

A Technique to Facilitate Everting the Patella in Stiff or Obese Knees in Total Knee Arthroplasty

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Abstract

In many techniques for total knee arthroplasty, eversion of the patella is necessary. In stiff or obese knees, eversion is often difficult to perform. With the patella-holding clamp (used to cement the patellar component), it is possible to keep the patella in an everted position while the knee is being flexed.

Safe and sufficient exposure of the joint is key to any arthroplasty. During total knee arthroplasty, the patella must be subluxed or everted depending on the surgeon's preference. Difficulty with exposure and eversion of the patella is often encountered in the patient with a stiff or ankylosed knee, obesity, revision surgery, or conversion of a failed tibial osteotomy. Patella baja, severe varus deformity, and rheumatoid arthritis might also cause problems.¹⁻³ Here we introduce a simple method for facilitating patellar eversion in stiff or obese knees.

DISCUSSION

With a median parapatellar arthrotomy, everting the patella is usually easy and safe. In difficult cases, eversion can be facilitated by excising the suprapatellar fibrous adhesions and releasing the infrapatellar fat pad and any scar in the lateral gutter of the knee. Use of a formal lateral retinacular release might also be helpful.

If the normal median parapatellar arthrotomy is not sufficient for everting the patella, the capsular incision can be elongated proximally into a quadriceps snip. In this technique, the arthrotomy is extended proximally and laterally in the direction of the vastus lateralis. This leads to reduced tension on the extensor apparatus,

loosens the apparatus, and facilitates patella eversion. Alternatively, the snip can be done as a short, inverted V.³ Reduced postoperative quadriceps strength is not a significant problem, according to the results of Garvin and colleagues⁴ and Barrack and colleagues.⁵ In their patients, Cybex testing showed no difference in extension strength after the quadriceps snip.

The V-Y turnaround of the quadriceps involves the standard median parapatellar incision and another cut from the proximal apex of the arthrotomy heading laterally and distally along the tendon of the vastus lateralis

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and ending laterally to the patella. Excellent eversion of the patella is achieved with this cut, but patients often have an extensor lag.⁵⁻⁸ Postoperative rehabilitation requires adapted procedures, including a brace, restriction of range of motion, and reduced weight-bearing for 6 weeks, or until soft tissue has healed.

In extremely stiff knees, a tibial tubercle osteotomy is sometimes needed to evert the patella.⁹ When a long later-



Figure. Patella-holding clamp everts patella while knee is flexed.

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al musculoepiosteal flap incorporating the tibial tubercle and anterior tibia is developed, there is a lower incidence of extension lag, and quadriceps weakness is rare.⁵

TECHNIQUE

Eversion of the patella is sometimes difficult merely because of failure to achieve a good grip on the patella. The fatty lubrication of the patella and the smooth surface of the retro-patellar cartilage make it difficult to keep the patella everted while the knee is flexed. We recommend using the patella-holding clamp (for cementing the patellar component) to get a better grip on the patella and to keep it in the correct position. With a strong grip on the bone, and using the elongated arms of the clamp, the surgeon has enough leverage to maintain the patella in an everted position while the knee is flexed (Figure). Once the clamp is removed, the patella usually remains stable in the everted position, and standard techniques for resurfacing can be used. Alternatively, the surgeon can avoid patellar eversion entirely and instead sublux the patella laterally as the femur and tibia are prepared. In this case, it is usually easiest to prepare the patella for resurfacing with the knee in extension and the patella rotated upward 90° and stabilized with tissue clamps above and below. In revision cases or ankylosed knees, a prophylactic fixation pin in the tibial tubercle minimizes the chance of patellar tendon avulsion.¹⁰

AUTHORS' DISCLOSURE STATEMENT

The authors report no actual or potential conflict of interest in relation to this article.

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