



Continuous Pectointercostal Fascial Plane Block for the Acute Pain Patient with Anterior Chest Wall Trauma

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Introduction

- Thoracic Epidurals are a mainstay of chest wall trauma, but there are many limitations
- Pectointercostal fascial plane blocks (PIFB) have been shown to improve pain management for anterior chest wall trauma¹
- Limited study of continuous PIFB for use outside of cardiac surgery²

Methods

- MCW IRB approval obtained for retrospective review of electronic health records
- 11 patients were reviewed, one excluded for unilateral catheter, four excluded for death shortly after placement
- All catheters used a continuous infusion of 0.2% Ropivacaine of 6 mL per hour, except patient six who had a rate of 8 mL per hour.

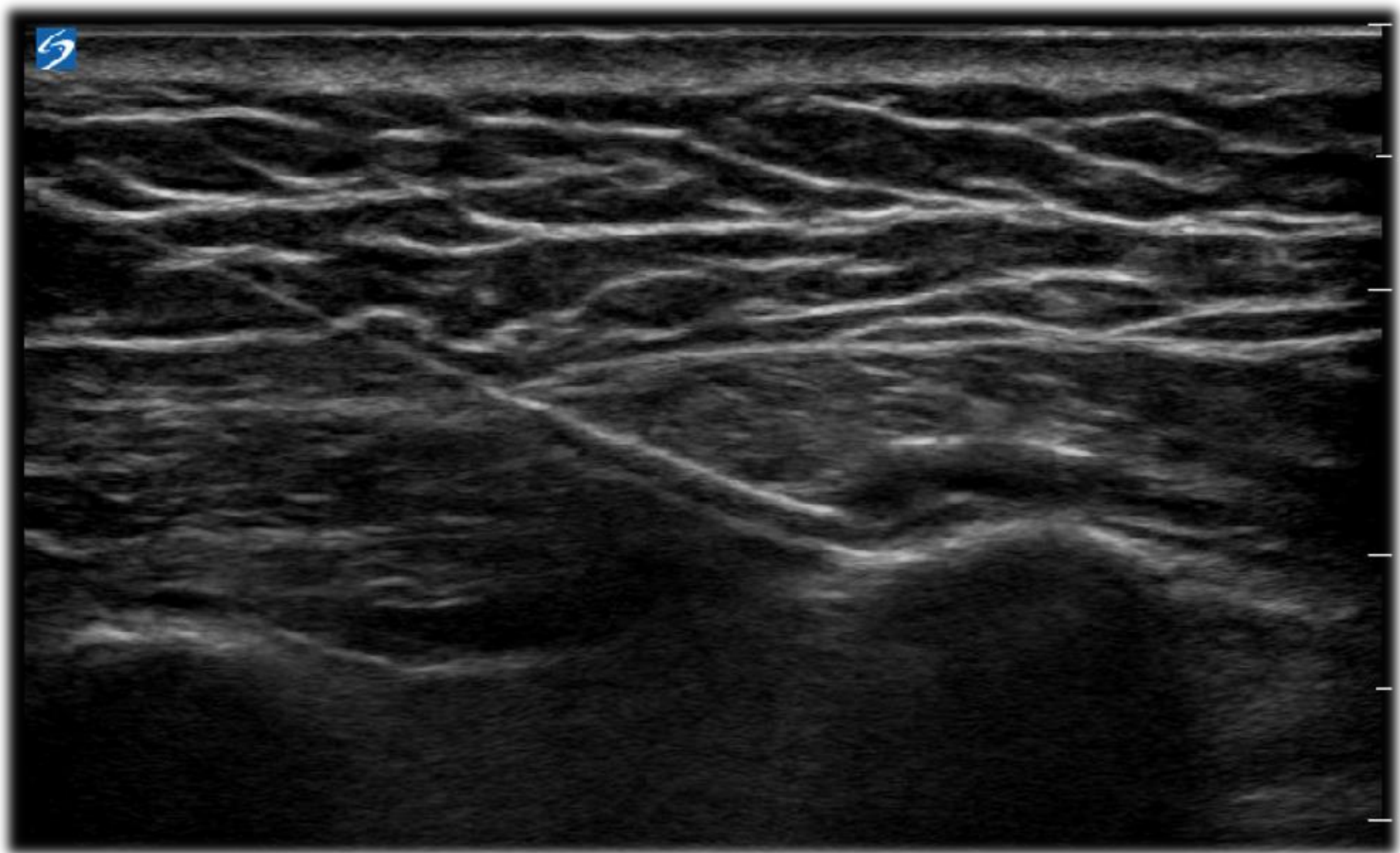


Figure 1: PIFB with injectate spread via Touhy needle

Patient	Age	Sex	Mechanism of Injury	Fractures	Pain Score Change	Vital Capacity Change	MME
1	87	M	Motor Vehicle Accident	Manubrium, Sternal, L 5th Rib	6 → 0	-	2
2	51	M	Motor Vehicle Accident	R 3-6 Rib, L 4-6 Rib, Sternal	10 → 9	19% → 42%	45
3	68	M	Chest Compressions	L 2-8 Rib, R 2-8 Rib	10 → 0	-	5
4	69	F	Motor Vehicle Accident	R 3-7 Rib, L 2-8 Rib, Manubrium, Sternal	9 → 2	33% → 35%	135
5	86	F	Motor Vehicle Accident	R 1-8 Rib, L 2-4 Rib, Sternal	9 → 4	30% → 67%	13
6	79	M	Sternotomy	Sternotomy	10 → 4	-	26

Table 1: Patient demographics, injury patterns, pain scores (0–10), and vital capacity changes before and after continuous PIFB. L = Left, R = Right

Results/Discussion

- Group with diverse Mechanism of Injury
- Universal decrease in pain scores at 24 hours
- Two patients with significant Vital Capacity increases
- Can reduce amount of opioid needed post-injury
- Patient 6 had prior single injection PIFB following cardiac surgery with significant rebound pain. Pain greatly improved following catheter placement.

Conclusion

- Continuous PIFB is ideal for the difficult to position and/or anticoagulated patient with pain resulting from anterior chest wall trauma.

References

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2. Zhang Y, Min J, Chen S. Continuous Pecto-Intercostal Fascial Block Provides Effective Analgesia in Patients Undergoing Open Cardiac Surgery: A Randomized Controlled Trial. Pain Med. 2022 Mar 2;23(3):440-447. doi: 10.1093/pm/pnab291. PMID: 34601602