Perspective

iMedPub Journals
www.imedpub.com

Medical & Clinical Reviews
ISSN 2471-299X

2024
Vol.10 No.5:72

Neurosurgery and Orthopedic Spine Consultations at a Trauma Center

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Received date: September 17, 2024, Manuscript No. IPMCR-24-20026; **Editor assigned date:** September 20, 2024, PreQC No. IPMCR-24-20026 (PQ); **Reviewed date:** October 04, 2024, QC No. IPMCR-24-20026; **Revised date:** October 11, 2024, Manuscript No. IPMCR-24-20026 (R); **Published date:** October 18, 2024, DOI: 10.36648/2471-299X.10.5.72

Citation: Sargent J (2024) Neurosurgery and Orthopedic Spine Consultations at a Trauma Center. Med Clin Rev Vol.10 No.5: 72.

Description

Spine surgery is performed by both Orthopedic Surgery (OS) and Neurosurgery (NS). It is uncertain, nevertheless, if the results vary among these disciplines. With the assumption of comparable operation rates, Lengths of Stay (LOS) and readmissions, this study evaluates the management and results for spinal fractures between NS and OS. Specialists in Neurosurgery (NS) or Orthopedic Surgery (OS) are largely responsible for managing spine injuries, which afflict 1%-6% of trauma patients in the United States. There are differences in their experience with spinal surgery, even though both disciplines demand at least five years of surgical training. NS residents perform a disproportionately high number of spine procedures and collect a much higher number of surgical hours than OS residents. Assessments of skill between NS and OS practitioners show similarities in addressing spinal pathologies and post-operative problems, despite the fact that NS residents have greater confidence in performing spine procedures. Variations in methods and diagnostic methodologies result from the two disciplines' divergent clinical decision-making, surgical interventions and outcomes.

Spine consultation comparison

Both NS and OS specialists alternate spine surgery calls at our Level-I trauma center and similar care standards and results for catastrophic spinal injuries have been noted. This study is to examine the variations in therapy, surgical techniques and results for vertebral body fractures treated by OS versus NS experts, despite the lack of clinical data on traumatic spinal injuries in the US. In treating traumatic vertebral body fractures, this study postulates similar rates of surgeries, Length of Stay (LOS) and readmissions between the two specializations. This was carried out in accordance with the declaration of Helsinki's tenets. Then, at a single urban academic level-I trauma hospital, a retrospective analysis was conducted among trauma patients who were 18 years of age or older and had cervical, thoracic, lumbar and sacral spinal fractures. An attending radiologist used diagnostic imaging investigations, such as Computed Tomography (CT) imaging, which is standard imaging for all adult patients with spine fractures at our institution, to determine the number of fractures and the precise type of fracture. The therapeutic method across both services was not governed by any recognized protocol or guidelines at the time of our investigation, such as the Arbeitsgemeinschaft für Osteosynthesefragen (AO) spine classification system and or the Thoracolumbar Injury Classification and Severity Score System (TLICS). As a result, the attending surgeon used their clinical judgment and the presentation of each patient to choose the course of treatment. Patients who underwent OS spine consultation and those who obtained NS consultation were contrasted. Patients who were seen by both agencies for spine-related consultations were not included. All of these patients were treated by OS and had complicated pelvic fractures. Body Mass Index (BMI), age and self-reported sex were among the demographic information gathered. Chronic obstructive pulmonary disease, cirrhosis, end-stage renal disease, myocardial infarction, hypertension, diabetes, congestive heart failure, coronary artery disease, cerebrovascular accident, psychiatric illness and prior spinal injury or surgery were among the comorbidities. The mechanism of injury, the number of fractures, the location of the fractures, the type of fracture (such as compression, burst, burst or compression, unilateral and bilateral facet, perched and jumped), the Injury Severity Score (ISS), the spine's Abbreviated Injury Scale (AIS) and the existence of neurological deficit were all used to describe the injury profile.

Clinical outcome comparison

The usage of supportive braces and the particular diagnostic imaging modality (MRI, CT, or X-ray) were among the clinical variables that were examined. Vertebral level of injury, operating approach (e.g., anterior or posterior), graft material, time to surgery and total operative time in hours were among the surgical details gathered. In-hospital mortality, Intensive Care Unit (ICU), Length of Stay (LOS), discharge disposition (home, Skilled Nursing Facility (SNF), acute rehabilitation unit and long-term acute care facility), readmission to the hospital ED but not readmission, operating room return and post-operative complications were among the other outcomes gathered. Hemorrhage, surgical site infection, pulmonary embolism, deep vein thrombosis, sepsis, pneumonia and acute respiratory distress syndrome were among the problems that were measured. Results were assessed using an electronic evaluation of medical records both during the hospital stay and 30 days following release. Every variable was subjected to descriptive statistics. A chi-square test was used to compare categorical variables and a Mann-Whitney-U test was used to evaluate

continuous variables. Continuous data were presented as medians with interquartile range, whereas categorical data were presented as percentages. Every p-value has two sides, with IBM SPSS Statistics for Windows (Version 24, IBM Corp., Armonk, NY) was used for the analysis.