SupraHematoma: An Unusual Case of Hematoma Requiring Transverse Cervical Artery Coiling after a Supraclavicular Nerve Block

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INTRODUCTION:

•Supraclavicular brachial plexus block is a well-established regional anesthetic technique for upper extremity surgery.
•Reported complications include infection, bleeding, nerve injury, pneumothorax, Horner syndrome, hemidiaphragmatic paralysis, and local anesthetic systemic toxicity (LAST).
•Ultrasound guidance has reduced, but not eliminated, the risk of vascular injury, bleeding complications, and pneumothorax.
•We present a rare case of delayed supraclavicular hematoma and pseudoaneurysm formation following an uncomplicated ultrasound-guided supraclavicular block.

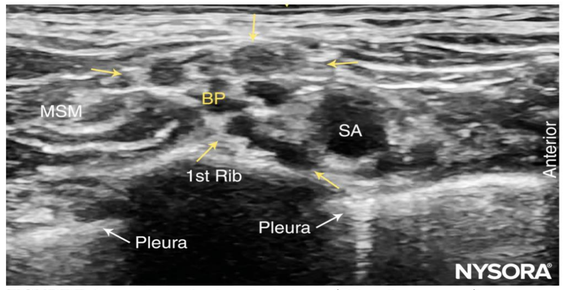
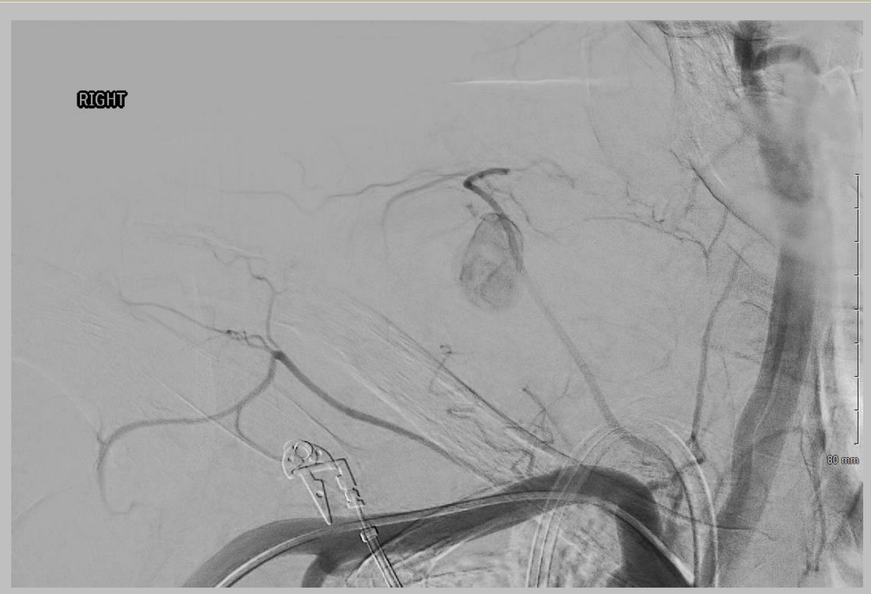


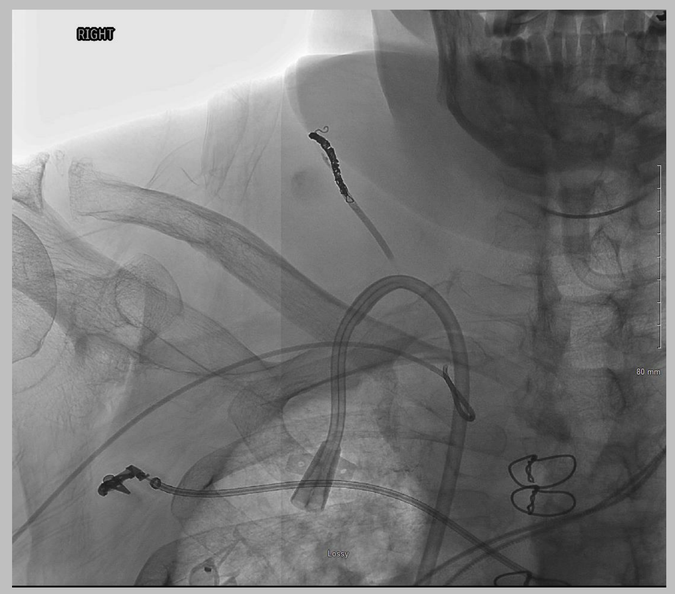
FIGURE 3. Supraclavicular brachial plexus (BP; yellow arrows) seen slightly superficial and posterolateral to the subclavian artery (SA). The brachial plexus is enveloped by a connective tissue sheath. Note the intimate location of the pleura and lung to the brachial plexus and subclavian artery. MSM, middle scalene muscle.

ANESTHETIC MANAGEMENT AND PERIOPERATIVE COURSE:

•Patient: 84-year-old man with ESRD, CAD, CHF, atrial fibrillation, hypertension, and prior mitral valve repair.
•Scheduled for elective right upper extremity arteriovenous access creation.
•Underwent ultrasound-guided right supraclavicular brachial plexus block using a 20-gauge needle and 30 mL of mixed local anesthetic.
•Subclavian artery and brachial plexus trunks were clearly visualized with no aberrant vascular structures identified.
•Block placement was uncomplicated without paresthesia, hemodynamic instability, or immediate complications.
•Approximately 45 minutes later, a supraclavicular hematoma developed, prompting cancellation of surgery.
•Initial point-of-care ultrasound demonstrated hematoma without active extravasation; patient remained asymptomatic and was discharged after observation.



Endovascular angiography showing 2cm pseudoaneurysm arising from the transverse cervical artery, a distal branch of the thyrocervical trunk



Endovascular angiography showing successful coil embolization of the pseudoaneurysm with no remaining filling of the defect

OUTCOME:

•Patient returned several hours later with increasing neck firmness and supraclavicular pain.
•CT angiography suggested vascular injury despite stable neurologic and respiratory examinations.
•Serial examinations and imaging ultimately identified a large pseudoaneurysm arising from a distal branch of the thyrocervical trunk (the transverse cervical artery).
•Endovascular treatment included Onyx embolization, coil embolization, and ultrasound-guided percutaneous thrombin injection.
•The patient tolerated intervention well and was discharged the following day.

DISCUSSION:

•This case demonstrates that delayed vascular injury may occur despite technically uncomplicated ultrasound-guided regional anesthesia.
•Anatomic variation of small branches of the subclavian artery is common and may increase the risk of vascular injury during supraclavicular block placement.
•Studies have demonstrated that some vascular variants are not apparent on standard sonographic views and require additional probe rotation or tilting for visualization.
•This case underscores the importance of a meticulous pre-procedural ultrasound survey of the supraclavicular region, including dynamic probe manipulation to identify aberrant vessels before needle advancement.
•Thorough vascular assessment may help reduce the risk of inadvertent arterial injury and delayed pseudoaneurysm formation.

CONCLUSION:

•Delayed pseudoaneurysm formation is a rare but important complication of ultrasound-guided supraclavicular brachial plexus block.
•Initial absence of active bleeding does not exclude evolving vascular injury.
• Expanding, or persistent, hematoma enlargement or delayed symptom progression warrants repeat vascular imaging and multidisciplinary evaluation.

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