



Western Surgical Association 2020 Annual Meeting

Monday, November 9, 2020
4:00pm – 6:15pm Pacific Time
– Virtual Meeting --

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23. OPEN VS. ENDOVASCULAR TREATMENT OF TRAUMATIC PERIPHERAL ARTERIAL INJURIES: A PROPENSITY MATCHED ANALYSIS

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Background: Arterial injuries are a common sequel of blunt and penetrating trauma. There remains a paucity of data comparing the endovascular vs. open repair of these injuries. The aim of our study is to compare the outcomes of these two interventions.

Methods: The National Readmission Database (2011-2014) was queried for all adult (age ≥ 18 y) patients presenting with peripheral arterial (axillary, brachial, femoral, popliteal) injuries. Patients were stratified into open vs. endovascular repair. Propensity score matching (1:2) was performed controlling for demographics, comorbidities, and injury severity. Outcomes were complications, length of stay, 30-day-readmission, and cost of readmission.

Results: A total of 8,024 patients were identified. A matched cohort of 786 patients was obtained (endovascular: 262, open: 524). Mean age was 48 ± 20 y. Length of stay was shorter for the endovascular group (4[2-8] vs. 5[3-10]d; $p=0.004$). The endovascular group had higher rates of AKI (11% vs. 4%; $p<0.001$), DVT (4% vs 1%, $p=0.009$), sepsis (5% vs 1% $p<0.001$), seroma (6% vs 3%, $p=0.029$), arterial-thrombosis (14% vs 8% $p=0.004$), and extremity-amputation (5% vs 3% $p=0.03$). Endovascular repair had higher rates of 30-day readmission (13% vs 8% $p=0.03$), 30-day-open-reoperation (10% vs 5%, $p<0.001$), and 30-day mortality (3% vs 1%, $p<0.001$). On sub analysis of readmitted patients, cost of each readmission was higher in the endovascular group \$47,000[\$27,202-\$56,763] vs \$21,000[\$11,889-\$43,503].

Conclusion: Endovascular repair for peripheral arterial injuries was associated with higher rates of in-hospital complications, readmissions, and 30-day-mortality. A thorough re-evaluation of endovascular repair indications, risks, and benefits are warranted.