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Commentary on the current concepts review "Lateral Patellar Instability" (105:397-409, March 2023), by Drapeau-Zgoralskiet al.

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We read with great interest the Current Concepts Review "Lateral Patellar Instability" (105:397-409, March 2023), by Drapeau-Zgoralskiet al. (1). The authors should be congratulated for their learned overview of this subject. However, we are somewhat surprised that Drapeau-Zgoralskiet al. did not mention the role of the medial patellotibial ligament (MPTL) and medial patellomeniscal ligament (MPML), which are considered secondary restraints of patellar stability (2). Combined MPFL and MPTL using an ipsilateral autologous gracilis tendon with soft tissue fixation in recurrent patellar dislocation 3 is effective and feasible, with satisfactory results at a minimum of 2.5 years (3).

Lateral retinaculum release in isolation is indicated in patients with lateral patellar compression syndrome to relieve the overload of the lateral articular facet and restore patellar tracking, reducing the forces required to displace the patella 10 mm laterally approximately by 10-20% within the range from 0 to 30 degrees flexion (4). Lateral retinaculum release is associated with complications, including iatrogenic medial patellar instability and quadriceps muscle weakening by excessive tissue release in a linear fashion, whereas shorter release may lead to surgical failure (4).

Indeed, lateral retinaculum release can be performed in combination with MPFL reconstruction (1). However, the role of lateral retinaculum release in patellofemoral instability remains unclear and debated (5). Studies analysing results after MPFL reconstruction seem promising, but they are heterogeneous in indication, and produce uncertain evidence (6, 7). Lateral retinaculum release is performed (without clear recommendations) to re-centralize the patella in its physiological location. Unfortunately, such procedure increases patellar instability by decreasing the pressure in the lateral patellar compartment, reducing the ability of dynamic stabilizers to maintain patellar tracking, and reducing the contact pressure of the patella over the trochlea. Even in presence of axial patellar tracking, the tendency of the patella to lateralize could be increased. A recent systematic review on 63 articles (2131 knees) comparing the outcomes of patients who underwent MPFL in isolation or in combination with lateral retinaculum release concluded that there is

no evidence in support of this procedure in patients with recurrent patellofemoral instability (8).

Drapeau-Zgoralskiet al. (1) discussed the MRI findings of the knees of patients following patellar dislocation, referring to two studies according to which the rate of chondral injuries following patellar dislocation is between 39 and 79%. These two studies were published in the 1990s, and were based on a total of 120 patients (9, 10). The last decade has seen several investigations on the incidence and characterization of chondral defects at imaging after first-time patellar dislocation. A recent imaging study found that the MPFL was injured in 92% of 175 patients after a first-time acute patellar dislocation (11). Chondral damage was frequent at the patellar crest, followed by the lateral femoral epicondyle (11). No association was found between patella alta, sulcus angle, Q angle, TT-TG distance, trochlear and patellar dysplasia and soft tissue damage (11). These data agree with a previous systematic review on 42 articles (2254 patients) which evidenced that almost the totality of patients following first-time patellar dislocation already exhibit tears of MPFL (98%) and chondral damages (89%) at imaging and diagnostic arthroscopy (12).

Controversies regarding the frequency, extent, and location of chondral lesions in patients with recurrent patellar dislocation managed conservatively abound (13-15). The frequency, location, and extent of chondral damage in patients with recurrent patellofemoral instability have been recently evaluated in several imaging studies. Overall, 84.8% of patients suffering from recurrent patellar dislocations demonstrated patellar chondral defects, with similar incidence in the medial facet and patellar crest, and 27.8% of patients demonstrated trochlear chondral injuries (16).

Drapeau-Zgoralskiet al. 1 touched upon the chondral procedures which could be performed in patients with chondral defects caused by patellar dislocation, briefly describing management indications and modalities. Fixation methods have been recently criticized. Suturing does allow to better stabilise the membrane, but it produces partial-thickness lesions of the articular cartilage. These fissures may not heal, and enlarge with time (17, 18). Initially, it was recommended that all the membrane procedures were to be fixed using sutures (19). Suturing induced severe local cartilage impairment which may lead to pain, reduced healing and premature osteoarthritis (20). A recent systematic review of 26 studies (1539 procedures) found that no membrane fixation for matrix-induced autologous chondrocyte implantation (mACI) in the knee scored better than the fastening techniques at midterm follow-up (21). Drapeau-Zgoralskiet al. (1) cited the use of particulated juvenile cartilage allograft, but this procedure has been poorly evaluated in the knee. Drapeau-Zgoralskiet al. (1) did not mention the clinical trials which exclusively focused on the management of isolated chondral defects of the patellofemoral joint. Drapeau-Zgoralskiet al. concluded that these procedures are burdened by a high reoperation rate, with a weighted rate of 35%. In this context, we respectfully point out that a recent systematic review evaluated the outcome and complication rate of the surgical management of isolated chondral defects of the patellofemoral joint (22). All the PROMs improved from baseline to the last follow-up (22). The rate of hypertrophy was 5.6%, the rate of progression to total knee arthroplasty was 2.4%, the rate of revision was 16.9%, and the rate of failure was 13.0% (22). On the other hand, the authors did not discuss the efficacy of more new surgical strategies to restore chondral injuries, including autologous matrix-induced chondrogenesis (AMIC). In AMIC, a resorbable membrane is used to stabilize the clot and keep it stable in the joint cavity (23, 24). Different from other chondral procedures, AMIC does not necessitate to harvest any autologous tissue and is performed in a single session surgery. The management of patellar chondral defects with AMIC on 38 patients resulted in a rate of revision of 4% at a mean of 41 months follow-up.

Much is made of the use of femoral bony fixation when reconstructing the MPFL, and of the necessity to identify Schottle’s point radiographically (25) to ensure physiometricity of the reconstruction. The authors mention that the tendon of adductor magnus can be an alternative: identification of the tendon when it inserts on the adductor tubercle

is straightforward if the surgeon is acquainted with the local anatomy, does not require ionising radiations, does not need implants, and the dissection is no more extensive of identified a bony landmark which then necessitates confirmation with radiography. An elegant randomised controlled trial has shown no difference in re-dislocation rate, clinical outcome and patient satisfaction when compared to tunnel fixation (26).

In conclusion, we strongly agree with Drapeau-Zgoralskiet al. (1) that the management of patellofemoral instability is complex. A current concepts review can only cover some of the issues on this fascinating subject, and we look forward to more, and of greater depth, state of the art viewpoints on the subject.

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