

# Iatrogenic Radial Artery Injuries: Variable Injury Patterns, Treatment Times, and Outcomes

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## Introduction

Iatrogenic injuries to the radial artery occur following common hospital procedures including arterial line insertion and radial cannulation for cardiac catheterization.

These injuries have variable presentations and treatment options, often dictated by the specialty team treating the complication.

The factors dictating different management schemes have not been well characterized. We proposed to identify those factors and study the effect of management decisions on long-term outcomes (e.g. hand function, amputation rates).

## Methods

### Retrospective Chart Review

- 2006-2016, >18 years old
- Radial artery injuries identified by CPT and ICD codes
- Excluded traumatic injuries
- Excluded injuries to ulnar, brachial, and axillary arteries
- Data Collected:
  - Demographics, Comorbidities
  - Mechanism of Injury (e.g. cardiac cath)
  - Diagnostics, Time Delays, Radiography
  - Management decisions, Findings
  - Outcomes, Long-term Hand Function

## Results

n=18, median age 62.5 [49.8, 68.8], 50% Female, 61%-White/33%-Black

<u>Injury Type</u>	<u>Observation</u> n (%)	<u>Therapeutic Anticoagulation</u> n (%)	<u>Mechanical Thrombectomy</u> n (%)	<u>Arterial Resection/Repair</u> n (%)	<u>Amputation</u> n (%)
Radial Injury Thrombosis (n=12)	2 (16.7%)	4 (33.3%)	4 (33.3%)	1 (8.3%)	1 (8.3%)
Radial Artery Pseudoaneurysm (n=6)	1 (16.7%)	0.0%	0.0%	5 (83.3%)	0.0%

- 50/50% post-cardiac catheterization vs arterial line insertion
- 14 of 18 presented **acutely**
- Acute thrombosis (n=11):
  - **7** (64%) with hand ischemia:
    - **6/7** →urgent surgery
    - **1/7**→ Amputation (late pres.)
- Long-term hand dysfunction
  - Pseudoanuerysms: None
  - Thromboses: Neuropathy (n=1)

## Conclusion

Though rare, radial artery injuries may be associated with significant morbidity if perfusion is compromised

Treatment is determined by injury type and presence of hand ischemia