Avulsion Fracture of the Fibular Head (Arcuate Sign): Finding Predictive of Injuries to the Posterolateral Ligaments and Posterior Cruciate Ligament.

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摘要

Abstract

OBJECTIVE. The purpose of this study was to describe the significance of an avulsion fracture of the head of the fibula ("arcuate" sign) and its association with injuries of the knee on MR imaging.

MATERIALS AND METHODS. We conducted a retrospective search of 2318 patients who underwent conventional radiography and MR imaging after an episode of knee trauma. Patients were included in this study if they had an avulsion fracture of the head of the fibula revealed on conventional radiography and underwent arthroscopy. Thirteen patients, all of whom were men, satisfied the inclusion criteria. Ten patients underwent further explorative surgery. The clinical, radiographic, MR imaging, and surgical findings were then reviewed.

RESULTS. The avulsion fracture of the styloid process of the fibular head was apparently related to injuries of the arcuate complex in all 13 patients. Radiographically, the bony fragment was horizontally oriented and similar in size in most patients, ranging from 8 to 10 mm in length and from 2 to 5 mm in width. On MR imaging, the fibular avulsion was identified in 11 of the 13 patients. The other two patients had marrow edema in the fibular styloid process, although the avulsion fracture was not evident. All patients had injuries of the posterior cruciate ligament (six tibial avulsions, seven midsubstance tears). No patient had a tear of the anterior cruciate ligament. Disruption of the lateral collateral ligament was evident in seven patients, and one patient had a tear of the popliteal tendon. During surgery, six patients had disruption of the arcuate complex, but this disruption could not be

identified on the MR images.

CONCLUSION. An avulsion fracture of the fibular head generally involves the styloid process and causes injury of some of the major stabilizers in the posterolateral corner. Avulsion fractures are strongly associated with disruption of the posterior cruciate ligament