

Additional Pathological Findings Using MRI on Patients with First Time Traumatic Lateral Patella Dislocation: A Study of 150 Patients

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Abstract : Purpose: Patients with lateral patellar dislocation (LPD) are not always referred to perform an MRI. This might be the case in first time LPD patients without surgical indications or in patients with recurrent LPD who had MRI in previous episodes. Unfortunately, in some cases, there are additional knee pathological findings, which include tearing of the collateral or cruciate ligaments and injury to the tendons or menisci. These findings might be overlooked during the physical examination or masked by nonspecific clinical findings like knee pain, effusion, or hemarthrosis. The prevalence of these findings, which can be revealed by MRI, is misreported in literature and is considered rare. In our practice, all patients with LPD are sent for MRI after LPD. Therefore, we have designed a retrospective comparative study to evaluate the prevalence of additional pathological findings in patients with acute traumatic LPD that had performed MRI, comparing different groups of patients according to age, sex, and Tibial Tuberosity-Trochlear Groove(TT-TG) distance. Methods: MRI of the knee in patients after traumatic LPD were evaluated for the presence of additional pathological findings such as injuries to ligaments: Anterior/Posterior cruciate ligament(ACL, PCL), Medial/Lateral collateral ligament(MCL, LCL), injuries to tendons(QUADICEPS, PATELLAR), menisci(Medial/Lateral meniscus(MM, LM)) and tibial plateau, by a fellowship-trained, senior musculoskeletal radiologist. A comparison between different groups of patients was performed according to age (age group < 25 years, age group > 25 years), sex (Male/Female group), and TT-TG distance (TT-TG<15 groups, TT-TG>15 groups). A descriptive and comparative statistical analysis was performed. Results: 150 patients were included in this study. All suffered from LPD between the years 2012-2017 (mean age 21.3(± SD 8.9), 86 males). ACL, PCL, MCL, and LCL complete or partial tears were found in 17(11.3%), 3(2%), 22(14.6%), and 4(2.7%) of the patients, respectively. MM and LM tears were found in 10(6.7%) and 3(2%) of the patients, respectively. A higher prevalence of PCL injury, MM tear, and LM tear were found in the older age group compared to the younger group of patients (10.5% vs. 1.8%, 18.4% vs. 2.7%, and 7.9% vs. 0%, respectively, p<0.05). A higher prevalence of non-displaced MM tear and LCL injury was found in the male group compared to the female group (8.1% vs. 0% and 8.1% vs. 0% respectively, p<0.05). A higher prevalence of ACL injury was found in the normal TT-TG group compared to the pathologic TT-TG group (17.5% vs. 2.3%, p= 0.0184). Conclusions: Overall, 43 out of 150 (28.7%) of the patient's MRI's were positive for additional pathological radiological findings. Interestingly, a higher prevalence of additional pathologies was found in the groups of patients with a lower risk for recurrent LPD, including males, patients older than 25, and patients with TT-TG lower than 15mm, and therefore might not be referred for an MRI scan. Thus, we recommend a strict physical examination, awareness to the high prevalence of additional pathological findings, and to consider performing an MRI in all patients after LPD.

Keywords : additional findings, lateral patellar dislocation (LPD), MRI scan, traumatic patellar dislocation, cruciate ligaments injuries, menisci injuries, collateral ligaments injuries

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