

Chronic Chest Pain Following Pectus Excavatum Repair

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Introduction

We present a case report that illustrates the efficacy of radiofrequency ablations (RFA) for long-term pain relief of intercostal neuralgia caused by intra-thoracic Nuss bar.

Case Report

A 14-year-old, 55kg female presented to pain clinic with progressively worsening chest pain since her laparoscopic Nuss procedure for pectus excavatum (Fig 2). She was relatively pain free for two weeks post-surgery and then started with bilateral costochondral sharp stabbing pain. Over six months period her pain worsened from generalized sharp to burning sensation on the anterior chest wall. She rated pain scores of 9/10 while lifting heavy object to 5/10 at rest. This pain led to significant stress in her everyday life, affecting her sleep and school activities. Prior to her visit she had been on ibuprofen and neurontin for 3 months with minimal relief.

On examination deformity of pectus excavatum appeared corrected with well healed surgical scars. She had tenderness on palpation bilaterally at costochondral margins from T6 to T10. Chest X-ray illustrated Nuss bar in correct position (Fig2). Diagnosis of chronic bilateral T6-T10 intercostal neuralgia was established after diagnostic fluoroscopic guided intercostal nerve blocks with .25% Bupivacaine.

Procedure

Patient was placed in prone position and standard ASA monitors applied. Under fluoroscopic guidance ribs on right side from T6 to T10 level were identified and 2 ml of 1% lidocaine was injected for local infiltration. Following this, a 50mm, 22 gauge, curved RFA needle with a 5mm active tip was walked off the inferior margin and guided to the target point at the intercostal groove (Fig 1). Motor stimulation at 2 Hz was performed with no evidence of distal muscle contraction and sensory testing demonstrated radiating "tingling" into the painful area at each level. Prior to lesioning, 0.5 mL of 2% lidocaine was injected and fluoroscopic image was obtained to confirm the position of needle. The patient received two 90 second lesioning cycles at 80°C at each level on the same side. Post procedure patient reported resolution of chest pain on the side of the ablation. Subsequently in two weeks the patient received RFA on the left side, following which she reported complete resolution of her chest pain.

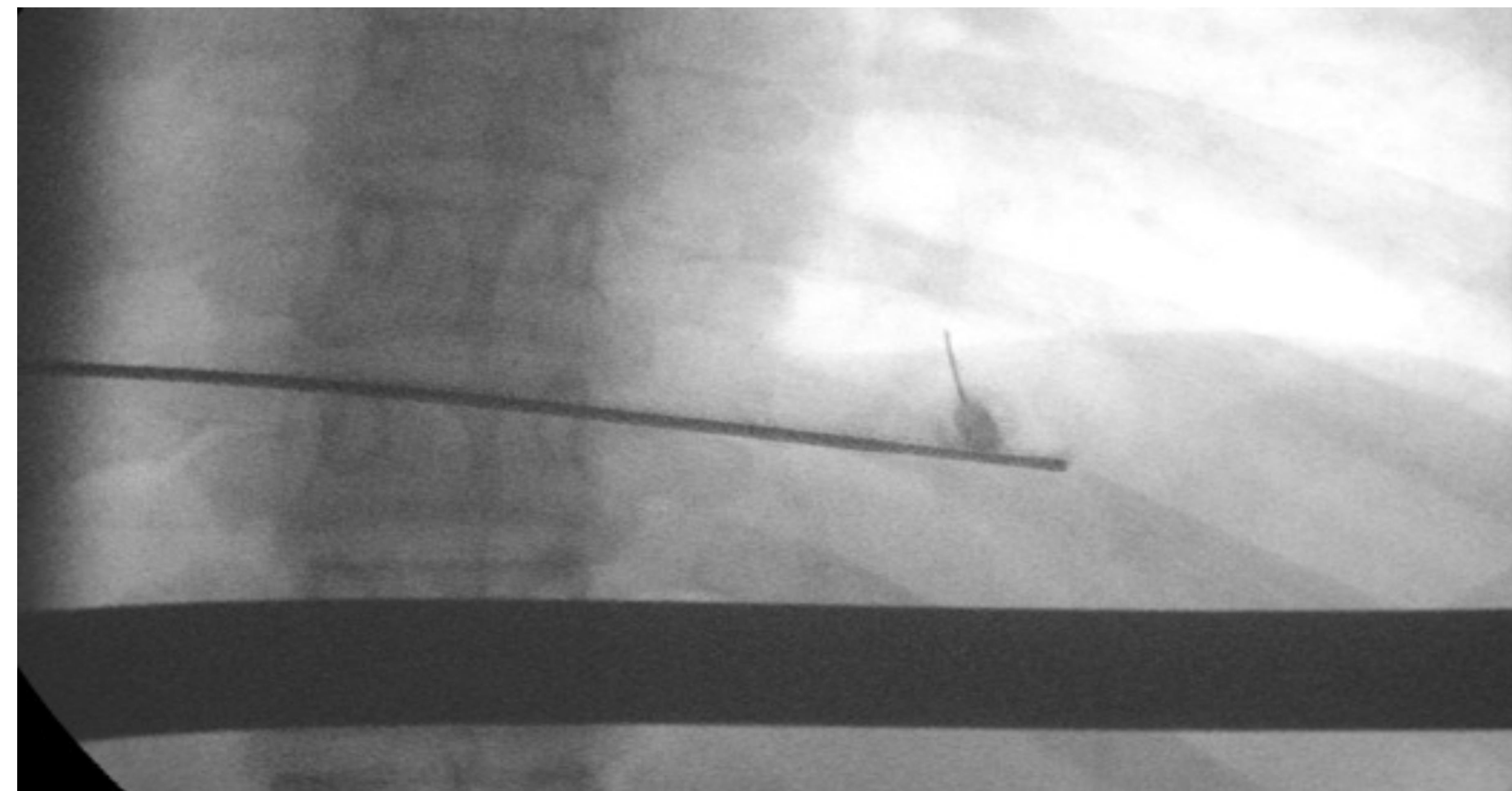


Figure 1: Intercostal Groove Radio Frequency Ablation

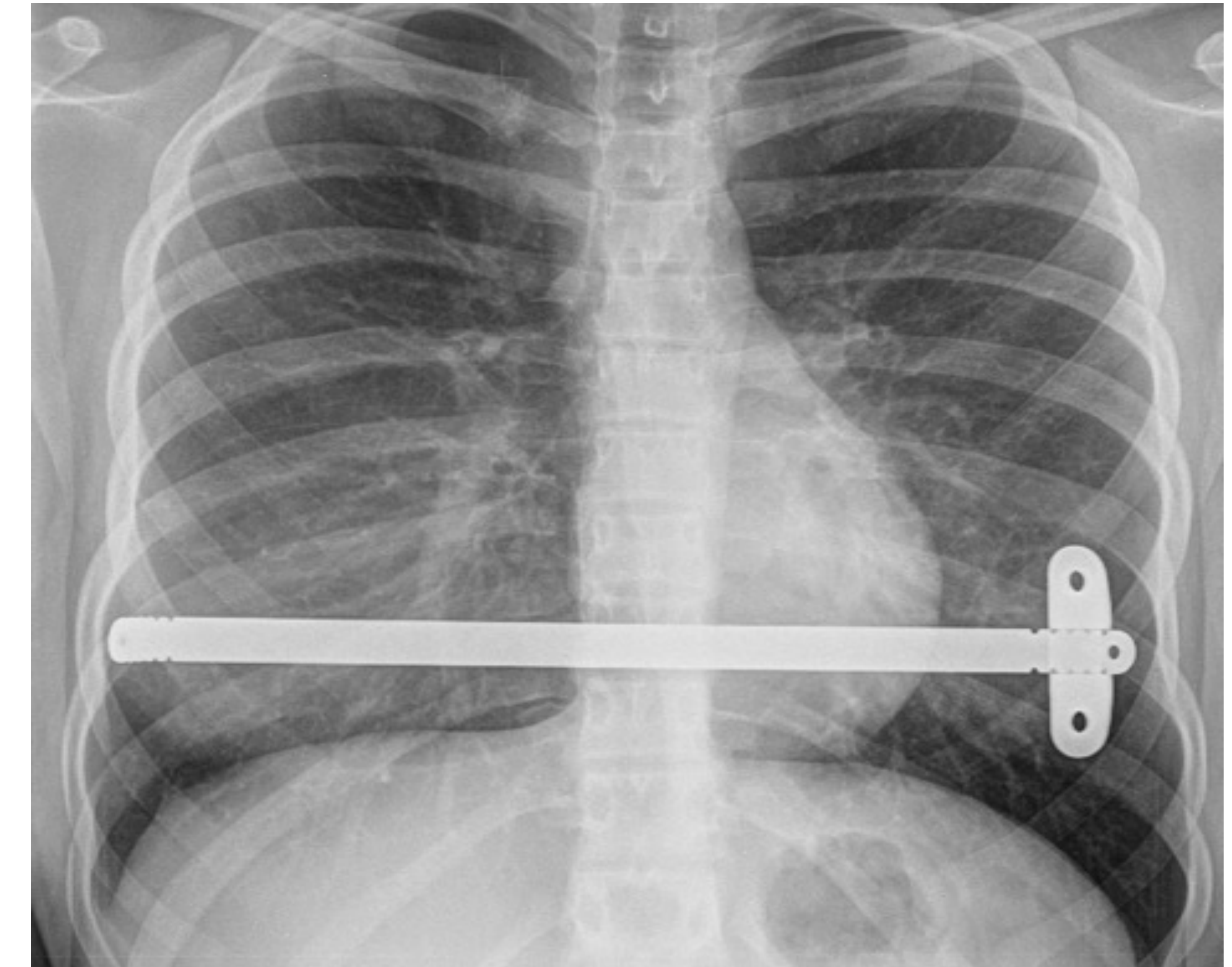


Figure 2: Nuss Bar in Position

Discussion

This case demonstrates that conventional thermal RFA of intercostal nerves is a safe treatment for intercostal neuralgia secondary to Nuss bar placement. This technique could be used to treat other pain conditions secondary to the intercostal nerve, such as thoracotomy, slipping rib syndrome or blunt trauma. Subsequently four Nuss procedures have been performed at our institution where RFA was used intraoperatively by the surgeon for post operative pain control with excellent results.

Reference: Ladenhauf et al. Successful Treatment of Persistent Pain After Pectus Excavatum Repair Using Paravertebral Nerve Radiofrequency Thermoablation. *A&A Case Reports*. 2017;8:18–20