Primary and secondary glioblastomas harbor distinct forms of “driver” fusion transcripts.

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Surgical Site Infections in Standalone Lateral Interbody Fusion: Analysis of a Prospective, Multi-center Patient Outcomes Registry

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INTRODUCTION: Surgical site infections (SSI) following lumbar spinal fusion procedures are associated with extended hospital stays, increased complications, and lower patient outcome satisfaction. Additionally, hospitals can face stiff financial penalties from CMS for increased rates of SSI. Modern minimally invasive approaches for anterior interbody fusion (XLIF) were developed to minimize approach-related morbidity compared to direct anterior and conventional posterior approaches, the latter of which are associated with infection rates from 2.7% to as high as 10.9%. The aim of this study is to evaluate infection rates following XLIF in those patients with and without supplemental internal fixation.

METHODS: A total of 994 patients treated with XLIF from T12-L1 to L5-S1 (619 with supplemental internal fixation, 375 standalone) were evaluated and included in the analysis. On average, patients were treated at fewer levels in the standalone versus fixated group (mean 1.7 versus 2.1 levels).

RESULTS: A total of nine (9) surgical site infections were reported in 994 XLIF patients (0.9%), with no significant differences between standalone and fixation (0.8% and 1% respectively, P = 1.00). The standalone group had two superficial infections, which only extended the post-operative length of stay. The supplemental fixation group had two infections from posterior instrumentations and three superficial infections, all of which only required longer hospitalization. Additionally, there were two deep wound infections, one in each cohort, that required I&D. No patients suffered long-term consequences.

CONCLUSION: Infections following XLIF were rare (<1%) in a relatively large, multi-centric experience and did not vary with use of supplemental fixation. Compared to previously reported outcomes in the anterior and posterior approach, XLIF is associated with decreased rates of infection, thereby reducing harm to the patient and cost to the hospital.

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Pilot Study for Evaluating Clinical Outcome and Socioeconomic Value of a Novel Integrative Healing Services Approach to Neurosurgery Inpatients

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INTRODUCTION: Neurosurgery inpatients are oftentimes critically ill and are admitted for a variety of pathologies. They face significant stress, post-operative pain, and/or emotional distress due to their underlying condition. As a result, decreased patient satisfaction, increased post-surgical pain, and increased hospital stays are not uncommon. This study aims to characterize and evaluate Integrative Healing Services (IHS) in decreasing postoperative pain and stress, and improving patient mobility, independence level, and satisfaction.

METHODS: From June-September 2016, an Integrative Healing Services team was developed (e.g. acupuncture, healing touch, music therapy, pet therapy, and counseling) and incorporated into the treatment regimen of neurosurgery inpatients with chronic or intractable pain, stress or depression, and/or patients who refused or failed physical or occupational therapy. Patients with greater than ten days of inpatient stay were included in this study. Patients completed baseline questionnaires before and after undergoing IHS intervention.

RESULTS: 37 charts were retrospectively reviewed, with 17 patients receiving IHS (11 cranial and 6 spine cases), and 20 age-matched controls receiving standard of care (10 cranial and 10 spine patients). Overall, 71% (12/17) of patients had a reduction in pain medication consumption, with 55% (6/11) of cranial and 100% (6/6) of spine patients reporting a reduction. The average pre-treatment pain-scale score was 5.5 out of 10 across all patients, while the average post-treatment pain-scale score was 3 out of 10 (p < .01), 59% of patients had improved mobility. The average decrease in the post-level of assistance was 15% across all patients (p < .05), and 11% and 21% in the cranial and spine groups, respectively. 65% of all patients, 64% of cranial, and 67% of spine patients demonstrated improved independence levels with physical therapy. The average length of stay in the experimental group was 12.6 days, and 19.8 days in the control group (range 5–45) (P < .01).

CONCLUSION: IHS intervention is effective in improving the healing process of neurosurgery inpatients, increasing satisfaction, and decreasing hospital stay.

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Factors that Predict Surgical Candidacy in Degenerative Spine Diseases: a Clinical Prediction Model

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INTRODUCTION: Referrals to spine surgeons typically have low surgical yields between 10–20%. In this study, pre-operative patient variables predictive of patients being offered surgery for degenerative spine diseases were examined.

METHODS: We performed retrospective analysis of prospectively collected data of patients referred to the spine clinic at Foothills Medical Centre, Calgary, Canada between May 2013 and January 2015. Variables collected include basic patient demographics, presenting symptoms, SF-12, perceived deficit questionnaire, McGill pain index, Charlson Co-morbidity index, VAS, alleviating/aggravating factors, medications, occupational variables and previous surgeries/injections were collected. A multivariate logistical regression using the Random Forest method was used to determine the odds of being offered surgery or not based on pre-operative variables.

RESULTS: 1184 patients were included in the analysis. The multivariate logistical regression showed factors that reduce the likelihood of surgery being offered include mild pain (OR 0.37), normal walking distance (OR 0.51), sitting tolerance of 30–60 min (OR 0.58). Factors that increased likelihood of surgery being offered include radiolucent graft (OR 2.0), walking distance <50ft (OR 1.9), Relief when bending forward (OR 1.7) and sitting (OR 1.6), aggravation of symptoms by valsalva (OR 1.44), pain affects sit/stand (OR 1.1). The model’s overall accuracy was 75% with a negative predictive value of 77% and positive predictive value of 50%.