

redislocation while skiing after a successful arthroscopic stabilization. We were able to reconstruct this patient's glenoid with a Latarjet procedure, and he remains in stable condition.

I think it would be reasonable to assume that in addition to the theoretic weakness associated with cyst formation in the glenoid, the simple act of drilling several holes in line on the anterior edge of the glenoid would alone predispose the glenoid to fracture if enough stress is applied, as was shown in the patient we recently treated.

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### Author's Reply

We thank Dr. Steinmann for his interest in our article and were interested to read about his experience with similar cases.

From an engineering point of view, the creation of any defect (such as a drill hole) within a structure will tend to cause stress concentration around the defect, particularly if that defect lies close to the margin of the structure. If several defects lie in close proximity, a "postage stamp" effect may be created, where cracks may propagate between defects and coalesce.

We agree that the use of suture anchors necessarily incurs this risk, and whether the drill hole is initially filled with metal, polymer, or absorbable material probably does not matter. The extra concern with some absorbable implants is that the defects may enlarge unpredictably beyond their original dimensions because of osteolysis and make matters worse.

Ideally, newer materials that fully resorb and are replaced by host bone seem the best solution to restoring stress distribution across the glenoid face, but reconstitution may take several years and it is not feasible to expect athletes in collision sports to avoid competition during this process. Until we have a better solution, patients should be advised of the risk of glenoid rim fracture, irrespective of the type of anchor used.

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### The Anteromedial Portal for Anterior Cruciate Ligament Reconstruction

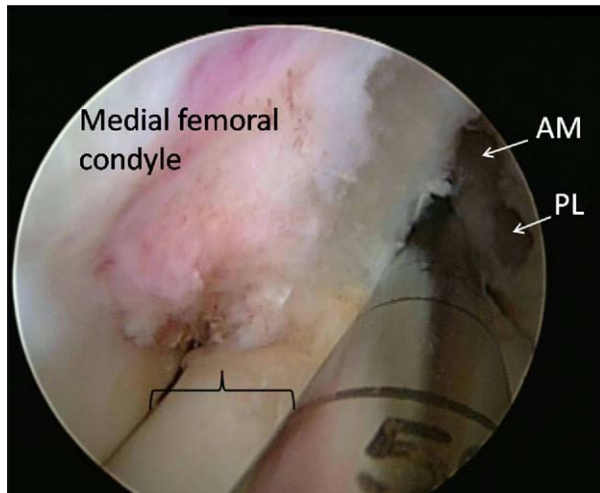
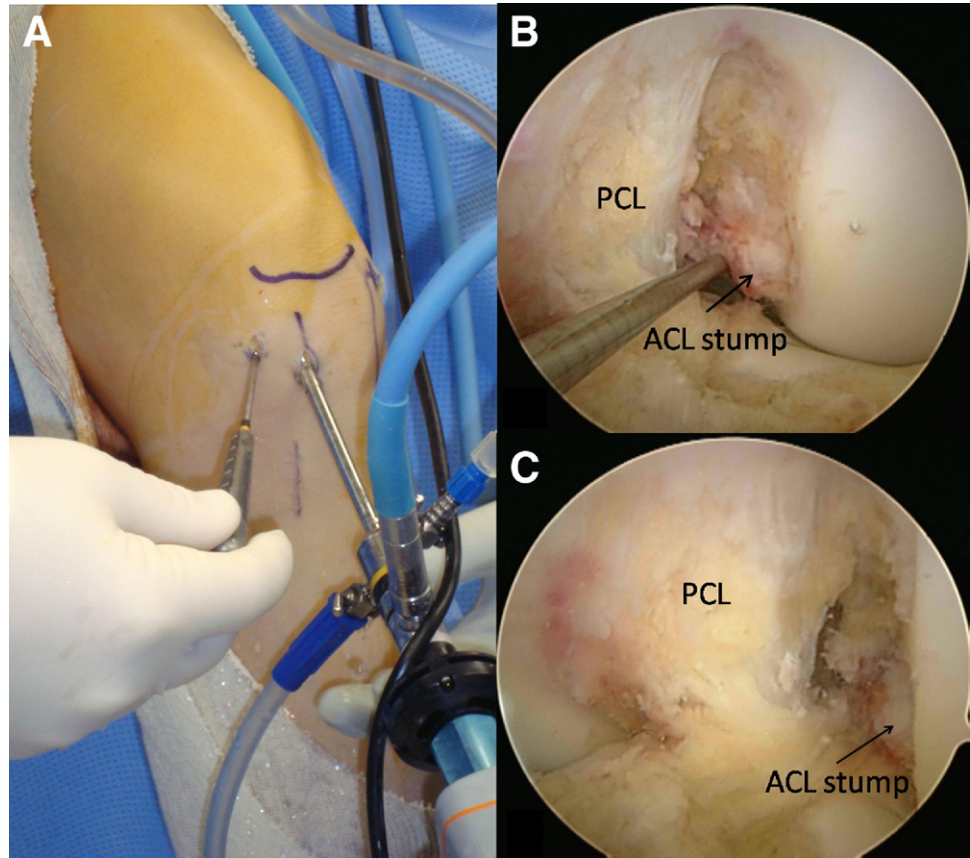
To the Editor:

We read with great interest the discussion on the use of the anteromedial portal for anterior cruciate ligament (ACL) reconstruction.<sup>1</sup> Clearly, Dr. Lanny Johnson and Dr. David Shneider are forefathers of modern-day arthroscopy, and we thank Dr. Shneider for his mentorship and his dedication to advancing the field and improving patient results. With regard to the anteromedial portal approach for ACL reconstruction, we respect Dr. Shneider's experience with the use of this technique and agree with his statement that transtibial drilling could result in poor femoral tunnel positions.<sup>2,3</sup>

At our institution, the medial portal approach has been used successfully for a number of years, for both single- and double-bundle reconstructions and with several femoral fixation devices. In addition, an accessory medial portal is used that allows for visualization and instrumentation from the medial side simultaneously (Fig 1).<sup>4,5</sup> The 2 medial portals

are created very carefully with guidance from a spinal needle. The anteromedial portal is first established along the inferomedial border of the patellar tendon. It is angled proximally and laterally, along the path of the native ACL, and easily reaches the femoral attachment site. The accessory medial portal is established medially along the joint line as inferiorly as possible without damaging the medial meniscus. Careful visualization from the anterolateral portal ensures that there is enough space to avoid damage to the medial femoral condyle when using cannulated drills (Fig 2).<sup>6,7</sup> By using this approach, we have found that the native femoral ACL insertion site is easily identified and accessed, even in those cases with narrow notch measurements (Fig 3). In our experience this has made the notchplasty largely unnecessary, whereas we performed it routinely in the past. Furthermore, when a notchplasty is performed, the native femoral ACL insertion site is removed along with important

**FIGURE 1.** (A) View of left knee in operating position. The arthroscope is in the anteromedial portal, and the probe is in the accessory medial portal. (B) Arthroscopic image corresponding with previously described situation. Using this approach, with 2 medial portals, allows for visualization of the femoral ACL insertion and simultaneous instrumentation. (C) Arthroscopic view of femoral ACL insertion site through anterolateral portal. (PCL, posterior cruciate ligament.)

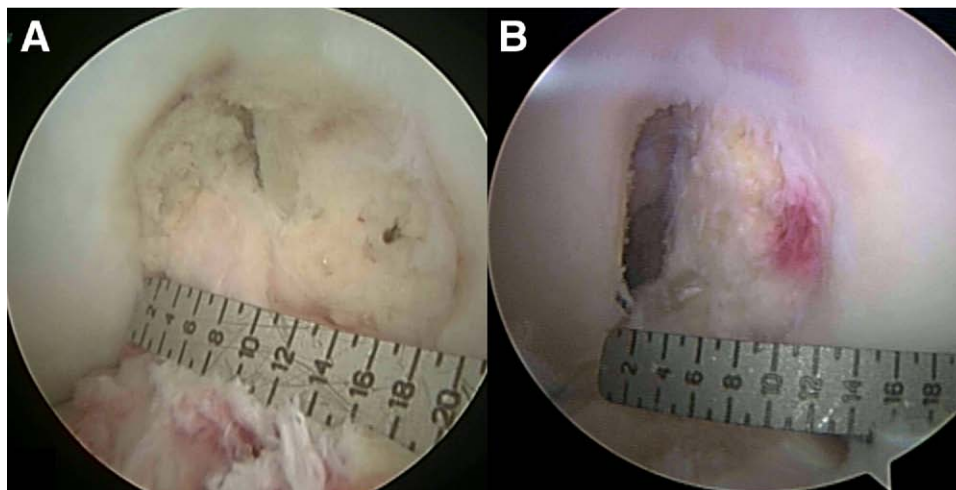


**FIGURE 2.** Arthroscopic anteromedial portal view of left knee in 90° of flexion. The femoral anteromedial (AM) and posterolateral (PL) tunnels have already been drilled. An 8-mm drill is placed through the accessory medial portal near the most posterior border of the ACL insertion site. This image shows that there is still room between the drill and the medial femoral condyle to allow for safe drilling.

bony landmarks such as the lateral intercondylar ridge (resident's ridge).<sup>8,9</sup> This makes finding the correct location for an anatomic femoral tunnel position challenging and removes the ability to individualize each reconstruction to the patient's anatomy. We agree with Dr. Shneider that "exposure is the key to a good result." This is what view from the anteromedial portal provides, perfect "exposure" of the femoral ACL insertion site and the anatomic roadmap for reconstruction.

Our experience with ligament impingement has also changed over the years. We have not found it necessary to perform a notchplasty to avoid any impingement since we have evolved to a more anatomic reconstruction. It is clear that in the native state, the ACL does not impinge, and as such, an anatomically reconstructed ACL should not impinge either.

Finally, Dr. Shneider's advice that failure to perform a notchplasty "is a guarantee for poor results" is misleading and is clearly not supported by the literature. Although his experience with this technique has allowed his patients to have excellent results, he would probably agree that there are many variations in anatomic ACL reconstruction that can be used with equal success, including at our institution where over 1,000 anatomic ACL reconstructions have been performed using the 3-portal technique.



**FIGURE 3.** Arthroscopic view of 2 right knees in 90° of flexion. (A) This patient has a large notch, measuring 19 mm in width. Performing ACL reconstruction in a patient with a large notch is less difficult because the surgeon has good visualization and sufficient room for instrumentation. (B) This patient has a small notch, measuring only 11 mm. Performing ACL reconstruction in a patient with a small notch can present a challenge. Drilling a smaller-diameter tunnel or using a flexible guidewire and cannulated drill might offer a solution.

We applaud Dr. Lubowitz and Dr. Shneider for their continued pursuit of a more anatomic reconstruction and willingness to discuss the trials and tribulations that they have experienced with this progression. We can all learn from their experiences and should continue to keep an open mind as we strive to better understand the ACL and its reconstruction.

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### Author's Reply

Dear Drs. van Eck, Morse, and Fu,

Thank you for your response to my letter about the anterior medial portal for ACL reconstruction. I appreciate your kind words and know you enjoyed your time in East Lansing, Dr. Fu.

I do not think it is misleading to emphasize the importance of notchplasty for successful ACL reconstruction. Despite your research and early reports in performing anatomic ACL reconstruction, I believe history supports my position. Let us review how we arrived at the current state of arthroscopic ACL reconstruction.