

## ***CORR* Insights®: Bariatric Orthopaedics: Total Knee Arthroplasty in Super-obese Patients (BMI > 50 kg/m<sup>2</sup>). Survivorship and Complications**

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Received: 18 July 2013 / Accepted: 31 July 2013 / Published online: 9 August 2013  
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### **Where Are We Now?**

A Workgroup of the American Association of Hip and Knee Surgeons recently published an evidence-based review of obesity and total joint arthroplasty (TJA) [1]. This well-designed literature review clearly outlines the proportions of this epidemic, and the data presented, frankly, are staggering. The article points out that more than half of patients currently undergoing TJA are obese, and this number is likely to increase. Numerous studies are cited demonstrating obesity to be related to early development of aseptic loosening and infection [2–4, 6–9], as well as poorer functional outcomes following TKA [5, 10, 11]. The Workgroup concluded that compared to a normal-weight population, the degree of functional improvement among obese patients following

TJA is smaller than observed in nonobese populations, and that the risks of surgery in this patient population may outweigh the benefits, particularly for the morbidly (BMI > 40) and super-obese (BMI > 50).

### **Where Do We Need to Go?**

The present study by Mont et al. is an important step toward an improved understanding of the complex relationship between obesity and TJA. The “super-obese” are a particularly challenging subset of patients, both from a medical and technical standpoint, and as shown in this review, the results of TKA in this group can be inconsistent. The authors of this multicenter study point out that while the risks of aseptic loosening and implant failure appeared not to increase in the super-obese group, the super-obese patients demonstrated less improvement in functional results and higher rates of medical and surgical complications. This finding perhaps underscores our current level of understanding of the relationship between obesity and TKA: while knee arthroplasty is an effective treatment for end-stage arthritis, the question remains, at what cost? In light of the varied literature, there are many important questions currently left unanswered: (1) Can we improve upon BMI and develop a more “arthroplasty-appropriate” measure of obesity? Such a classification system would not only account for height and weight, but may also include distribution of weight, depth of fat at the surgical site, and joint-specific mobility and functional limitations. Such a definition may allow us to detect differences that perhaps go unnoticed with the less-specific BMI. (2) Does improvement of medical comorbidities independent of obesity prior to surgical intervention result

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*This CORR Insights® is a commentary on the article “Bariatric Orthopaedics: Total Knee Arthroplasty in Super-obese Patients (BMI > 50 kg/m<sup>2</sup>). Survivorship and Complications” by Mont and colleagues available at: DOI: 10.1007/s11999-013-3154-9.*

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This *CORR* Insights® comment refers to the article available at DOI: 10.1007/s11999-013-3154-9.

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in improved outcomes or reduction in complications? (3) How do we communicate our concerns to our patients in a nonthreatening, productive manner that will lead either to the patient losing weight and addressing his/her related comorbidities, or that may result in the super-obese patient opting out of the procedure altogether? (4) Do factors exist that would allow us to identify patients likely to be receptive to and/or benefit from our efforts to address their obesity? (5) If we are to refuse arthroplasty to morbidly obese patients based upon the previously cited literature, what alternatives can we offer? These patients are frequently in severe pain, and in the absence of conventional treatment, will likely seek unconventional treatment elsewhere.

### How Do We Get There?

Well-designed prospective studies with clearly defined treatment groups that control for medical comorbidities and other risk factors would be a welcome addition to a topic now lacking in Level 1 evidence. A clear definition of “orthopaedic obesity,” and perhaps even a joint-specific definition, is needed. This could be established through continued examination of existing retrospective data similar to that presented by the current study. Once established, this new definition should be used to create a clear consensus on the question of “how big is too big?” Finally, we should embrace the reality that this is a growing problem, and that obese patients are often looking to us not only as their surgeons, but also as their physicians. We should establish open lines of communication with our medical and surgical colleagues experienced in the treatment of bariatric patients, in order to generate a rational risk-benefit analysis. We should identify subsets of patients who are able to play an active role in their own care, specifically those who have the ability to improve their risk profiles. As quality and outcome measures become more widely utilized in the current healthcare environment, it is

vital that orthopaedic surgeons act as leaders in the effort toward an improved understanding of the association between obesity and complications after TJA.

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