

Intercostal Neuralgia in Thoracolumbar Scoliosis: A Therapeutic Role for Radiofrequency Ablation



PRESENTER:

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Introduction

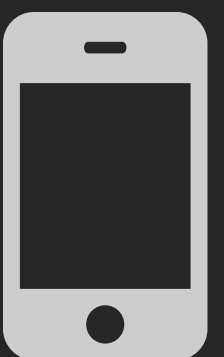
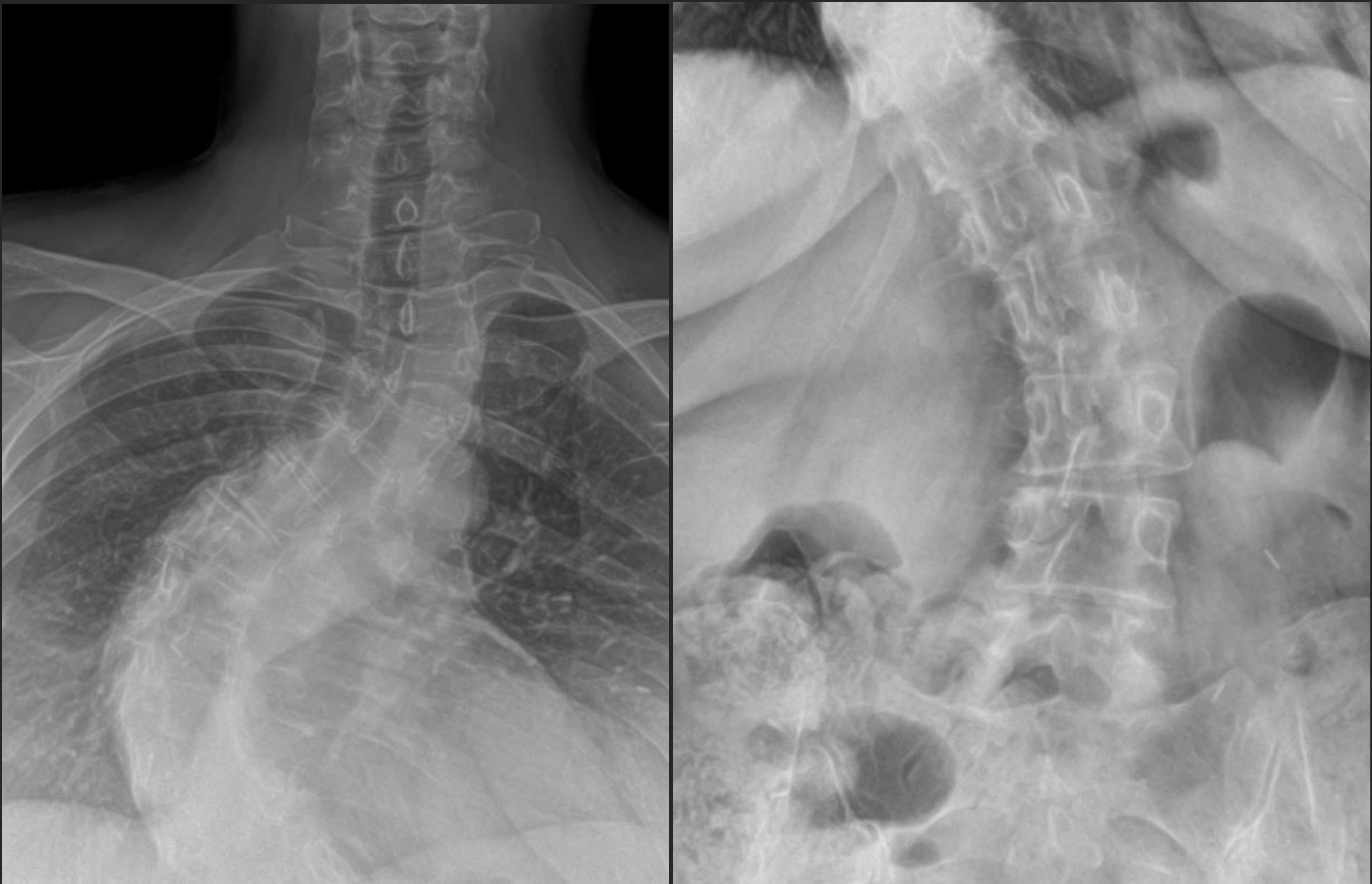
- Intercostal neuralgia due to severe thoracolumbar scoliosis is rare and often resistant to medications and physical therapy.
- Chronic rib compression and nerve irritation from spinal deformity drive persistent neuropathic pain.
- Radiofrequency Ablation (RFA) has documented efficacy in post-thoracotomy and post-herpetic neuralgia, but evidence in scoliosis-related neuralgia is lacking.
- This case highlights the therapeutic potential of intercostal RFA for scoliosis-related pain, demonstrating functional improvement and durable analgesia.

Case Presentation

- 52-year-old woman with severe scoliosis (thoracic 74°, lumbar 39°) presented with refractory neuropathic chest wall pain.
- Constant burning and aching pain radiating across the left T8-T11 dermatomes; pain intensity significantly interfered with activities of daily living.
- Sleep limited to 4 hours with frequent nocturnal awakenings, daytime fatigue and impaired mobility contributed to reduced quality of life,
- Pain persisted despite treatment with pregabalin, tizanidine, and structured physical therapy; patient declines spinal corrective surgery due to recovery concerns.
- Physical exam was significant for restricted spinal range of motion, pain exacerbated by flexion and rotation; no tenderness on palpation over ribs or paraspinal muscles, suggesting neuropathic rather than musculoskeletal origin.
- Radiographs confirmed marked scoliosis with rib compression corresponding to the symptomatic dermatomes.
- Fluoroscopically guided intercostal nerve blocks at T8-T11 provided significant temporary relief, confirming intercostal neuralgia as the pain generator.
- Radiofrequency ablation was performed on left T8-T11 intercostal nerves using a 16-gauge, 10cm RF needle with 10 mm active tip. Thermal lesioning at 80° for 90 seconds per level.
- At 1-month follow-up, patient reported 85% pain reduction, decreased pain score to 2/10, and sustained functional improvement, including uninterrupted sleep and improved daytime activity.



Intercostal nerve ablation can be a valuable treatment for refractory neuralgia in scoliosis



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Discussion

- Severe thoracolumbar scoliosis alters rib alignment and creates chronic mechanical compression of intercostal nerves.
- This leads to peripheral nerve irritation, ectopic discharges, and neuropathic pain that is often refractory to medications or rehabilitation alone.
- Agents such as gabapentinoids and muscle relaxants may reduce central sensitization but fail to address the ongoing mechanical nociceptive input from rib deformity.
- Physical therapy improves mobility but often does not relieve neuropathic pain once intercostal nerve compression is established.
- Diagnostic intercostal blocks are critical to localize the pain generator and predict response to ablative procedures.
- RFA provides longer-lasting analgesia compared to local anesthetic/steroid injections by creating thermal lesions that interrupt nociceptive signaling.
- Robust evidence supports intercostal RFA for post-thoracotomy pain and post-herpetic neuralgia with months to years of benefit in select patients.
- Application in structural spine deformity-related pain is rarely described, making this case novel and clinically significant.
- Minimally invasive outpatient procedure with low morbidity.
- Provides durable relief in patients unwilling or unsuitable for corrective spinal surgery.
- Improves functional capacity and sleep quality, key outcomes often overlooked in chronic pain management.
- Potential complications include pneumothorax, neuritis, infection, and incomplete pain relief.
- Durability of benefit in scoliosis patients is not well established; repeat procedures may be necessary.
- Intercostal RFA should be considered in the multidisciplinary pain management approach for scoliosis patients with intractable neuralgia.
- Larger series or prospective studies are needed to define safety, efficacy, and durability in this population.

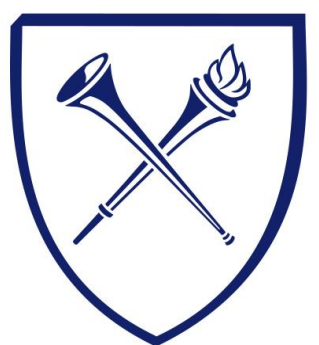
Conclusion

- **Intercostal RFA for intractable intercostal neuralgia due to severe thoracic scoliosis has meaningful therapeutic value**

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