Knee Dislocations More Common And More Expensive In The Obese

By Ruth Kava — November 14, 2017

Apparently little attention has been paid to the risk of knee dislocation and vascular damage in obese and morbidly obese people, according to Dr. Christopher T. Born from the Warren Alpert Medical School of Brown University and colleagues. These investigators therefore analyzed data from the Nationwide Inpatient Sample (NIS) database from the years 2000 to 2012. They were particularly interested in the length of hospital stay after a knee dislocation, as well as the charges for those stays in obese, morbidly obese, and normal weight patients. Results of their study appear in the Journal of Orthopaedic Trauma.

To be clear, the dislocations they were investigating were so-called 'low energy' injuries — those that would result from accidents like falling and landing on one's knee or knees, not those that would result from a car or motorcycle accident. Damage from such injuries can go beyond that involving the joint itself. For example, if the popliteal artery (that runs behind the knee) is damaged and a clot forms, blood flow to the leg can be compromised. If the blockage persists long enough, it could lead to amputation of the limb.

During the 13 years from 2000-2012, there were about 19,100 knee dislocations, and nearly 12 percent of them were in people who were obese or morbidly obese. And the rate of obesity in people who had these low energy knee dislocations was about 3.4 percent in 2000, but increased to 10.2 percent by 2012. Similar increases were seen in those with morbid obesity — from 4.5 to 9.1 percent between 2000 and 2012.

Patients with knee dislocations who also suffered a vascular injury that required medical attention was about 5 percent, 7.5 percent and 9.8 percent in the normal weight, obese and morbidly obese patients. The risk of suffering such an injury was increased by about 77 percent in the obese as
compared to normal weight patients. For morbidly obese patients, the increase compared to non-obese patients was 129 percent.

Both classes of obese patients spent similar amounts of time in the hospital after a knee dislocation compared to normal weight patients: 8.5 vs 7.7 days, a difference which was not statistically significant. However, on average the charge for obese and morbidly obese patients was $72,608, while that of normal weight people was $63,138 — this difference was significant.

Having a vascular injury that necessitated intervention was the factor that made the most difference in the length of hospital stay. Without such an injury, the length of stay was 7 days, while a vascular injury resulted in an average stay of 15 days. This also made a big difference in the cost of hospitalization: $60,000 for those without such an injury compared to $131,500 for those with one.

Vascular injuries also increased the likelihood of limb amputation — from 1.3 percent to 9.7 percent.

Thus obesity and morbid obesity increased the risk of vascular injuries resulting from knee dislocations, and vascular injuries in turn greatly increased the length of hospital stays and the cost of hospital care.

As the authors noted, this was retrospective study, and they were not able to get information on factors such as smoking history and diabetes, which could also affect the probability that a person might suffer a vascular injury after a knee dislocation.

Although the point of this study was to inform surgeons who might be evaluating these patients, it is also yet another aspect of the possible health effects of obesity and morbid obesity to consider. And yet another reason to avoid becoming or remaining obese.