

Use of a PEC II block for chest wall reconstruction in a patient with Poland Syndrome

PRESENTER:
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Background: Poland Syndrome is a rare, sporadic, congenital disorder, associated with hypoplasia or agenesis of the pectoralis major muscle. The syndrome often presents unilaterally and right sided. Anesthetics for chest wall reconstruction for patients with Poland Syndrome are scarcely described and omit regional techniques.

Case Details:
A 51-year-old 90 kg male with Poland Syndrome, HTN, OSA, and depression presented for elective right chest wall reconstruction under general anesthesia. After induction, using ultrasound guidance, the right 4th rib was identified with a small overlying fascial band as the target for local injection. A total of 25 mL of 0.25% bupivacaine with 22 mcg of dexmedetomidine were administered into this fascial plane. While this is an off-label use of dexmedetomidine, it is well described in prolonging the duration of regional blocks (Reel and Maani). Intraoperatively, he received 100 mcg of fentanyl with induction and no other opioids or analgesics. In PACU, the highest VAS was 3/10 for which he requested a dose of 5mg oxycodone. The following 2 days, the patient was called and reported excellent pain control, with minimal need for narcotic.





51st Annual Regional Anesthesiology and Acute Pain Medicine Meeting
April 16-18, 2026 | Phoenix, Arizona



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Figure 1: External anatomy of the patient.



Figure 2: Ultrasound image of the patient showing needle, the fourth rib as backstop, and pool of local anesthetic after injection.

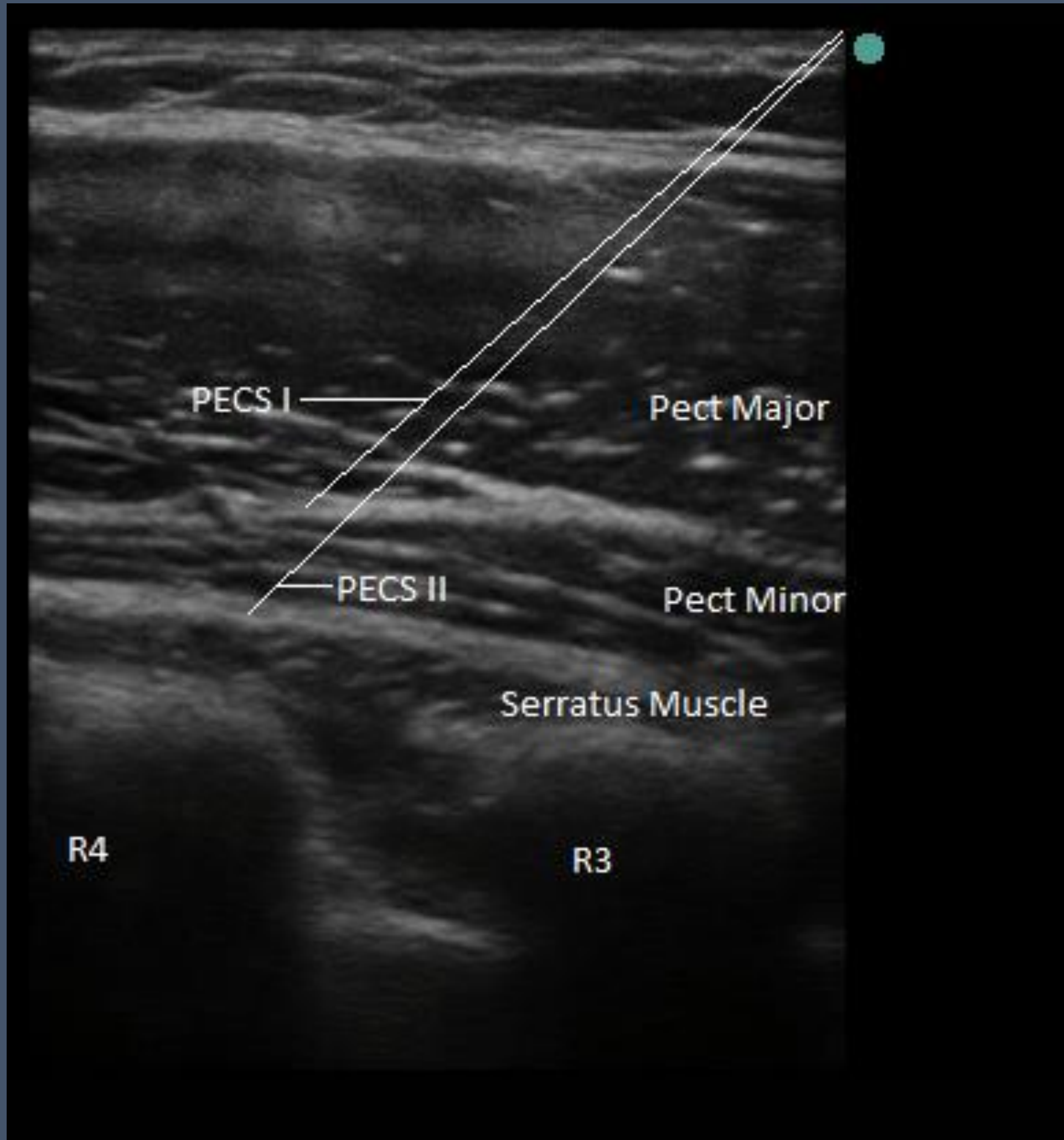


Figure 3: Ultrasound image describing PECS II block in anatomically normal patient (Ortiz).

Discussion:
This case report describes the successful use of the 4th rib as the backstop or target for a PECs II block in the absence of or difficult to find pectoralis minor muscle. It appears that in the absence of normal anatomic and ultrasound landmarks, there may be a role for regional techniques for post operative pain management for patients with Poland Syndrome that are undergoing superficial chest wall reconstruction.

An alternative explanation for adequate analgesia could be explained by aplasia or hypoplasia of the cutaneous and sensory tissue of the right chest wall. Absence of these nerves would imply a lack of utility in performing a Pecs block. A 2002 review on Poland syndrome describes the prevailing theory that interrupted embryonic blood supply causes hypoplasia of the ipsilateral subclavian artery or its branch after the sixth week of gestation (Fokin and Robicsek). Whether this would lead to underdevelopment or absence of neural tissue is unclear.

References:
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Ortiz J. PECS I and PECS II Blocks. ASRA Pain Medicine Update. 2019 Aug.

Reel B, Maani CV. Dexmedetomidine. [Updated 2023 May 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK513303/>