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NEUROLOGIC COMPLICATIONS OF TRANSAXILLARY ACCESS IN TAVR - A CASE OF POSTPROCEDURAL ULNAR AND MEDIAN NERVE INJURY

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Complex Clinical Cases

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Background: Peripheral nerve injuries secondary to endovascular procedures are relatively rare but cause significant functional impairment. With transaortic valve replacement (TAVR), these injuries more commonly occur during axillary access compared to femoral and radial access (due to its proximity to brachial plexus). While hematoma and pseudoaneurysm formation are the more common complications, nerve injury may occur secondary to compression or direct needle puncture.

Case: A 76-year-old male with severe aortic stenosis underwent two failed TAVR attempts due to poor access. Initial attempts at femoral access and transcaval access were aborted due to existing abdominal aortic endograft. Further attempts via carotid access were aborted due to stenosis. An attempt at left axillary access was then performed and TAVR was successful. Postoperatively (day 0), the patient developed left upper extremity (LUE) numbness over the 4th and 5th digits, medial palm, and dorsum of the hand with weakness when holding objects. Our neurological evaluation identified a total ulnar nerve (UN) and partial median nerve (MN) injury.

Decision-making: Transaxillary access for TAVR is a disfavored approach due to the better outcomes when performed with other access sites. After out identification of a postprocedural nerve injury, we ordered a LUE arterial duplex ultrasound (US) and CT angiogram which excluded hematoma or pseudoaneurysm formation. US of the left brachial plexus revealed questionable edematous change at the take-off of the left UN and MN. Patient's symptoms did not improve postoperatively until his discharge from the hospital (day 3) and an outpatient nerve conduction study was scheduled.

Conclusion: We report a rare case of proximal UN and MN injury in a patient who underwent transaxillary TAVR due to the lack of alternative access. Prompt evaluation to rule-out vascular mechanism of injury in this patient was critical as early intervention results reduce further morbidity. With symptoms of motor and sensory brachial plexopathy and concerning imaging findings, the patient was scheduled for outpatient follow-up.