Forewarned Is Forearmed

Commentary on an article by Tyler Steven Watters, MD, et al.: “Total Knee Arthroplasty After Anterior Cruciate Ligament Reconstruction. Not Just a Routine Primary Arthroplasty”

Brian M. Devitt, MD, FRCS

The very nature of sport is that it can occasion harm and involves various degrees of risk, which is perhaps one of the reasons that it is so compelling for both participants and spectators. However, there is often an adversarial relationship between sporting performance and patient welfare. As a doctor, one of the primary tenets governing clinical practice is primum non nocere (first, do no harm). This raises challenging ethical dilemmas in the context of sports medicine, in which orthopaedic surgeons are frequently called upon to treat patients injured playing sport with the explicit goal of returning these patients to the same sport and, thus, back into harm’s way.

Players participate in sport of their own volition and the principal motivation of the orthopaedic surgeon is one of beneficence. The primary aim is to do good for the patient by treating any injuries that may occur and to prevent any further harm. In the context of anterior cruciate ligament (ACL) injuries, patients need to be made aware of not just the inherent risks that they face in the short term but also the longer-term sequelae, such as osteoarthritis. Equally, surgeons also need to be aware of the potential risks if total knee arthroplasty is required in the future.

Although an ACL reconstruction may facilitate patients returning to sport, it has not been shown to prevent them from developing osteoarthritis later in life. Therefore, as the rate of ACL reconstruction increases exponentially, so too will the requirement for total knee arthroplasty for these patients in due course. In this article, Watters et al. have demonstrated that these knee arthroplasties are “not just a routine primary arthroplasty” and carry some hidden challenges and potential complications. The authors present the results of a cohort of 122 patients undergoing total knee arthroplasty after ACL reconstruction, comparing them with those of a control group of patients undergoing routine primary total knee arthroplasty for osteoarthritis.

Interestingly, although both groups demonstrated equivalent functional outcome at a follow-up of 3 years, there was a significantly greater risk of reoperation in the ACL group (relative risk, 5.5). More concerning was the markedly increased rate of infection postoperatively, which was 3.3%.

These results beg the question whether we should be adopting a two-stage policy for these cases to remove metal components, given this unacceptably high rate of infection. Although the authors do not provide a definitive answer to this question, they do offer some helpful technical tips for dealing with retained implants at the time of the primary total knee arthroplasty. They also refer to the fact that exposure is more difficult and time-consuming in the group undergoing total knee arthroplasty after ACL reconstruction and provide some suggestions on how to deal with it.

In general, if harm has already been done, it is probably best not to add to it. Surprises are not welcome in the operating room, but frequently appear at the most inopportune time. In my opinion, this article is extremely useful and details clearly the potential challenges that orthopaedic surgeons may face in dealing with an increasingly more common group of patients requiring total knee arthroplasty. An awareness of these issues with preoperative planning and appropriate patient counseling is extremely helpful. After all, in surgery, as in life, forewarned is forearmed.

*The author indicated that no external funding was received for any aspect of this work. The Disclosure of Potential Conflicts of Interest forms are provided with the online version of the article.

References