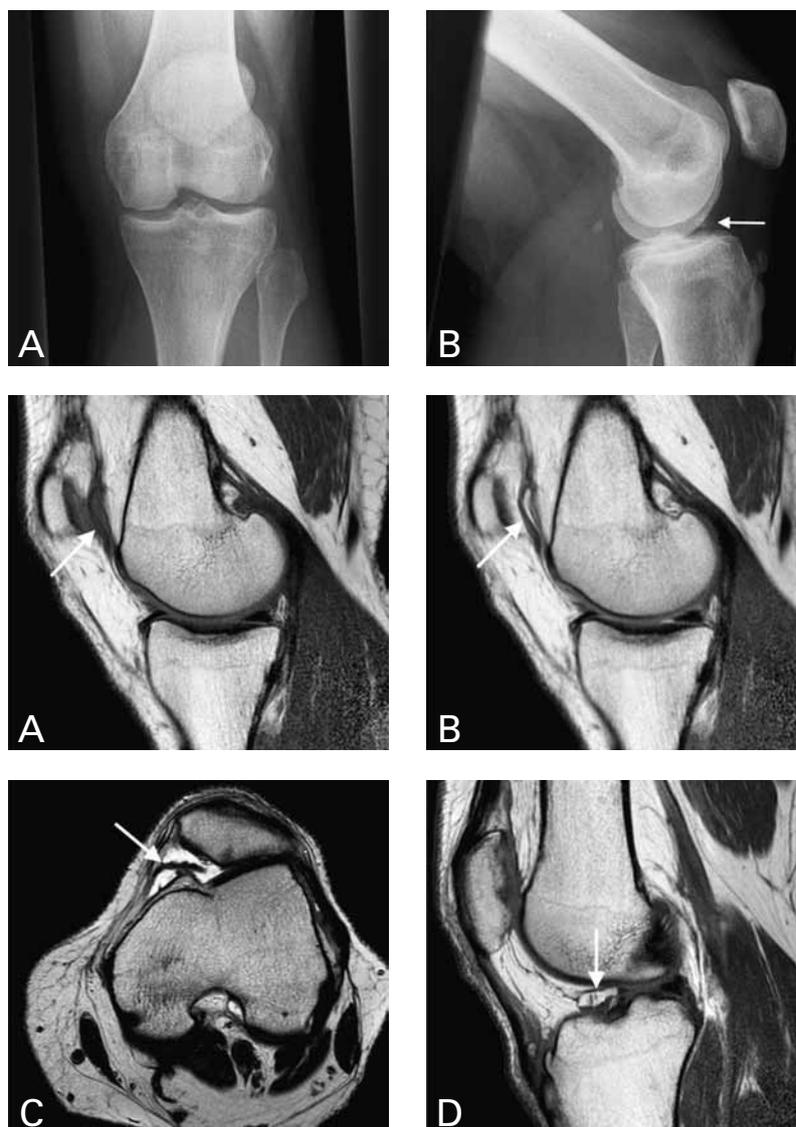


MEDIAL PLICA SYNDROME OF LEFT KNEE

F.J. Wessels¹, B.C. van der Wal², M. Nix¹

Key-word: Knee, anatomy

Background: A 36-year-old woman presented to the orthopedic department with painful impairment of the left knee. The pain to the medial side of the knee and locking of the knee joint had started after a distortion of the knee during a game of soccer 2 weeks earlier. On clinical examination, the left knee showed a flexion/extension range of 110/0°. On palpation and rotation of the knee joint, the patient experienced pain in the medial compartment of the knee. The anterior drawer test was slightly positive (+1); examinations of the other ligaments of the knee were negative.



	1A	1B
Fig.	2A	2B
	2C	2D

Work-up

Conventional radiograph of the left knee (Fig. 1) shows on anterior-posterior (AP) view (A) and lateral view (B) a loose, well defined, bone fragment within the knee joint is observed (arrow). Furthermore, a calcification is seen in the distal part of the patellar tendon.

MRI of the left knee (Fig. 2) demonstrates on sagittal T1-weighted image (A), sagittal proton-density-weighted image (B), and axial T2-weighted image (C) a linear structure of low signal intensity on the medial side of the femoro- patellar joint (arrow). There are no signs of ligamentar injury. The structure is surrounded by fluid as shown on the T2-weighted image (C), indicating synovial irritation. On sagittal T1-weighted image (D), a calcification/loose bone fragment just cranial to the tibial plateau is seen on this image.

Radiological diagnosis

The finding of a linear structure at the expected location (see comment below), with low signal intensity on all sequences, corresponds with the presence of a medial plica. MRI showing thickening of the medial plica and irritation of the adjacent synovium, is diagnostic for the *medial plica syndrome*. The loose bone fragment, seen on both the conventional and MRI examinations, is an incidental finding. It corresponds to an old fracture of the intercondylar eminence. Patient was referred for physical therapy and her complaints resolved after a short period of treatment.

Discussion

The medial plica, as well as other plicas of the knee, is a normal structure. It represents a remnant

of a synovial membrane of the embryologic development of the knee. The medial plica originates on the medial side of the knee joint adjacent to the medial part of the patella. It courses in an oblique way, from the superior/mid-patellar medial capsule towards the synovium, covering the medial aspect of the fat pad. Both cadaver studies and studies of arthroscopic findings have shown a presence in 18-30% of normal knees. In the case of a medial plica syndrome, the plica causes painful impairment of knee function, with complaints consisting of medial knee pain, crepitus and/or pseudo-locking. Signs of adjacent synovitis or chondromalacia of the medial patellar facet are also highly suggestive for the medial plica syndrome. The medial plica may become symptomatic after injury, and may be associated as well with loose bodies or meniscal pathology. MRI can readily determine the presence of a medial plica. An abnormal plica can be seen as a thickened band of low signal intensity on all sequences. The finding of a thickened medial plica, together with the correct clinical setting, leads to the non-invasive diagnosis of the medial plica syndrome. Initially, conservative treatment by means of physical therapy is preferred. When painful episodes recur, arthroscopic resection may be indicated.

Bibliography

1. Garcia-Valtuille R., Abascal F., Cerezal L., et al.: Anatomy and MR imaging appearances of synovial plicae of the knee. *Radiographics*, 2002, 22: 775-784.
2. Monabang C.Z., De Maeseneer M., Shahabpour M., et al. MR imaging findings in patients with a surgically significant mediopatellar plica. *JBR-BTR*, 2007, 90: 384-387.