

The anterolateral aspect of the knee: the state of play

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The Guest Editors are Andrew Amis, Stefano Zaffagnini, and Volker Musahl.

This issue includes a set of papers relating to the anterolateral aspect of the knee, and reflects a growing interest among sports surgeons and therapists. The underlying reason for this interest is a result of the continuing presence of a minority of patients who have had an ACL reconstruction, yet whose knee instability has not been completely abolished—the ‘pivot-glide’. In the 2000s, this concern was addressed by many papers which explored how the ACL itself acts to control tibiofemoral rotatory instability. A notable example of this was ‘anatomic’ ACL reconstruction methods, in which a double-bundle graft structure was

created. There was much debate concerning details of ACL reconstruction, such as graft tension, tunnel placement, and the speed of rehabilitation and return to sport. However, this intense international effort failed to eliminate the pivot-glide in all patients.

If we step back from the recent era of arthroscopic examination of the interior of the knee and its associated arthroscopic ACL reconstruction methods, we see a bigger picture, with the whole knee in perspective. Our predecessors saw that the instability which followed ACL rupture was manifested primarily by abnormally increased motion at the lateral aspect of the knee, and so it was natural that they developed surgical procedures which addressed that. This approach led to many variants on the theme of lateral extra-articular tenodeses, and procedures were named after their originators, including MacIntosh, Lemaire, Ellison, and Losee, for example. Although these did act to reduce the abnormal joint laxity, they were unable to reproduce the restraining action of the ACL, which acts close to the centre of the knee, and so some residual laxity persisted. Furthermore, the loads on these tenodeses caused them to stretch-out and so they became less effective. In an attempt to reduce this stretching out, it was common to immobilise the knee in a plaster cast in flexion and external rotation post-surgery: the natural outcome was stiffness and a reputation for the lateral tenodeses to cause degenerative changes in the lateral compartment of the knee. It is unsurprising that the lateral procedures fell from use once intra-articular ACL reconstruction methods were introduced, and that change was reinforced by the subsequent introduction of arthroscopic assistance. The change to intra-articular ACL reconstruction was accompanied by developments in instruments to aid graft tunnel positioning, and graft fixation devices, as well as more-rapid rehabilitation regimes.

With the resulting high strengths of the ACL grafts and their fixations, it then seemed unnecessary to persist with the addition of the lateral extra-articular procedures, especially after reports of symptoms associated with the graft defect in the ilio-tibial band, and so they fell from use.

This issue of the KSSTA brings us full circle, back to the anterolateral aspect of the knee. This has arisen, partly because it has become more accepted that an ACL injury may often cause damage to other structures, and the common finding of bone bruises in the lateral femoral condyle is proof of the subluxation of the lateral compartment of the knee during the injury. Indeed, it may be suggested that it would be surprising to expect the anterolateral soft tissues to remain undamaged in that situation. We do not yet have evidence about what soft tissue healing may occur after the knee has been stabilised by the ACL reconstruction (as we do for the medial collateral ligament), but the persistence of abnormal rotational laxity implies that what healing does occur may not always be capable of restoring normal biomechanics. This invites a return to the lateral procedures. The papers in this issue of the KSSTA include studies which address many of our current areas of uncertainty, including medical imaging of the damage, clinical diagnostics, and surgical treatment methods. Many of these papers conclude that “more work is needed”, to build a solid base of evidence for or against this lateral extra-articular surgery, and point the way towards future developments. In addition, for those among our readers who remain sceptical as to whether these lateral procedures are needed at all: please read what is presented, based on our present state of knowledge—it may be provocative!