Papers Presented at the Annual Meetings of the Knee Society

Editorial Comment

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The Papers Presented at the Annual Meetings of the Knee Society Symposium includes selected papers read at the 2007 Annual Interim Meeting of the Knee Society held in Sienna, Italy in September 2007, and the 2008 Open Scientific Meeting of the Knee Society, held in San Francisco in March 2008. The wide range and high quality of the scientific material presented here is a credit to the excellent work of the Knee Society education committee and particularly to its Program Chair, Gil Scuderi, MD. Each of these papers is focused, concise and highly readable, which is a credit to the outstanding work of the staff at CORR in providing clear and consistent guidelines for each of the authors whose work was accepted for publication.

The 2008 Ranawat Award was authored by Dr. Patricia Franklin and colleagues for their work on patient-specific attributes that affect the functional outcome after total knee replacement. While considerable interest in patient outcomes research has been present for some time now, we are still uncovering the hidden power, and the hidden pitfalls, of such evaluation tools in orthopaedics. Dr. Franklin and colleagues effectively demonstrate the substantial influence of specific patient characteristics in determining the ultimate functional outcome after knee replacement. These data are useful for surgeons and patients alike as part of the preoperative discussion so that expectations can be managed more appropriately. Further, this paper provides some insight into additional strategies that might be employed prior to knee replacement to affect some patient attributes that adversely impact outcome.

The 2008 Coventry Award paper was authored by D'Lima, Colwell, and colleagues from the Scripps Clinic for

their innovative report that directly measured the in vivo forces that the knee experiences after total knee arthroplasty. In an outstanding collaboration between basic science researchers, engineers, and clinicians, Dr. Colwell's group designed and implanted in three patients an instrumented tibial component that allowed the direct measurement of both knee forces and moments in vivo. These results begin to give us a true glimpse of the forces that are seen by total knee bearing surfaces and fixation interfaces thus providing us with a more scientific approach to what have otherwise been empiric recommendations regarding physical activities after total knee arthroplasty.

The 2008 John Insall Award paper was authored by Dr. Steven MacDonald and colleagues from London, Ontario and addressed the specific impact of gender on the clinical outcome after total knee arthroplasty. The introduction into the marketplace of so-called gender-specific total knee components has been met with a competing mix of interest and skepticism among surgeons, while among patients curiosity might be the most appropriate descriptor. This scientific work again highlights the powerful relationship between preoperative variables and postoperative outcomes. These authors rightly highlight the importance of focusing on the change or improvement in preoperative to postoperative outcomes measures and balance that against the absolute scores. Female gender was associated with lower preoperative scores with these outcomes tools so perhaps it is not surprising some of the postoperative scores remain lower than those observed in males. The change or improvement from preoperative to postoperative, however, appears to be similar between males and females after total knee arthroplasty.

The remaining papers in this symposium are grouped to include new information regarding total knee surgical technique, gender-related issues in technique and outcome,

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computer navigation, patellar resurfacing, total knee materials and design issues and revision total knee concerns. As surgeons we have specific interest in improving our intraoperative skills. In this symposium there is information on a method to determine rotational position of total knee components, data on the impact of a ligament balancing technique on the rate of lateral retinacular release, and the introduction of an extramedullary femoral referencing system to facilitate less invasive surgery. Gender-related issues are addressed in a series of papers that look at both documenting physical measurement differences in knee anatomy and then measuring outcomes differences. While little doubt exists that gender-associated differences can be measured, what remains to be determined is the clinical importance of such findings, and in that area we collectively still have work to do.

While it appears that the initial wave of enthusiasm for computer navigation in total knee arthroplasty has crested, we are now at a point where more definitive scientific data are emerging regarding the benefits and drawbacks to this particular technology. Two of the implicit promises of computer navigation have been that it may make the

occasional knee surgeon more like the expert surgeon, and that a navigation system can be the eye that facilitates accurate minimally invasive surgery. In this symposium there are scientific data that cast some doubt on promise number two, and all of us in the scientific community continue to look for evidence that navigation is reproducibly accurate when used by the occasional knee surgeon. The added costs of this technology is an issue yet to be addressed.

Revision TKA is an area of ascending importance as the demographics of our population point to a growing need in this area. In this Symposium there are useful data on the outcomes differences between primary and revision TKA, comparative data on in-hospital complications between primary and revision TKA, isolated patellar revision, patellar bone loss problems and the use of stems in conjunction with constrained condylar knee designs.

The Knee Society remains committed to advancing scientific knowledge and educating clinicians worldwide regarding surgery of the knee. We hope that our readers find this Symposium to be intellectually rigorous and clinically useful.