RIGOROUS STUDY POINTS TO SIMPLE AND LESS INVASIVE INTERVENTION TO REDUCE COMMON COMPLICATION IN CERVICAL SPINE SURGERY PATIENTS

ORLANDO, FL—A simple and minimally invasive delivery method for a debated medicine may be the key to reducing a common cervical spine surgical complication, according to a “Best Paper” shared at the 32nd Annual Meeting of the North American Spine Society (NASS).

Anterior cervical discectomy and fusion (ACDF) is a common surgical approach for treating cervical spine pathology. It involves removing a damaged disc in the patient’s neck to relieve spinal cord or nerve root pressure and alleviate corresponding pain, weakness, numbness and tingling. By far the most common complication following ACDF surgery is difficulty with swallowing, medically known as “dysphagia.” This condition usually resolves within days, but there is a risk that it can last weeks to months. On rare occasion, the dysphagia can be permanent.

“This is one of the first randomized controlled trials conducted in a double-blinded fashion that is examining the effectiveness of local intraoperative steroids (LICs) on reducing postoperative dysphagia,” said Daniel Stein, BS, a study co-author. “This study shows promising early results that the application of LICs through a hemostatic-matrix can be used to reduce dysphagia following ACDFs.” A hemostatic-matrix is a substance often administered during surgery to help control blood loss.

To date, there has been debate in the literature regarding the effectiveness and delivery mechanism of LICs in reducing postoperative dysphagia. This study aimed to evaluate the effectiveness of LIC in decreasing the severity of swallowing difficulty following ACDF and the delivery mechanism.

The study, “Does Local Intraoperative Corticosteroids Delivered in a Hemostatic-Matrix Minimize Dysphagia Following Anterior Discectomy and Fusion (ACDF)? A Preliminary Analysis of a Double Blinded Randomized Controlled Trial (RCT),” is a clinical trial of 59 adult patients who had primary multilevel ACDF surgery (2-4 levels) at a single institution.

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The outcome measures used were the Eating Assessment Tool (Eat-10, standard and modified), SWAL-QOL, and the Bazaz score. Arm S (steroid) received 1 ml (40 mg) of methylprednisolone delivered with an absorbable hemostatic matrix (vehicle) to the retro-esophageal space prior to closure. The control arm (C) only received the vehicle prior to closure.

Dysphagia-specific patient-reported outcomes (PROs) were collected preoperatively, and at day 1 (POD1), day 2 (POD2), and 1 month (M1) postoperatively. A Mann-Whitney U test was performed to compare the median change in the PRO scores (S vs C) from baseline to each postoperative time point. Patients in the S arm (37% with >2 level fusion; 57% male), and 29 patients in the C arm (52% with >2 level fusion, 2 corpectomy; 66% male). The C arm population had a higher BMI (31.7±6 vs 28.4±5.6, p=.03), longer OR time (158±42 vs 132.6±40, p=.02), and rated their baseline neck (5.9±2.5 vs 3.77±2.8, p<0.01) and right arm (3.82±3.2 vs 1.48±2.2, p=.002) pain higher on visual pain scales. At baseline, patients in the S and C arms had similar scores on all dysphagia PROs.

Pre- and postoperative comparison of the SWAL-QOL domains found that C arm patients had a worsening of Burden at POD2 (-37.5 [-75--12.5] vs -18.75 [-46.9--0], p=.049), Fear at POD1 (-9.4 [-29.7--0] vs 0 [-17.2--0], p=.05), Fear at POD2 (-12.5 [-43.8--3.1] vs 0 [-18.8--0], p=.032), Fear at M1 (-6.3 [-12.5--0] vs 0 [0--0], p=.046), Mental Health at POD1 (-30 [-50--0] vs 0 [-18.8--0], p=.027), Food Selection at POD2 (-50[-75--0] vs 0.0[-46.9--0], p=.034), Eating Duration at M1 (-12.5[-25--0] vs 0.0[-12.5--0], p=.001). C arm patients also had a larger increase in the standard total Eat-10 score at M1 (5.0[0--10] vs 0.0 [0--4.25], p=.021). Due to the irrelevancy of the first two questions of the Eat-10 in the first 48 hours postoperative, a modified EAT-10 total score (ME10) was calculated for inpatient stay (ME10= sum of remaining 8 questions). Pre- and postoperative analysis of the ME10 score for POD1 & 2 found that patients in the C arm had a larger increase in ME10 score at POD1 (15.5 [7.25--20] vs 7 [3.25--15], p=.043). No significant differences in major postoperative complications or Bazaz scores were identified at any time point.

The study authors are: Daniel Stein, BS; Han Jo Kim, MD; Darren R. Lebl, MD; Russel C. Huang, MD; Shari T. Jawetz, MD; Virginie Lafage, PhD; Todd J. Albert, MD of the Hospital for Special Surgery, New York, NY.

The NASS 2017 Disclosure Index can be found on pages 168-188 of the final program.

More than 3,000 spine professionals will meet at the NASS 32nd Annual Meeting in Orlando, October 25-28, 2017 at the Orange County Convention Center to share the latest information, innovative techniques and procedures, best practices and new technologies in the spine field. NASS is a multidisciplinary medical organization dedicated to fostering the highest quality, evidenced-based and ethical spine care by promoting education, research and advocacy. NASS is comprised of more than 8,000 members from several disciplines, including orthopedic surgery, neurosurgery, physiatry, neurology, radiology, anesthesiology, research and physical therapy. For more information, visit www.spine.org and find NASS on: NASS Facebook and NASS Twitter.

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