Technical note

Modified lateral approach for knee arthroplasty in a fixed valgus knee—the medial quadriceps snip

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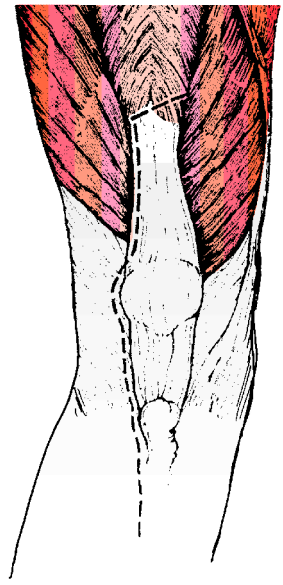
The lateral approach to the knee first mentioned by Cameron and Fedorkow (1982) was developed by Keblish (1991). Although valgus deformity can be successfully corrected via a medial approach (Krachkow et al. 1991), an advantage of the lateral approach is that it permits direct exposure of the contracted soft tissue in the lateral aspect of the knee. An extensive lateral release is much easier to perform. The lateral approach preserves the continuity of the medial side of the capsule with the insertion of the vastus medialis vascularity of the patella and corrects the external tibial rotation associated with the valgus knee. Patellofemoral problems may diminish with this approach (Buechel 1990, Fiddian et al. 1998).

Operative technique

A midline laterally, slightly curved, skin incision starts approximately 10 cm above the patella and ends 4 cm below the tibial tubercle. This incision becomes nearly straight at the end. A lateral parapatellar capsular incision is made proximally through the lateral edge of the quadriceps tendon with a medial snip and distally into the fascia of the anterior compartment (Figure).

The upper part of the anterior compartment muscles and the ileotibial band is subperiosteally elevated from Gerdy's tubercle to the level of the fibular head and is followed by release of the postero-lateral corner of the knee and lateral meniscectomy. At this point, medial patellar displacement without subperiosteal osteotomy of the tibial tubercle is possible followed by release of the ACL, PCL and primary tibial and femoral bone cuts.

Soft tissue balancing is evaluated with the appropriate spacer. Further lateral release, if needed, is performed gradually by one or two oblique incisions in the ileotibial fascia and the lateral collateral ligament with the popliteus tendon released from the femur. No further release has been needed to obtain good flexion and extension balancing



The capsular incision and medial snip.

in our 8 cases. Following implantation of the prosthesis, the snip and incision of the upper part of the quadriceps tendon and along the lateral side of the patella are repaired in full extension, but the distal part of the incision along the patellar tendon and the anterior muscle's fascia are left unsutured.

The tibiofemoral alignment postoperatively was from 7°–10°, patellar tracking was good in all cases. None of the patients had pain and the mean range of motion was 100°. 1 patient showed a loss of 10° in active extension and 2 had a 5° fixed flexion contracture.

Discussion

Gurvin et al. (1995) found that the function of the extensor mechanism was unimpaired following lateral quadriceps snip. We believe that the medial snip during the lateral approach to the valgus knee is safer and easier to perform than the osteoperiosteal flap of the tibial tubercle, described by Keblish (1991) and Buechel (1990), which has the risk of patellar tendon avulsion. For the same reason, Fiddian et al. (1998) developed the incision in the midline of the quadriceps tendon with repositioning of the vastus lateralis. In all our cases, closure of the joint capsule to the level of the joint line was possible without tension, with good tracking of the patella.

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