

# Lateral retinacular release and reconstruction

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In 1974, Merchant and Mercer published, “Lateral release of the patella: A preliminary report” (1). The operation rapidly became the answer for any type of anterior knee pain (2-6). This resulted in overuse of the procedure and use for inappropriate indications. As complications mounted, scientific analysis found the appropriate indications which were patellar tilt and excessively tight lateral retinacular tissues. In patients with patellar dislocations or hyperlaxity, lateral release alone has not been found to be as useful, but can be combined with medial patellofemoral ligament reconstruction.

The essential problem with the lateral release is that what makes it useful can also result in complications. The operation leads to decreased vastus lateralis strength and decreased lateral patella tracking. In patients without excessively tight lateral retinacular or with hyperlaxity, the result can be an unstable patella. This can be worse than the original problem. Patella instability or excessive medial tightening makes things worse by creating medial subluxation or even medial dislocation. Hughston and Deese first reported this in 1988 (7). Repair in these circumstances requires rebalancing the extensor mechanism, usually by restoring the lateral restraints.

In their recent paper, Sanchis-Alfonso *et al.* have described their results of recreating lateral stability with an ilio-tibial band (ITB) autograft (8). They used the technique of Andrich (9) utilizing a slip of ITB to reinforce the repair. They cite Teitge and Torga-Spak who showed that simple lateral retinaculum repair tends to fail over time (10). Medial subluxation following lateral release is an uncommon, but severe problem. The results of Sanchis-Alfonso *et al.* indicate that ITB autograft seems to be effective. This was the only reconstruction technique they tried, so it must be considered that other techniques using

auto or allograft tissue to reinforce the lateral retinaculum are probably helpful in this situation as well.

While a solution to the problem of over-medialization is valuable, we are still struggling to understand the precise etiologies of patellofemoral pain. We know that the nociceptive fibers around the extensor mechanism include those in the subchondral patellar bone, the fat pad, the retinacular and the tendons. We also know that pain arising from patella instability is different from the pain arising from patella compression force overload. We do not understand why the pain is different, but we have learned that treating both problems with the same solution is not always successful.

It has been shown that in new onset patellofemoral pain, the majority of pain comes from subchondral patella bone nerves. This is followed by fat pad nerve fibers, then medial retinacular tissues (11). To their credit, Sanchis-Alfonso *et al.* noted a high percentage of fat pad pain in their subjects, performing partial fat pad resection in 13/17 subjects (8). One wonders how many failed lateral release procedures neglected addressing painful fat pads.

Until more details regarding the exact sources of pain (and the reasons for that pain) are known, we will continue to try new methods to change patellofemoral forces, both statically and dynamically. One thing is certain. The physical examination of the extensor mechanism in anterior knee pain must include examination of the fat pads, the retinacular (including the medial plica) and tests for hypermobility in addition to the standard tests for patellar tracking and compression pain.

For now, the hard indications for lateral retinacular release in adults are patellar tilt and an excessively tight lateral retinaculum. That is the conclusion after an extensive review of the literature by Clifton *et al.* (12). Dynamic

tracking issues, lateral patellar compression syndrome without tilt, lateral facet arthritis and instability issues may be soft indications in certain cases, but in these gray areas caution must be exercised as the solution of lateral release could be worse than the original problem. Repair for failed lateral release will always be necessary, but it is hoped that a rare operation can become even rarer.

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