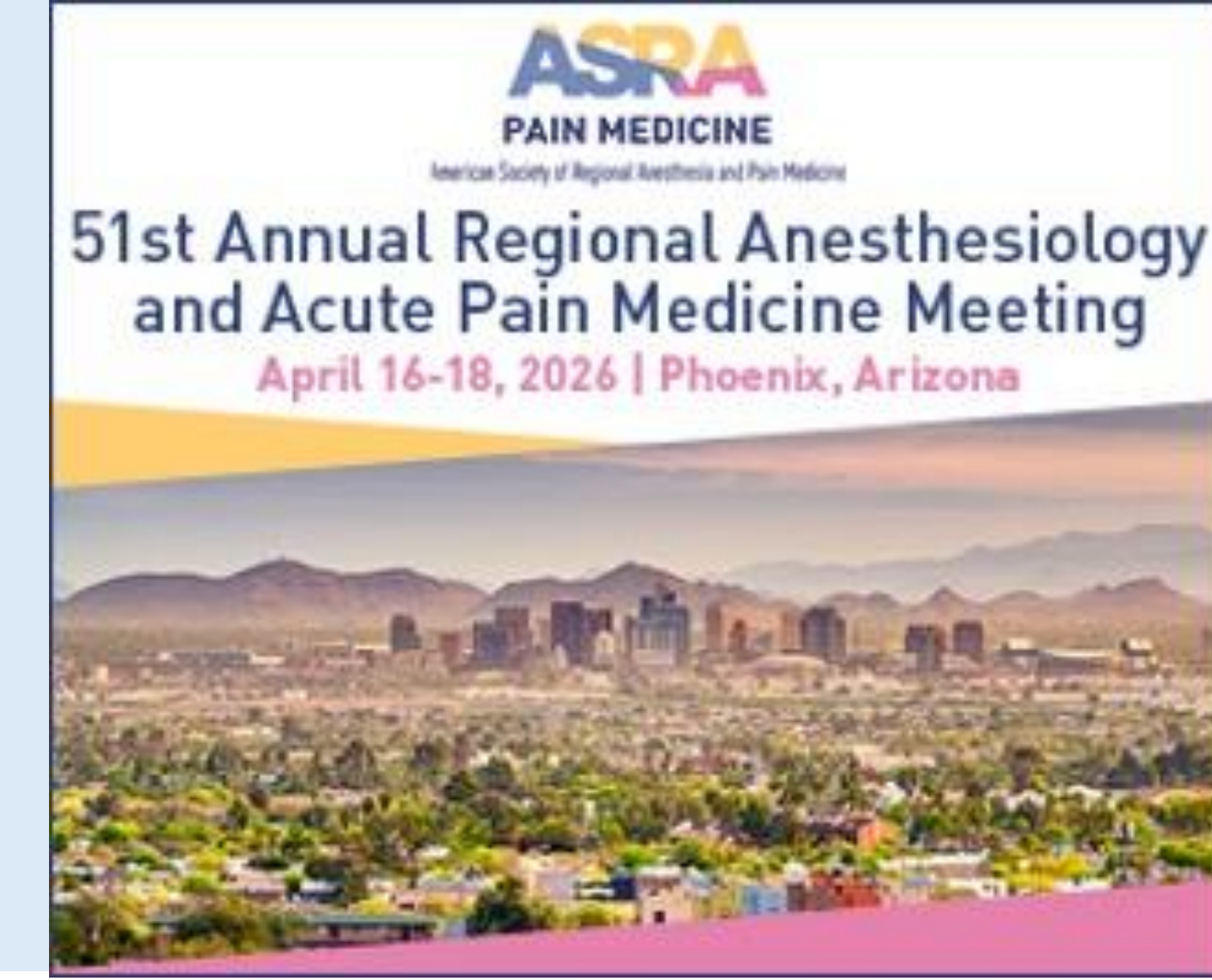


PROXIMAL INTERCOSTAL NERVE BLOCKS (PICBs) FOR MICROWAVE ABLATION (MWA) OF LIVER TUMORS: A CASE REPORT

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INTRODUCTION

- Microwave ablation (MWA) is a non-surgical option for hepatocellular carcinoma (HCC)
- Up to 33% of MWA patients develop moderate–severe pain from post-ablation syndrome ²
- Paravertebral blocks (PVBs) have been used to successfully provide analgesia after MWA, However they are considered deep blocks in a non-compressible space near the neuraxis, posing a risk for patients with coagulopathy or those on anticoagulants/antiplatelet agents ³
- Proximal intercostal nerve block (PICB) is a modification of the intercostal block that combines relatively easy sono-anatomy with the effectiveness of a PVB ⁴
- **Pain following liver MWA is a significant challenge for patients and providers due to its highly variable nature (e.g. subscapular location, ablation time, ablation volume) ³**
- **This report describes successful MWA analgesia using PICBs**

CASE

- 72 year-old female with a history of hepatitis C and cirrhosis, which was complicated by hepatocellular carcinoma
- Underwent MWA of 2 liver nodules

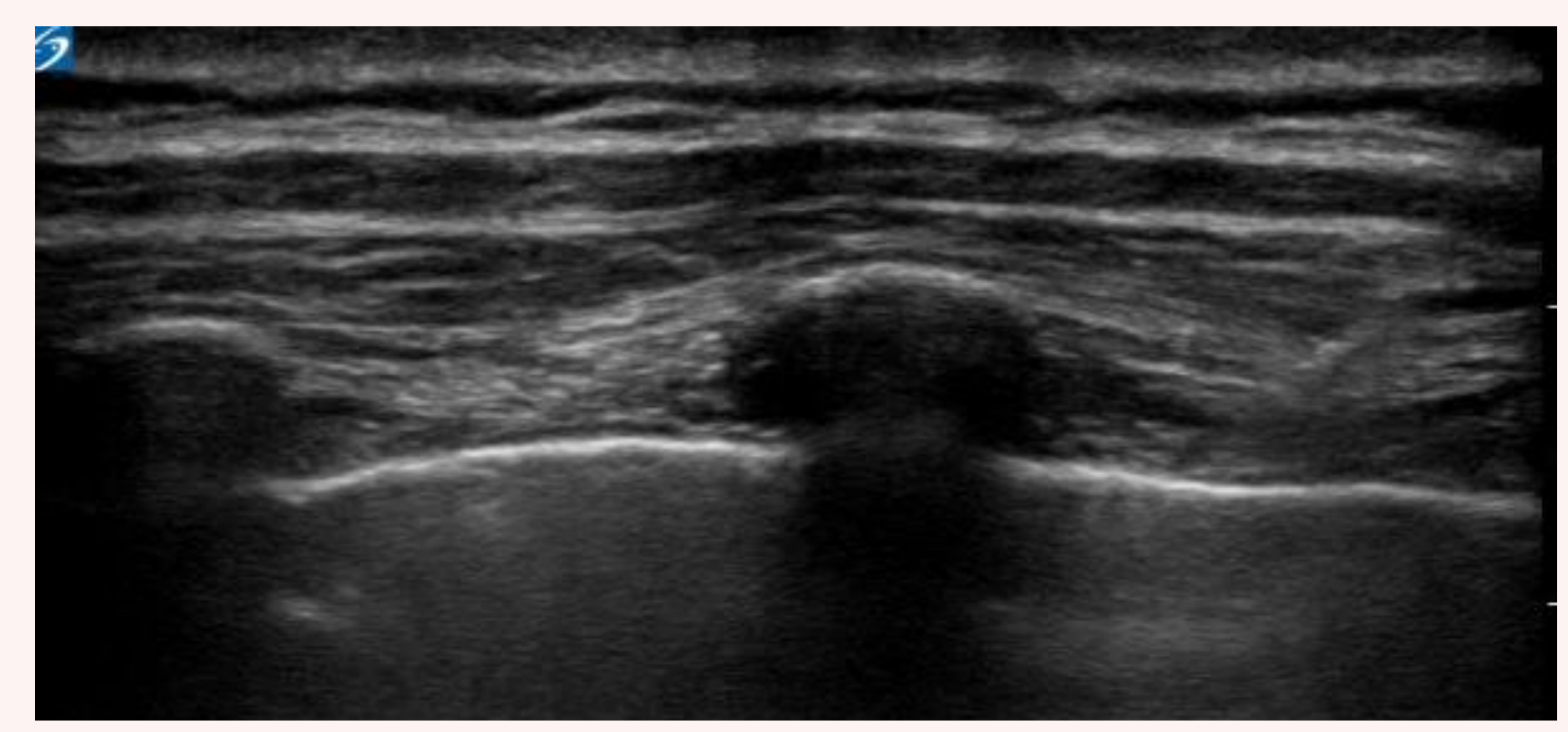


Figure 1. Proximal intercostal space at T7-8.

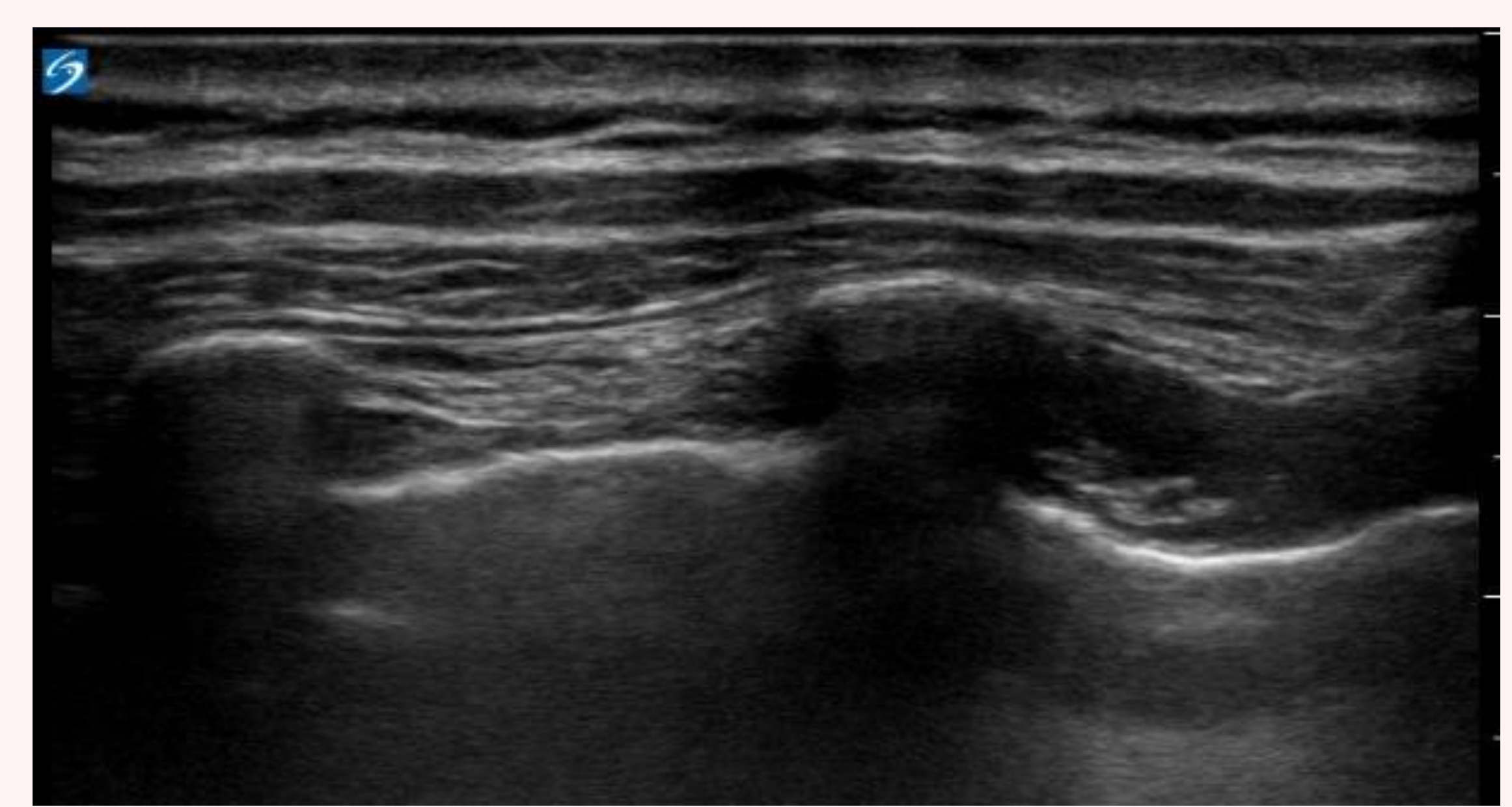


Figure 2. Proximal intercostal space at T7-8 level with neurovascular structures surrounded by local anesthetic and pleural depression.

INTERVENTION

- Single shot PICBs at T7-8 (bilateral) and T4-5 (right side)
- Sedation for block: fentanyl 25 mcg
- 10 cm stimulating Pajunk block needle was advanced into the proximal intercostal space and local anesthetic was incrementally injected with concurrent depression of the pleura.
- Anterior lung sliding was confirmed at the end of the procedure
- A total of 45ml of bupivacaine 0.25% mixed with 112.5mcg of epinephrine and 40mcg of dexmedetomidine was used
- The patient then underwent the MWA under general anesthesia
- The patient's pain was assessed at four time points after surgery and her score remained 0 right after the MWA, POD#1 and POD#2

DISCUSSION

- Highly variable nature of MWAs results in unpredictability of effectiveness of standard multimodal pain management ³
- Historically used PVBs and thoracic epidurals cannot be used in patients with coagulopathy or on anticoagulants
- Large-volume PICBs predictably result in multi-segmental somatic and sympathetic blockade similar to PVBs⁴
- PICBs offer superior block needle visualization due to the shorter skin-to-target skin distance, improved visualization of the pleura, and safer distance from the neuraxis ⁴
- This case demonstrates PICBs as effective analgesic technique for liver MWA

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