

An anatomico-radiological study of the infrapatellar fat pad

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The infrapatellar fat pad (IFP) is an intracapsular, but extrasynovial structure, located between the patellar tendon, femoral condyles and tibial plateau. We have recently described the microscopic organisation of the IFP, which consists of white adipose tissue (fibroadipose, lobular type), organised in lobuli delimited by thin connective septa. The aim of the study is to describe the sonoanatomical features of IFP in subjects without knee pathology during flexo-extension movements. Twentyfour volunteers subjects with no history of knee diseases (5M, 19F, mean age: 45yo) were analysed. Examinations were performed using high-resolution grey-scale ultrasound. The mean area of the deepest recognisable adipose chamber in extension were 0,12 and in flexion 0,19 mm², and the circumference were in extension 1,36 and in flexion 1,19 mm. The area of the closest adipose chamber to the patellar tendon were in extension 0,29 and flexion 0,12 mm²($p < 0.01$), whereas the circumference were in extension 2,67 and in flexion 1,56 mm($p < 0.01$). Our study demonstrated that the normal IFP is constituted by largest lobuli in the superficial part($p < 0.01$) that become flattened in flexion movement. The deep lobuli are smaller and do not change their morphology. Our study demonstrated that ultrasound is useful to analyse the dynamic changes of the IFP.

Keywords

Infrapatellar fat pad, ultrasound