

An Alternative Method for “All-Inside” Anterior Cruciate Ligament Reconstruction

To the Editor:

In response to the recent Technical Note by James H. Lubowitz, M.D.,¹ I submit to you an alternative “all-inside” technique for socket-based (tibia and femur) anterior cruciate ligament (ACL) reconstruction. My preferred technique features femoral socket preparation via the anteromedial (AM) portal² with femoral-side graft fixation via a bioabsorbable cross-pin (Bio-TransFix; Arthrex, Naples, FL)³ and a retrocut tibial socket (drilled from inside the joint to create the tibial socket) with tibial fixation via a retrograde interference screw as described by Morgan et al.⁴ The graft is either hamstring autograft or anterior tibialis tendon allograft.

Femoral socket preparation through the AM portal ensures the advantage of reliable socket placement at the anatomic origin (2-o’clock position for a left knee and 10-o’clock position for a right knee) independent of tibial socket preparation.² The goals of the approach are to identify what I term the “under-the-wall” position and then, using an awl to make a hole above that point based on the proposed diameter for the femoral socket, to ideally leave approximately 0.5 mm intact for the tunnel floor. Such a socket position allows a dual limb graft (tibialis allograft) to be placed corresponding to the AM and posterolateral ACL bundles (similar to a technique proposed by Caborn and Chang⁵), which are later suspended by the cross-pin.

The technical advantages of this technique include femoral socket preparation and fixation independent of tibial socket or tunnel preparation, strong fixation,^{3,6} a limited number of incisions, and alleviation of excessively long bone tunnels in the tibia.¹

Our experience with limited-incision all-inside ACL reconstructions has also shown clinical benefit relative to much less need for postoperative analgesia, faster return to work and daily activities in the short term, and a decreased number of super-

vised physical therapy visits for cost savings. We continue to monitor the outcome of these patients functionally. At this early term of follow-up, we are pleased by our promising results.

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REFERENCES

1. Lubowitz JH. No-tunnel anterior cruciate ligament reconstruction: The transtibial all-inside technique. *Arthroscopy* 2006;22:900.e1-900.e11. Available online at www.arthroscopyjournal.org.
2. Giron F, Buzzi R, Aglietti P. Femoral tunnel position in anterior cruciate ligament reconstruction using three techniques: A cadaver study. *Arthroscopy* 1999;15:750-756.
3. Ahmad CS, Gardner TR, Groh M, Arnouk J, Levine WN. Mechanical properties of soft tissue femoral fixation devices for anterior cruciate ligament reconstruction. *Am J Sports Med* 2004;32:635-640.
4. Morgan CD, Stein DA, Leitman EH, Kalman VR. Anatomic tibial graft fixation using a retrograde bio-interference screw for endoscopic anterior cruciate ligament reconstruction. *Arthroscopy* 2002;18:E38.
5. Caborn DN, Chang HC. Single femoral socket double-bundle anterior cruciate ligament reconstruction using tibialis anterior tendon: Description of a new technique. *Arthroscopy* 2005;21:1273.e1-1273.e5. Available online at www.arthroscopyjournal.org.
6. Chang HC, Nyland J, Nawab A, Burden R, Caborn DN. Biomechanical comparison of the bioabsorbable Retroscrew system, Bioscrew Xtralok with stress equalization tensioner, and 35-mm Delta screws for tibialis anterior graft-tibial tunnel fixation in porcine tibiae. *Am J Sports Med* 2005;33:1057-1064.