Combined trochleoplasty and MPFL reconstruction for treatment of chronic patellofemoral instability: a prospective minimum 2-year follow-up study.

Abstract:
Excessive trochlear dysplasia may be responsible for recurrent patellofemoral instability (PFI) due to a missing bony guidance for the patella in early flexion. Thus, an isolated medial patellofemoral ligament reconstruction (MPFLR) can be insufficient, since it mainly addresses instability close to extension and additionally can increase patellofemoral pressure leading to pain in flat or convex trochlear dysplasia. Therefore, in combination with a trochleoplasty, an anatomical trochlear groove is created, resulting in patellofemoral stability also in flexion, while patellofemoral pressure is normalized. In this prospective study, we evaluated the outcome of open trochleoplasty in combination with MPFLR with a minimum follow-up of 2 years for treatment of excessive PFI. In between 2007 and 2009, 18 knees of 17 consecutive patients (mean age of 22.2 ± 4.9 years) with trochlear dysplasia type B, C or D according to Dejour et al. and positive apprehension from 0 to 60° of flexion were included. Tegner, Kujala and IKDC scores, apprehension and pain, trochlear dysplasia, sulcus angle, tibial tuberosity trochlear groove, patellar tilt and shift, Caton-Deschamps index as well as patellofemoral arthrosis according to the classification of Iwano et al. were assessed pre- and postoperatively. At a mean of 30.5 ±
5.9 months, all but one patient were subjectively satisfied with the outcome of the procedure, all showing absence of positive apprehension or redislocation. Significant (p < 0.001) reduction in pain (5.6 to 2.5 ± 2.8 points, VAS) and increase in Tegner (2, range 0-4 points to 6, range 3-8 points), Kujala (51.1 to 87.9 ± 20.0 points) and IKDC (49.5 to 80.2 ± 21.0%) scores could be achieved. Radiologically significant (p < 0.02) improvement of patellofemoral positional parameters leading to more normal anatomy was recorded, while short-term arthrosis was absent. Combined treatment for trochleoplasty with MPFLR serves as a successful therapy for chronic PFI. This combinatory treatment concept is a reliable option not only as salvage therapy but also as primary procedure regarding treatment for excessive PFI. Prospective case series, Level IV.