Enhanced recovery after surgery (ERAS) improves postoperative mobilization and ambulation in elective spinal and peripheral nerve surgery

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• None
Introduction

• ERAS engages all health care providers in a longitudinal fashion to reduce the dramatic stress response to surgery

• A neurosurgical ERAS optimizes the pre-, peri-, and post-operative care of patients

• No reports of a comprehensive ERAS pathway exists for elective spinal and peripheral nerve surgery
Methods

• Prospective, cohort analysis study of patients at a single institution undergoing elective spine or peripheral nerve surgery by the same attending neurosurgeons (Z.A., A.O., W.W.) prior to ERAS implementation (September to December 2016) and after ERAS implementation (April to June 2017)

• Inclusion criteria: age over 18, ability to understand and actively participate in program, clinical history and diagnostic imaging supporting need for elective spine or peripheral nerve surgery

• Exclusion criteria: contraindications to elective spine or peripheral nerve surgery, diagnosis of liver disease, pregnancy, emergency cases
Historical cohort vs. ERAS group:
post-operative mobilization and ambulation

<table>
<thead>
<tr>
<th>Historical cohort (control) (n=74)</th>
<th>ERAS group (n=201)</th>
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<tbody>
<tr>
<td>No formal post-operative mobilization or ambulation plan</td>
<td>Nurses assist the patient in getting out of bed within 6 hours from surgery</td>
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<td>Nurses ambulate patients 3-5 times daily beginning post-operative day 1*</td>
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<td>Nurses assist patients to have all meals out of bed and in a chair</td>
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<td>Foley catheter use is limited**</td>
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*Unless bed rest restrictions applied
**Foley use only in patients with intra-operative durotomies or ≥ 3 levels of thoracolumbosacral fusion procedures
Patients

• No differences between 2 groups in age, BMI, gender, smoking status, pre-operative co-morbidities (smoking status, diabetes, COPD), prior spinal surgery, or use of pre-operative narcotics

• Distribution in surgical procedures between groups was similar

• Majority of surgeries performed under general anesthesia
Mobilization and Foley use

- ERAS group demonstrated greater mobilization on day of surgery (53.4% vs. 17.1%, p<0.001) and on the first post-operative day (84.1% vs. 45.7%, p<0.001) as compared to the control group.

- Post-operative Foley use was significantly decreased in the ERAS group (20.4% vs. 47.3%, p<0.001) without an increase in straight catheterization (11.9% vs. 8.1%, p=0.51).
Resources

• ERAS implementation did not increase overall hospital length of stay (3.6 vs. 3.9 days, \(p=0.46\)) or ICU admission (12.4% vs. 14.9%, \(p=0.69\))

• Discharge to post-acute care facility trended to be less in ERAS group (11.4% vs. 20.3%, \(p=0.09\))
Conclusion

- ERAS engages each component of the patient’s surgical journey
- ERAS improves outcomes in a multi-disciplinary, multi-modal approach
- ERAS is safe and feasible in elective spinal and peripheral nerve surgery
- ERAS improves post-operative mobilization and ambulation