Avoidance of Reamer Breakage During ACL Reconstruction With Flexible Reamer System: Response

Authors’ Response:

We greatly appreciate the viewpoints of Dr Jaiman concerning the timing/use of the 4.5-mm reamer when utilizing a flexible reamer for establishing a femoral tunnel. Using a flexible reamer system is very advantageous in creating a low femoral tunnel especially in the current context of concomitant anterolateral ligament (ALL) reconstruction or posterolateral corner reconstruction, as can often be needed with revision anterior cruciate ligament (ACL) surgery.

Furthermore, avoiding knee hyperflexion facilitates placement of the femoral guide pin, as visualization and graft passage is almost never compromised as is often seen with straight pins/reamers placed using the necessary hyperflexion to avoid a short femoral tunnel. Furthermore, with modern flexible reamers and experience, the ACL tunnel length is maximized, with most condylar distances 35 to 40 mm with use of standard offset guides.

As the reader suggests, utilizing the appropriate graft size reamer first is quite acceptable as it does seat the femoral tunnel/socket when the pin is placed ideally. We often utilize this first step. However, in those situations when the nitinol pin is too posterior or low on the lateral wall, using the 4.5-mm reamer first across the intercondylar distance allows adjustability of the femoral tunnel anteriorly or superiorly without having to replace the flexible pin. In our experience, redirecting a slightly low or posterior nitinol wire can be difficult as the nitinol pin often drops into the same track. Furthermore, there are advantages to knowing the condylar width (especially if too short or in the case of a less experienced surgeon) before seating the femoral tunnel. If the surgeon does elect to ream first with the 4.5-mm reamer, the femoral tunnel can still be seated in an accurate position, despite the mobility. One advantage of reaming with the 4.5-mm first, in our experience, is that it allows the flexible final-sized reamer to seat itself within the condyle in the scenario where the pin is too posterior.

We agree that placement of the final socket centered on the bifurcate ridge is most critical, and we often ream with the final-sized reamer first then follow with the 4.5-mm reamer. We discussed in the article reaming with the 4.5-mm reamer first as it is a very nice technical trick to adjust the final socket without having to replace the nitinol pin when the initial attempt/placement could be adjusted slightly anteriorly or superiorly, which is often the case. When using a bone-tendon-bone autograft, this technique modification helps avoid posterior wall blow out from a posteriorly placed nitinol wire. Although using the final-sized reamer first works extremely well when the pin is placed accurately, we find that reaming with the 4.5-mm reamer first prevents the larger, final-sized reamer from kinking on the nitinol wire and is often easier to ream. With our change to the Stryker flexible system we have not had reamer or wire breakage regardless of the order of reaming.

As to the use of the tibial guide, the proper selection of tibial angle we agree can be variable and is best adjusted to replicating the ACL tibial footprint. We find the 55° setting very useful when performing hamstrings autografts but have utilized other angles of approach, when appropriate, as suggested by the readers’ comment.

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