



MARS MRI of the Knee

- Dr. Khushboo Pilania



Fig. 1A

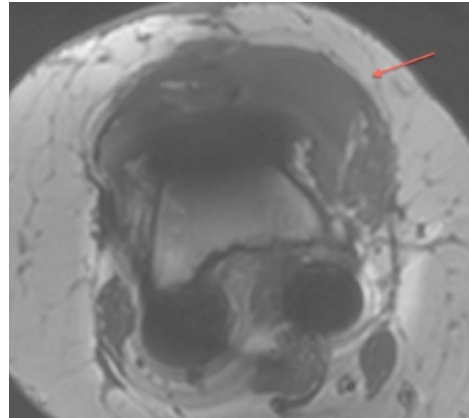


Fig. 1B

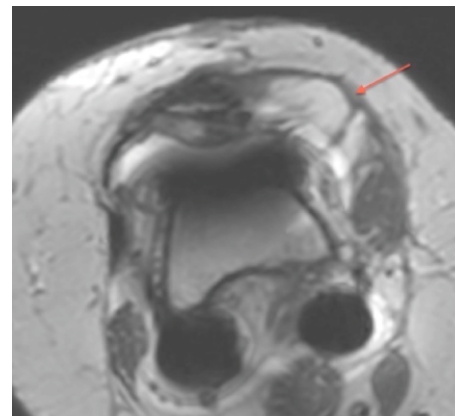


Fig. 1D

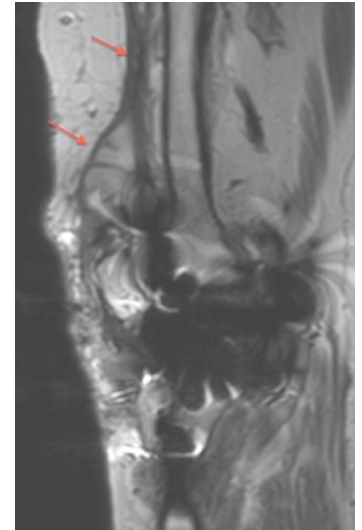


Fig. 1C

Fig. 1 (A-D): Parapatellar vastus medialis collection. A 65-year old lady post TKR presented with pain and swelling along the medial aspect of the knee. The sagittal (A) and axial (B) T1W images show the periprosthetic bone and soft tissues well. The collection is well seen on the sagittal (A) and axial (B) T2W images.

With the ever-increasing number of total knee replacements worldwide, the demand for prompt and early diagnosis of the causes of post arthroplasty complications has increased as well.

The various complications associated with total knee replacement (TKR), include bursitis, tendinitis, stress fracture, periprosthetic fracture, infection, instability, malalignment, aseptic loosening, prosthesis fracture, osteolysis, arthrofibrosis, soft-tissue impingement, and extensor mechanism problems.

Radiographs and nuclear imaging, earlier

the mainstays for evaluation of the post arthroplasty knee, have vast limitations especially with respect to the evaluation of soft tissue details, which account for symptoms in a significant number of patients.

MRI with special modifications in the sequences i.e. metal artifact reduction sequences (MARS), has proved to be of immense help for the detailed and early evaluation of these soft tissue complications and is advisable in all patients where the cause of pain or disability cannot be determined on plain radiographs.

Dr. Khushboo Pilania is a consultant musculoskeletal radiologist.



At a glance:

- Total knee replacement (TKR) is commonplace
- A small percentage of patients will have complications
- If radiographs are negative or equivocal, MARS MRI helps arrive at a possible diagnosis

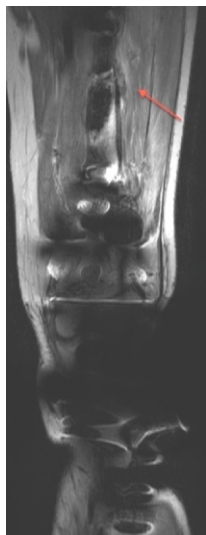


Fig. 2: Stress fracture. Coronal T2W image shows subtle cortical thickening and irregularity with edema involving the lateral cortex of the femur at the junction of the middle and lower one third with edema of the adjacent vastus lateralis.

Fig. 2

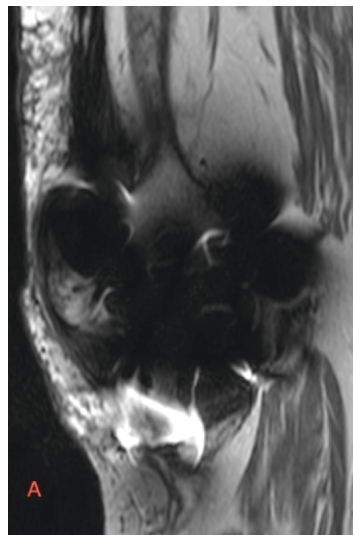


Fig. 3A



Fig. 3B

Fig. 3(A-B): Periprosthetic patellar fracture. Sagittal T1W (A) and T2W images show a periprosthetic patellar fracture. The patella is also low lying with thickening and altered signal intensity of the patellar tendon suggestive of patellar tendon fibrosis..

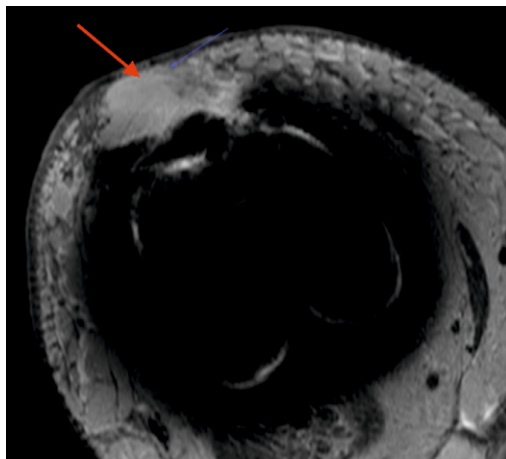


Fig. 4A

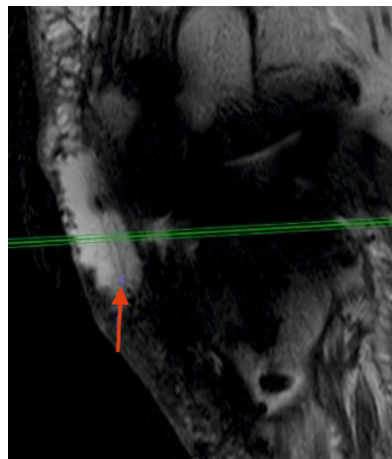


Fig. 4B

Fig. 4 (A-B): Pre-patellar collection. A 77 years old lady with TKR came with anterior knee pain. Axial (A) and sagittal (B) T2W images show a focal collection in the prepatellar region.

These images have been obtained on a new state-of-the art 3T scanner, the best currently in the country, located in our Lower Parel facility.

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