

For Immediate Release:
March 22, 2022 at 12:01 a.m. CT

Depressive disorder may hinder healing in patients undergoing reverse shoulder arthroplasty
New research shows increased medical complications, hospital stays, and costs

CHICAGO (March 22, 2022)—Depressive disorder (DD) is associated with longer in-hospital length of stay (LOS), higher rates of medical complications, and increased healthcare costs for patients undergoing reverse shoulder arthroplasty (RSA) for the treatment of glenohumeral osteoarthritis (OA), according to a large-scale study presented at the 2022 Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS). While current studies have shown DD to be linked to higher complications following shoulder arthroplasty, the effects of depression on primary RSA have not been studied as extensively.

“Mental health and how it affects patients has become a greater area of concern for healthcare professionals,” said Keith Diamond, MD, orthopaedic surgery resident, Maimonides Medical Center, Brooklyn, N.Y. “RSA aims to improve the functionality of the shoulder; however, mental health can have a great effect on the outcomes. There were several significant outcomes of this study, including increased LOS and cost, that demonstrate a need to educate patients when considering primary RSA.”

National Prevalence and Burden of Depression

Depression is one of the most common mental health disorders in the United States and has increased over the last two decades. Approximately 21 million adults had at least one major depression episode in 2020, according to the National Institute of Mental Health. Studies have shown that DD can lead to poor health, mortality, and substance abuse, and there is an established link between DD and negative outcomes for patients undergoing shoulder arthroplasty.

DD Impact on Primary RSA Outcomes

OA is the most common form of arthritis to affect the shoulder, commonly referred to as [glenohumeral OA](#) or shoulder OA. As the numbers of those affected by glenohumeral OA has risen, so have total shoulder arthroplasty procedures. From 1993 to 2007, there was a 248% increase, with RSA accounting for 42% of total shoulder arthroplasty procedures performed during that timeframe.

Previous studies showed a link between DD and adverse outcomes. However, those studies grouped all shoulder arthroplasty procedures together or did not look at RSA, leading to less understanding of DD on primary RSA outcomes for shoulder OA.

Using a private payor database, the research team conducted a retrospective query from Jan. 1, 2010, to Oct. 31, 2020, of patients who underwent primary RSA for the treatment of glenohumeral OA with DD. Patients who underwent the same procedure but did not have depression served as the comparison cohort. A total of 28,410 patients were utilized for the study — 4,084 in the study cohort and 24,326 in the comparison cohort.

Depression was found to significantly impact the outcomes of patients undergoing primary RSA for shoulder OA, including:

- The study group had significantly longer in-hospital stays (3 vs. 2 days).
- DD patients had higher frequency and odds (47.40 vs. 14.67%) of developing complications after RSA. Complications included pneumonia (10.04 vs. 1.79%), cerebrovascular accidents (i.e., heart attack, stroke) (3.13 vs. 0.72%), myocardial infarctions (1.98 vs. 0.43%), venous thromboembolism (2.15 vs. 0.55%), acute kidney injuries (11.17 vs. 2.32%), transfusion of blood products (4.39 vs. 1.20%), and surgical site infections (4.38 vs. 2.35%).
- Significantly higher costs of care were associated with patients who were in the depressive disorder group (\$19,363.10 vs. \$17,927.55).

“It is important for surgeons and patients to be aware of the patient’s mental state before surgery,” said fellow investigator and Chicago orthopaedic surgeon Anthony A. Romeo, MD, FAAOS. “Screening should be a part of preoperative care. If a patient’s depression is not well controlled, they may want to delay surgery until it is. Unfortunately, some parts of the depressive disorder may be directly related to the pain and impairment of the shoulder arthritis, inhibiting a good response to the preoperative treatment. Additionally, a patient’s mental state may be in a good place before RSA, but post-op, they could have pain and limited mobility, which can affect their depression. It is equally important to consider methods to assess and guide treatment for mental health as a part of the postoperative care plan for patients with DD.”

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2022 AAOS Annual Meeting Disclosure Statement

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