

CHONDROMALACIA PATELLA- MRI GRADING

Introduction: Chondromalacia patellae is characterized by patello-femoral (retropatellar) joint pain, accentuated during knee flexion, and associated crepitus. Softening of the articular cartilage with associated degenerative changes is responsible for the spectrum of changes seen. Chondromalacia most often affects adolescents and young adults and may be primary and idiopathic or occur subsequent trauma.

MRI Grading:

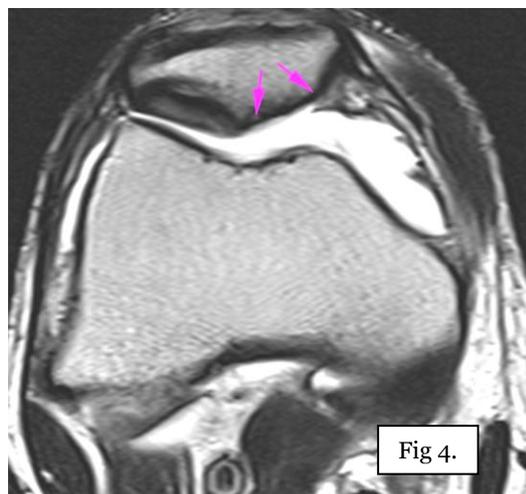
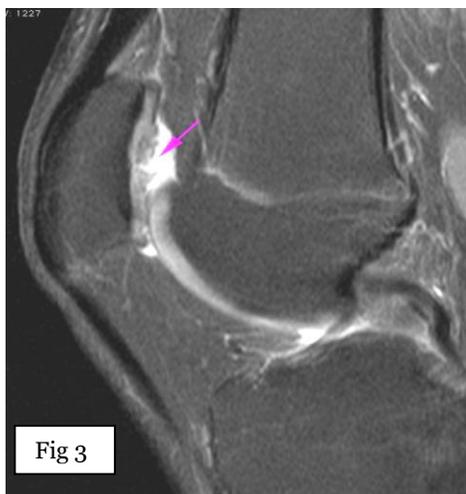
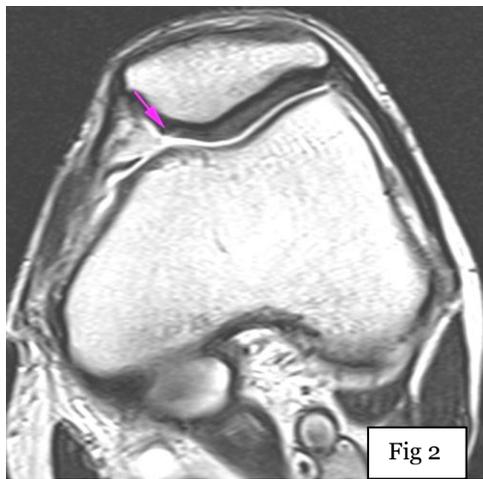


Fig 1: Grade 1; medial facet chondral softening with blister formation.

Fig 2: Grade 2; superficial fissure of medial facet.

Fig 3: Grade 3; “Crabmeat” erosion with fibrillation of the lateral facet.

Fig 4: Grade 4; full thickness chondral loss.

Discussion:

The causes of acute chondromalacia include instability, direct trauma, and fracture. The causes of chronic chondromalacia include subluxation, an increased quadriceps angle, quadriceps imbalance, posttraumatic malalignment, excessive lateral pressure syndrome and PCL injuries. Chronic chondromalacia may also result from inflammatory arthritis, synovitis and infection.

Grade 1: FS PD- weighted FSE images display focal areas of hyperintensity in the absence of any discontinuity in the smooth superficial cartilage contour. Early-stage blister formation with focal chondral convexity may also be observed.

Grade 2: In grade 2 chondromalacia, in addition to blister like swelling, there may be fissuring and fragmentation confined to a small area. FS PD weighted demonstrate hyperintense superficial or deep fissures.

Grade 3: On FSPD-weighted FSE images the imbibed fluid in surface articular cartilage defects is seen as high-signal-intensity sites. Axial or sagittal FS PD FSE scans are also helpful in identification of focal ulcerations and “ crabmeat ” lesions. Basal degeneration may be seen in association with surface fibrillation in grade 3.

Grade 4: Ulceration and exposure of subchondral bone seen in arthroscopic grade 4 are represented on MR images by frank articular cartilage defects, exposed subchondral bone, and underlying fluid.

Dr.Deepa S.Nadkarni / Dr.Shaikh M.Mazhar

N.B: These cases are authentic and from the archives of Radiance Diagnostics. For any queries/suggestions/feedback write to us at radiance@radiancediagnostics.in. Case of the month can also be accessed anytime online at **VIEW BOX** at www.radiancediagnostics.in