AAST PALLIATIVE CARE COMMITTEE

GERIATRIC CERVICAL SPINE FRACTURES: A CLINICAL GUIDE

WHY THESE INJURIES ARE IMPORTANT

- High morbidity and mortality
- Age-related frailty contributes to management decisions
- Spinal canal stenosis increases spinal cord injury (SCI) risk

TREATMENT DECISION-MAKING

When to Consider Operative Management

- Preferred for healthier, active patients
- Treatment decisions require individualized risk-benefit analysis
- Frailty Index >5 show a 37-fold increased complication risk following elective cervical fusion surgery

When to Consider Non-Operative Management

- Options: soft cervical collars (better tolerated but minimal stability), rigid collars, cervicothoracic orthoses, and halo-vest immobilization (increasing stability but higher complication rates)
- Higher treatment failure rates compared to surgery
- No definitive consensus exists on which treatment strategy improves survival

RISK STRATIFICATION & PROGNOSTICATION

Assessing Mortality Risk

- One-year mortality rates: >25%, 36.5% in patients with SCI and 31% without SCI
- Predictors: neurological deficits, polytrauma, poor baseline functional status, dementia, and delirium
- Increased frailty strongly correlates with higher morbidity and in-hospital mortality

Setting Realistic Expectations for Recovery

- Maximum neurological recovery: 6-9 months post-injury (peak gains in first 3 months)
- <20% of patients discharge home
- AIS Grade D injuries or better may achieve functional independence at one year
- Recovery depends on comorbidities, baseline functional capacity, frailty status, and injury severity
- Complete SCI have poor prognosis regardless of treatment

ANTICIPATING & MANAGING COMPLICATIONS

Neurological Complications to Monitor

- Spinal canal stenosis and trauma create ongoing risk for central cord and anterior cord syndrome
- Delayed union may cause delayed myelopathy requiring prolonged (sometimes indefinite) cervical collar use

Respiratory Complications

- C1-C4 fractures risk phrenic nerve injury, causing diaphragmatic weakness, respiratory insufficiency, and impaired cough mechanics
- Increased pneumonia risk and need for mechanical ventilation

Nutritional & Swallowing Issues

- Perform early dysphagia evaluation: many patients have baseline swallowing difficulties that can worsen with cervical collar use
- Initiate goals of care discussions regarding PEG tube placement when appropriate

Device-Related Complications

- Rigid collars and halo-vest risk pin site infections and pressure ulcers
- Balance the stability benefits of rigid immobilization against complication risks in frail patients

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PALLIATIVE CARE PRIMERS

GUIDANCE TO CLINICIANS

Early in Hospitalization

- Conduct a frailty assessment to guide treatment decisions and prognostication
- Establish treatment goals of care and clarify patient and family expectations
- Arrange multidisciplinary team involvement (neurosurgery/orthopedic spine, geriatrics, physical medicine and rehabilitation, and palliative care)

Individualize Treatment Planning

- Base decisions on injury severity, comorbidities, baseline functional status, and frailty
- No one-size-fits-all approach
- Consider patient and family values, goals, and quality of life priorities

Discharge Planning

- Set realistic expectations - most patients will require skilled nursing or inpatient rehabilitation

GOALS OF CARE

- **Early discussions (24-48 hours):** mortality risk persists regardless of treatment choice, with frailty and comorbidities being the strongest outcome predictors
- **Set realistic expectations:** most require skilled nursing/inpatient rehabilitation, 6-9 month recovery timeline, and poor prognosis with complete spinal cord injury regardless of treatment
- **Present treatment trade-offs:** surgery avoids non-union but carries higher complication risks in frail patients; non-operative management avoids surgical risks but has higher failure rates and prolonged immobilization complications
- **Explore patients' values and priorities:** What matters most? What functional level is acceptable? Are they willing to accept prolonged rehabilitation away from home, mechanical ventilation, feeding tubes, or permanent nursing home placement?
- **Involve multidisciplinary team** early and reassess goals regularly at transitions in care and status changes

TAKE HOME POINTS

High mortality risk which requires early goal of care discussions

- One-year mortality >25% regardless of treatment choice
- Frailty assessment and clear treatment goals are essential as comorbidity burden strongly predicts outcomes

Individualized treatment - No universal "best" approach

- No consensus on optimal strategy
- Surgery preferred for healthier patients
- Non-operative may suit frailer patients, but have higher failure rates
- Balance injury severity, comorbidities, baseline functional status, frailty, and patient/family values

Limited return to baseline

- <20% discharge home
- Peak recovery in 6-9 months
- Early multidisciplinary involvement with realistic expectations essential for patient and family preparation

WHERE TO HANG:

- Surgeon Lounge
- OR Locker Room
- Resident Workroom
- ICU Workroom

Need additional copies?

Send an email to aast@aast.org with the subject header: Goals of Care, with mailing information.