Clinical Practice Panel: Stand by Me: Using an Enhanced Recovery After Surgery (ERAS) Checklist to Guide Early Mobility of Postoperative Craniotomy Patients on a Progressive Care Unit

Alyssa Mooney
Jerome Codilla
Joanna Arraiza
Sohl Chapman
Nkiru Chukwudi

See next page for additional authors

Follow this and additional works at: https://digitalcommons.psjhealth.org/south_division_nursing_conference_23

Part of the Critical Care Commons, Neurology Commons, Perioperative, Operating Room and Surgical Nursing Commons, and the Surgery Commons
Authors
Alyssa Mooney, Jerome Codilla, Joanna Arraiza, Sohl Chapman, Nkiru Chukwudi, and Ronald Rosales
Stand by Me: Using an Enhanced Recovery After Surgery (ERAS) Checklist to Guide Early Mobility of Postoperative Craniotomy Patients on a Progressive Care Unit

Alyssa Mooney, MSN, RN, PCCN-CMC; Jerome Codilla, MSN, RN, CCRN, PCCN; Joanna Arriaza, ADN, RN; Sohl Chapman, MSN, RN; Nkiru Chukwudi, MSN, RN; Ronald Rosales, BSN, RN, PCCN

Providence Little Company of Mary Medical Center Torrance
Background and Problem Identification

Craniotomy is a high-risk procedure with high hospitalization cost, high incidence of complications, and long hospital stay.

The standard of care for postoperative care following craniotomies has historically been ICU admission.

Recent literature interrogating complications and interventions during this postoperative ICU stay suggests that all patients may not require ICU level of care.

Developing clinical checklists and associated tools and using them effectively all help to create a culture of safety, one in which all patients receive high-quality, high-reliability, and ever-improving care (Moffatt-Bruce et al., 2017).
Pacific Neuroscience Institute South Bay Neurosurgery

Table 1 Pacific Neuroscience Institute South Bay Neurosurgical Case Report 2022
Major reductions in hospital length of stay (LOS), care costs, and postoperative pain as well as overall complications can be achieved through the application of protocols for enhanced recovery (Stumpo et al., 2021).
What is Enhanced Recovery After Surgery (ERAS)?

- A multimodal perioperative care pathway designed to achieve early recovery for patients undergoing major surgery.
- First proposed by Kehlet (1997) and is now widely used in various surgeries.
- Patient-centered and evidence-based.
- Reduce the patient’s surgical stress response, optimize their physiologic function, and facilitate recovery.
**Literature Review**

### Enhanced recovery after surgery - ERAS in elective craniotomies-a non-randomized controlled trial

- (Elayat et al., 2021)
- Adapted the ERAS protocol to a neurosurgical setting
- Feasibility and benefits in early discharge from the ICU
- Better pain and blood sugar control postoperatively

### Early mobilization in neurocritical care patients

- (Kumar et al., 2020)
- Early ICU mobilization in medically critically ill patients
- Decrease ICU and hospital length of stay
- Increase discharge-to-home
- Reduce medical costs

### The benefits of implementing an early mobility protocol in postoperative neurosurgical spine patients

- (Rupich et al., 2018)
- Quality improvement initiative in a neuroscience and orthopedics unit
- 9-hour reduction in LOS in neurosurgical spine patients who underwent lumbar laminectomies
- Allowed nurses more autonomy in patient care.
- Catalyst for patient involvement in their postoperative mobility

### Enhanced recovery after surgery strategies for elective craniotomy: A systematic review

- (Stumpp et al., 2021)
- Systematic literature review
- Application of protocols for enhanced recovery
- Major reductions in hospital length of stay (LOS), care costs, postoperative pain, and opioid consumption

---

Stand by Me: Using an Enhanced Recovery After Surgery (ERAS) Checklist to Guide Early Mobility of Postoperative Craniotomy Patients on a Progressive Care Unit
Purpose/Aim

Purpose:
• To develop, implement, and evaluate the effectiveness of an Enhanced Recovery After Surgery (ERAS) checklist on elective postoperative craniotomy patients in the progressive care unit (PCU).

Aim:
• Increase the average number of patients ambulating during the first 24 hours of their postoperative stay in the PCU by 80%.
• Decrease overall hospital length of stay (LOS) within a 12-week study period.
• Educate and empower nursing staff to initiate the ERAS protocol independently and incorporate it in their practice.
Methods/Approach

Quality Improvement Project

Study population and setting:

• Elective post-operative craniotomy patients admitted directly to PCU
• 33-bed Progressive Care Unit
• Providence Little Company of Mary Torrance

Study period:

• 12-week period (July 1, 2022, to September 30, 2022)
Stand by Me: Using an Enhanced Recovery After Surgery (ERAS) Checklist to Guide Early Mobility of Postoperative Craniotomy Patients on a Progressive Care Unit

### Pre-implementation

ERAS Checklist was created.

### Post-Op Day 0

- Release all orders upon arrival to floor.
- Neuro checks Q2H until PM rounding and will decrease to Q4H to allow for sleep.
- Assess incision site with neuro checks.
- Ensure that the around-the-clock Tylenol/Ibuprofen are given as scheduled and maintain cold therapy to incision site to reduce the need for narcotics.
- If SBP is elevated above ordered parameters, notify MD/NP/PA for medication orders if not in signed/held (if Nicardipine wasn’t started in PACU).
- Mobility orders will be in place and PT/OT will be ordered. Perform a Quick Mobility Screen and ambulate the patient ASAP. PT/OT clearance is not needed to ambulate the patient and they may be unable to evaluate the patient the same day.
- If there is a concern, assist patient with standing, marching in place, performing leg pumps, etc. and continue to stimulate them. If family is in the room, involve them to help encourage and motivate the patient to ambulate.
- If the patient is still groggy and unable to mobilize or refuses, notify the neurosurgery team.
- Patient should only be in bed while napping/sleeping.
- Does the patient have any special needs (HD, pacemaker turned off for MRI)?
- Any anticipated DC needs? Try to address early.
- Post-op imaging (MRI, VAS BLLE).

### Post-Op Day 1

- Neuro checks Q4H.
- Assess incision site with neuro checks.
- Ensure that the around-the-clock Tylenol/Ibuprofen are given as scheduled and maintain cold therapy to incision site.
- Continue to mobilize, should only be in bed while napping/sleeping.
- PT/OT
- Clarify any discharge needs and discuss during rounds or directly with case manager.
- Cleared by medical team > Discharge.
- Have patients look in mirror and/or take a picture before they DC so they are aware of what the incision looks like as a baseline.

### Discharge

Follow up appointment in AVS, DC meds from pharmacy, DC teaching.

**EXPECTED**

Be aware of the patient’s presenting symptoms and why they were first evaluated by neurosurgery. They may continue to have those presenting symptoms up to 72 hours post-operatively.

Some nasal drainage/bleeding is expected in the endonasal approach patients. Review orders for drainage collection details if necessary.

**COMPLICATIONS**

Complications are rare but the most common complication is stroke followed by worsening vision. Notify neurosurgical team for any changes in level of consciousness, slurred speech, unilateral numbness or weakness, changes in vision, or changes in balance.

If unsure and/or emergent, call an RRT.
Quick Mobility Screening for Safe Patient Handling

Prior to moving or mobilization, patient screening must be completed.

Every patient,
Every shift,
Every time!

<table>
<thead>
<tr>
<th>Patient Action</th>
<th>Patient Instruction</th>
<th>Mobility Classification</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bed Mobility</strong></td>
<td>“Can you move yourself up / scoot sideways or roll over to the side?” No</td>
<td>Needs Assistance with Bed Mobility</td>
<td>Ceiling Lift with Repositioning Sling Slide tube or sheets &lt; 250 lbs. Air Assisted Transfer Device (Example: HoverMatt &gt;250lbs.)</td>
</tr>
<tr>
<td>Scoot</td>
<td>Continue to seated balance with either yes or no answer.</td>
<td>Max Assistance / Dependent</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seated Balance:</th>
<th>“Can you sit on the edge of the bed by yourself, hands in lap?” - Hold for 10 seconds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Balance</td>
<td>No</td>
</tr>
<tr>
<td>Failed Balance</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sit to Stand:</th>
<th>Gait belt on; stand to side of patient. “Can you stand up? Nose over toes.” Caregiver uses less than 35 lbs. of force to assist. May use assistive device: Walker</th>
<th>No</th>
<th>Supervision / Independent</th>
<th>Use Gait Belt with patients who are not Independent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bears weight</td>
<td>Yes</td>
<td>Moderate Assistance</td>
<td>Sit to Stand Device</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standing Balance:</th>
<th>Gait belt on; stand to side of patient. “Can you stand and balance?” 10 seconds Caregiver uses less than 35 lbs. of force to assist. May use assistive device: Walker</th>
<th>No</th>
<th>Minimum Assistance</th>
<th>Stand and Raise Aids</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>Minimum Assistance</td>
<td>Stand and Raise Aids</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>March in Place:</th>
<th>Gait belt on; stand to side of patient. “Can you march in place?” 10 steps May use assistive device.</th>
<th>No</th>
<th>Independent</th>
<th>Supervision / Independent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver assistance required</td>
<td>Caregiver assistance NOT required</td>
<td>Yes</td>
<td>Independent</td>
<td>Supervision / Independent</td>
</tr>
</tbody>
</table>

Stand by Me: Using an Enhanced Recovery After Surgery (ERAS) Checklist to Guide Early Mobility of Postoperative Craniotomy Patients on a Progressive Care Unit
Pre-implementation

Baseline Data Collection

PCU Brain Day (Figure 1 & 2)

Caregiver education on ERAS checklist

Quick Mobility Screening Tool

Inservice on Mobility Equipment, i.e. cardiac chair (Figure 2)

Figure 1 Brain Day

Figure 2 Brain Day

Figure 3 Cardiac Chair
Post-implementation

- Data collection
- Daily chart audits
- Follow-up coaching with caregivers
- Resource binder and ERAS Craniotomy brochure (Figure 1 & 2)

Figure 1

Figure 2
Results

Length of Stay (Table 1)
A total of 50 elective postoperative craniotomy patients were included in the project.

• 24 patients (pre-implementation)
• 26 patients (post-implementation)

Pre-implementation:
• Average LOS = 1.45 DAYS

Post-implementation:
• Average LOS = 0.92 DAY
Results

Pre-implementation (Table 1)
19 of 24 (79%) patients ambulated during the first 24 hours post-craniotomy.

Post-implementation (Table 2)
24 of 26 (92%) patients ambulated during the first 24 hours post-craniotomy.

Table 1 Pre-implementation Mobility

<table>
<thead>
<tr>
<th>24 Hours Post-op Ambulation</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>19</td>
</tr>
</tbody>
</table>

Table 2 Post-implementation Mobility

<table>
<thead>
<tr>
<th>24 Hours Post-op Ambulation</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>24</td>
</tr>
</tbody>
</table>
Conclusion

• This project found an increase in patient ambulation and decrease in LOS.

• Creating and implementing the ERAS checklist was a low cost, high impact way to cultivate multidisciplinary care while improving patient outcomes.
Implication for Practice

• Given the success in early mobility of postoperative craniotomy patients, the ERAS checklist may be utilized on other postoperative populations.

• Future studies should focus on testing nurse-led mobility interventions on other patient care units so higher rates of mobilization and provision of holistic patient care can be achieved.
References


Acknowledgements

Walavan Sivakumar, MD
Catrice Nakamura, MSN, RN, MHA
Lisa Bolash-Lacy, BSN, RN
Trisha Saul, PhD, RN, PMGT-BC
Katie Silva, MSN, RN, CCRN, SCRN
Progressive Care Unit Staff
Questions?

Alyssa Mooney, MSN, RN, PCCN-CMC
• Torrance
• Nurse Leader, Progressive Care Unit
• Alyssa.Mooney@providence.org

Jerome Codilla, MSN, RN, CCRN, PCCN
• Torrance
• Nurse Manager, Progressive Care Unit
• Jerome.Codilla@providence.org

Stand by Me: Using an Enhanced Recovery After Surgery (ERAS) Checklist to Guide Early Mobility of Postoperative Craniotomy Patients on a Progressive Care Unit