Bariatric surgery before joint replacement can improve outcomes in obese patients

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Emily Dodwell, MD. Credit: Hospital for Special Surgery

Obesity is not only a risk factor for developing knee and hip arthritis. It is also linked to less favorable outcomes after joint replacement surgery. Two new studies at Hospital for Special Surgery (HSS) in New York

City find that bariatric surgery prior to joint replacement is a cost-effective option to improve outcomes after hip or knee replacement.

The research was presented at the annual meeting of the American Academy of Orthopaedic Surgeons in Las Vegas. One HSS study looks at the costs and benefits of weight-loss surgery prior to knee replacement , and the other analyzes the costs and benefits before hip replacement.

"Up to 50 percent of hip replacements are performed in obese patients at some institutions," said Emily Dodwell, MD, an orthopedic surgeon at HSS and lead investigator. "Obesity is associated with longer hospital stays, higher overall costs and higher failure rates, necessitating costly revision surgery."

It is well-known that obesity takes a toll on one's health. Bariatric surgery and subsequent weight loss reduces the risk of heart disease, diabetes and even some forms of cancer. But the effect of bariatric surgery on joint replacement outcomes was not known, and this is what HSS investigators set out to determine.

"We know that bariatric surgery is a cost-effective intervention for morbid obesity," said Alexander McLawhorn, MD, a chief orthopedic surgery resident at HSS and study author. "Yet, the cost-effectiveness of bariatric surgery to achieve weight loss prior to joint replacement and thus decrease the associated complications and costs in morbidly obese patients was unknown."

Investigators used a sophisticated computer software program to compare the cost-utility of two treatment protocols for patients who were considered morbidly obese and had advanced knee or hip osteoarthritis. One group had joint replacement immediately, without losing weight. The other group had bariatric surgery, followed by hip or knee replacement two years later. Patients typically lose weight during

this time period.

"For the study, we chose a decision analysis design because we could use a mathematical model to simulate the outcomes and costs of each treatment path based on results and costs that have already been published in the literature," Dr. Dodwell explained.

Study patients had a BMI of at least 40, or a BMI of 35 or higher and at least one other serious obesity-related health problem. Normal BMI is 18.5 to 24.9. For study purposes, researchers assumed that at least one-third of patients having bariatric surgery lost their excess weight prior to undergoing joint replacement.

"Our findings indicate that surgical weight loss prior to joint replacement is likely a cost-effective option from a public payer standpoint in order to improve outcomes in obese patients who are candidates for joint replacement," Dr. Dodwell said. "Some health care systems do not include weight loss surgery as a covered benefit, and it is possible that studies such as this will be helpful in re-evaluating whether weight loss surgery may be a reasonable covered benefit."

Dr. McLawhorn notes that for some patients experiencing severe knee or hip pain, it may be impractical to hold off on joint replacement. He adds that many times, an orthopedic surgeon is the first doctor such a patient sees for arthritis pain.

"Ideally, a team approach would be used to treat morbidly obese patients with hip and knee arthritis in which various health care professionals are in place to help a patient lose weight, improve his or her health, and optimize nutrition before joint replacement to maximize its benefits," he said.

More information: Cost-Effectiveness of Bariatric Surgery Prior to

Total Knee Arthroplasty in the Morbidly Obese, 2015 annual meeting of the American Academy of Orthopaedic Surgeons in Las Vegas

Cost-Effectiveness of Bariatric Surgery Prior to Total Hip Arthroplasty in Morbidly Obese Patients, 2015 annual meeting of the American Academy of Orthopaedic Surgeons in Las Vegas

Provided by Hospital for Special Surgery