

External Oblique Intercostal Fascial Plane Block for Abdominal Cutaneous Nerve Entrapment Syndrome

Introduction

- Abdominal Cutaneous Nerve Entrapment Syndrome (ACNES) accounts for an estimated 2-3% of cases of chronic abdominal pain and up to 30% of those with idiopathic abdominal wall pain^{1,2}.
- ACNES is defined as a localized, sharp or burning abdominal wall pain that can be precisely pinpointed by the patient.
- ACNES results from the entrapment of the anterior or lateral cutaneous branches of the thoracoabdominal nerves (T7-T12) as they traverse the fibrous abdominal fascia.
- The Carnett's sign remains a key physical exam finding and can distinguish ACNES from visceral pain³.
 - Abdominal tenderness persists or worsens during voluntary tensing of the abdominal.
- The External Oblique Intercostal Fascial Plane (EOIFP) block is a regional anesthetic technique which targets the anterior and lateral branches of the thoracoabdominal nerves⁵.
 - Performed by depositing local anesthetic between the external oblique and intercostal muscles⁵.

Case Report

- A 21-year-old female presented to the Emergency Department with a two-week history of abdominal pain.
- Past Medical history included asthma, celiac disease, hyperlipidemia, and polycystic ovarian syndrome.
- Abdominal pain described as constant, sharp pain in the right upper quadrant (RUQ) without radiation.
 - Pain different from previous celiac flares or corpus luteal cyst-related pain.
 - Exacerbated by activity and raising her arms above her head
 - Limited oral intake due to worsening pain and nausea

Figures

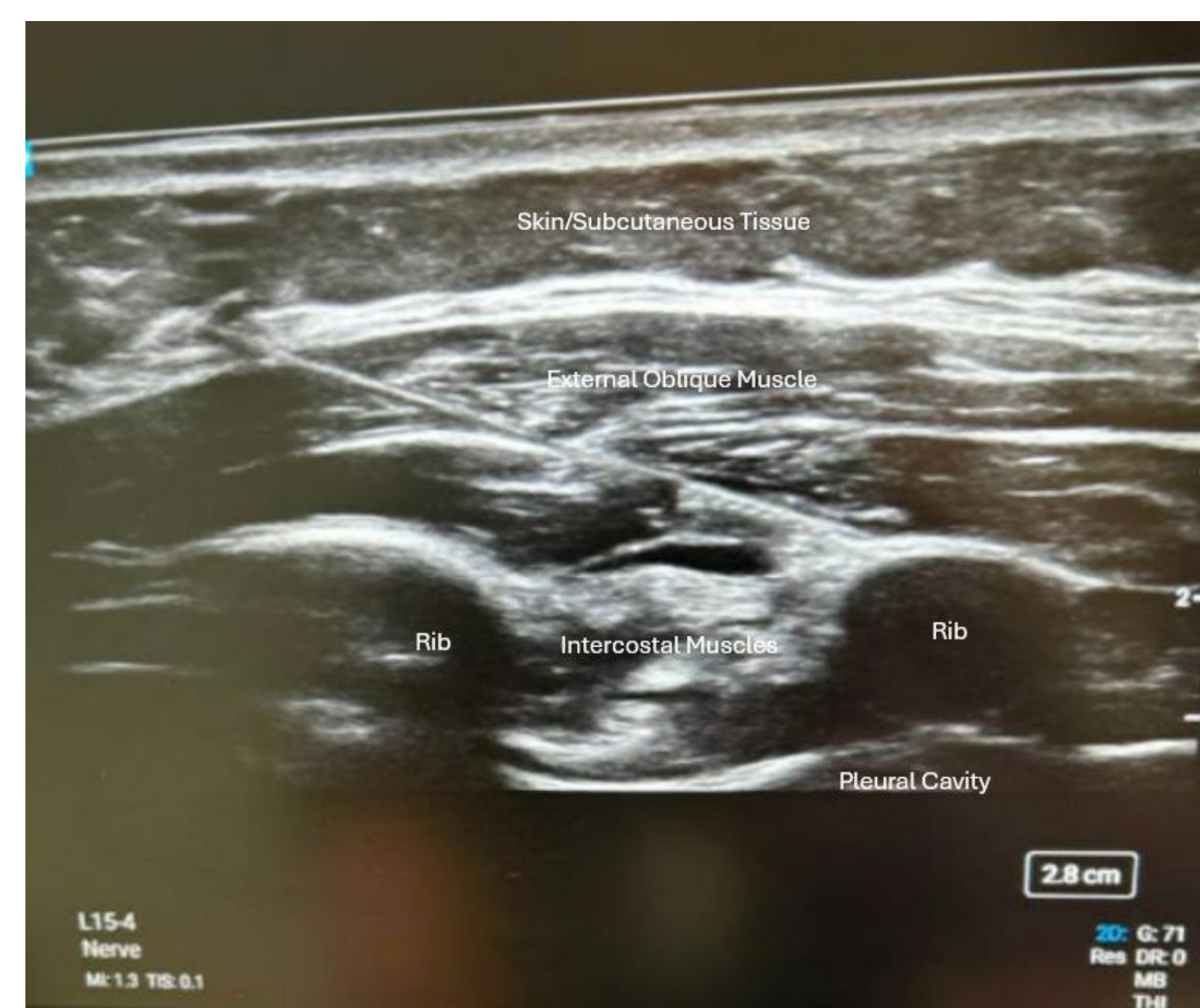


Fig.1 External Oblique Intercostal Fascial Plane (EOIFP) performed on patient

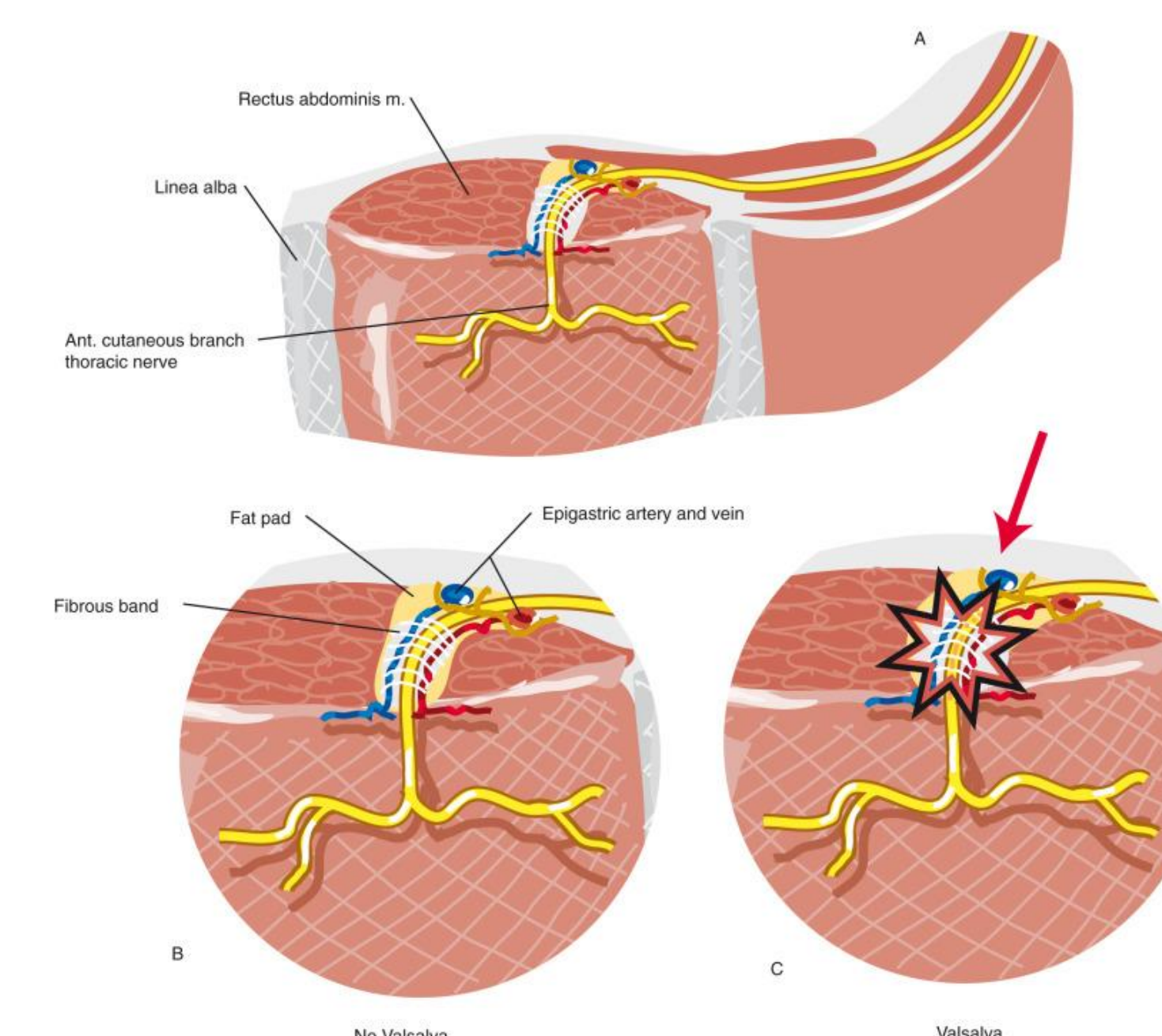


Fig. 2 Contraction of abdominal muscles and increase in intraabdominal pressure resulting in additional compression of cutaneous nerve

Case Report Continued

- Physical exam:
 - Moderate tenderness to palpation in the RUQ without rebound or guarding
 - Positive Carnett's sign (tenderness intensified when lifting head and shoulders off the examination table and contracting abdominal wall muscles)
- Lab values unremarkable
- A right External Oblique Intercostal Fascial Plane (EOIFP) block was performed (Fig. 1)
 - 20ml of 0.25% Bupivacaine with 4mg Dexamethasone
 - Procedure was well tolerated with no immediate complications
- Marked reduction in RUQ pain within one hour of procedure
- Improvement in ambulation and tolerating oral intake
- Patient was discharged home the following day
- At outpatient two-week follow-up and telephone three-month follow up, patient report sustained, complete resolution of RUQ abdominal pain

Discussion

- Conventional treatments for ACNES involve local anesthetic injections, chemical neurolysis, or surgical neurectomy with varying degrees of success¹.
- The EOIFP block specifically targets both the anterior and lateral cutaneous branches of the thoracoabdominal nerves (T7-T11), potentially providing broader coverage than the transversus abdominis plane (TAP) block, which primarily affects the anterior branches
- Broader implementation and prospective studies are needed to define the efficacy of EOIFP block and establish its place the treatment of ACNES

References

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- Fig. 2 Waldman, S. (2011). *Pain management*. Elsevier/Saunders.