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Magnetic resonance angiography for the evaluation of vascular injury in knee dislocations.

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#### Abstract

Knee dislocations can cause extensive soft tissue disruption including vascular insufficiency to the leg secondary to popliteal artery injury. Physical exam may miss vascular injury and possible late occlusion, but there is controversy regarding use of angiography to evaluate patients after dislocation. Magnetic resonance angiography (MRA) has been shown to be equally effective as angiography in evaluating vascular injury and to have fewer complications than angiography. Patients with knee dislocations routinely receive magnetic resonance imaging (MRI) to assess ligament integrity. The purpose of our study was to determine whether it may be prudent and convenient to obtain an MR angiogram at the same time as an MRI scan, with less morbidity and discomfort than with conventional angiography. Sixteen patients with frank and occult knee dislocations were prospectively evaluated over 2 years. After reduction, a physical exam was performed including ankle brachial index (ABI). With ABI < 0.90, emergent vascular surgery consult and angiogram was performed. Patients with ABI > 0.90 were observed for 3 days with serial physical exams, and MRI/MRA was performed as soon as possible. Sixteen dislocations were identified. Two of 16 (12.5%) had abnormal ABIs and received an angiogram and subsequent revascularization. Two had normal exams, but refused MRA. Twelve had normal exams and received MRI/MRA showing a normal popliteal artery with no adverse events. ABI had 100% sensitivity for vascular injury; however, there remains concern among treating surgeons about missing an occult injury such as an intimal tear. Because MRA has been shown to be as accurate and useful as angiography, we may be able to evaluate ligamentous and vascular injury simultaneously with less morbidity than that with conventional angiography.