local anesthetic to the thoracic paravertebral space and blockade of the ventral rami and spinal nerve roots.⁴
- This case demonstrates effectiveness of the ESPB in a patient with SRS, which could prove to be one of the possible interventions in treating this rare but painful affliction.

References

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