

An Alarming Arcuate Sign, A Potential Savior

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INTRODUCTION:

Arcuate sign is an avulsion of head of fibula following a trauma commonly associated with posterolateral corner knee injury, resulting in instability. Unrecognized spontaneous reduced knee dislocation may be suspected in the present of arcuate sign which might alarmed sinister complication like vascular injury.

REPORT:

A 40-year-old gentleman involved in alleged moto-vehicle accident sustained an open fracture right femur. No active bleeding from punctured wound at the anterolateral mid-thigh and knee posterior sagging were noted with dorsalis pedis artery (DPA) and posterior tibial artery (PTA) pulses were initially palpable. Right knee radiograph showed avulsion fracture right head of fibula with no apparent dislocation. Few hours later, reassessment right lower limb CRT <2s but DPA and PTA pulse were not palpable and popliteal pulse was feeble. Femoral pulse strong, no sign compartment syndrome. Arterial doppler revealed monophasic signals for DPA, PTA and popliteal. Urgent computed tomographic angiography (CTA) right lower limb revealed segmental non opacified right popliteal artery suggestive of thrombosed popliteal artery injury. Cross right knee external fixator was applied to stabilize the knee and started with anti-thrombolytic agent. He was monitored for 2 weeks. Subsequently external fixator removed, and plating of femur performed. Knee brace was applied. DPA and PTA were palpable and Biphasic doppler signals recorded. Patient discharged with outpatient follow up and ligamentous reconstruction were plan later.

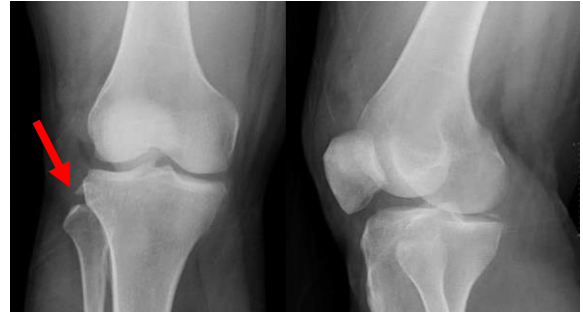


Figure 1: Arcuate sign, Avulsion fracture head of fibula sign of posterolateral corner knee injury



Figure 2: CTA revealed thrombosis of Popliteal artery.

CONCLUSION:

Recognition of arcuate sign is important as it might trigger an alarming suspicion of vascular injury secondary to unrecognized spontaneous knee dislocation. Circulation monitoring with this condition might save the limb and prevent medicolegal implication.

REFERENCES:

1. Juhng SK, Lee JK, Choi SS, Yoon KH, Roh BS. Evaluation of the “Arcuate” Sign of Posterolateral Knee Instability. *AJR Am J Roentgenol.* 2002Mar;178(3):583–588.