

**#9 ARTERIAL INJURY ASSOCIATED WITH ELECTIVE ORTHOPEDIC JOINT RECONSTRUCTION**

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**Objective:** To review the diagnosis and management of arterial injury associated with elective orthopedic joint procedures since this adverse event is uncommon but has the potential for permanent limb injury and litigation.

**Methods:** A retrospective review (1997-2002) identified 21 patients who sustained an arterial injury during an elective orthopedic (knee joint replacement-13, hip surgery-4, ankle reconstruction-2, elbow repair-1, 1 clavicular ORIF) procedure for degenerative osteoarthritis (n=21). Clinical records were reviewed for presenting signs, type of injury, management, and outcome (permanent injury, limb loss, litigation).

**Results:** The incidence of artery injury associated with elective joint replacement/repair was 0.9% (21/2250), highest for knee joint replacement (1.3%). Fourteen patients (67%) had a prior orthopedic procedure at the arterial injury site. Presenting signs included acute ischemia with loss of limb Doppler arterial flow/pulses (13 patients, 52%), intraoperative arterial bleeding (4 patients, 24%), non-healing wound (3 patients, 14%), or limb edema (2 patients, 10%); the diagnosis was delayed (>24 hr) in 4 patients. Arterial thrombosis was the most common abnormality identified (73% of injuries) followed by laceration/avulsion (20%) and pseudoaneurysm development (13%), and involved the iliac-3, common femoral-2, deep femoral-1, superficial femoral-4, popliteal-12, tibial-5, or brachial-1 arteries. Concomitant popliteal venous injury was present in one patient. Arterial repair consisted of a vein bypass (n=15, 71%), primary repair (n=3, 24%), thrombectomy (N=2, 10%). One patient (5%) underwent primary above-knee amputation. Pre-existing atherosclerosis was identified in 9 injured arterial segments. Outcomes included death (n=1, septic shock), limb loss (n=3, 15%), and fasciotomies (14.3%).

**Conclusions:** Arterial injury associated with elective orthopedic joint surgery is more common during redo-procedures and in patients with pre-existing atherosclerosis. Despite arterial repair/bypass, limb morbidity is common and related to pre-existing occlusive disease or extent of arterial thrombosis.