POSTERIOR CERVICAL FUSION
CLINICAL CARE GUIDELINE

Phase 1 (POD 1 – 6 weeks)

- +/- C-Collar x 6 weeks; may have associated c-spine fractures that we were stabilizing. Patient specific
- Typically, will wait to start PT until > 6 weeks

Phase 2 (6 weeks – 8 weeks)

- Begin regimented PT program (2-3x/wk) as needed
- No overhead lifting/weights
- No cervical ROM exercises or prone exercises
- Focus on:
  - Basic mobilization & correctly performing ADL
  - Using assisted devices correctly (walker/cane/etc) for those who suffered severe myelopathy issues
  - Endurance (walking on treadmill/track/pool or recumbent bike)
  - Balance; Posture, Proprioception, and Gait training
  - Fine motor function with hands for those with myelopathy
  - +/- Pool Therapy
  - Can begin light strengthening exercises
    - Weight limit of < 20 lbs until 3 months post op
    - Can incorporate light weights or resistant bands

- **Suggested Interventions**
  - UBE (upper body ergometer)
  - Bilateral stretching – 3 x 30sec
    - e.g. pec. major/minor, lats, etc.
  - Teach chin tuck and VC for volitional deep cervical muscle contraction
  - Cranio-cervical flexion with visual biofeedback (pressure cuff stabilizer) – constant feedback
    - Inflate to 20 mmHg and place behind neck at suboccipital level while supine → increase pressure by 10 mmHg with upper cervical nod
  - UE strengthening exercises (maintain chin tuck): progress c resistance
    - elbow flex/ext
    - wrist flex/ext
    - grip/hand intrinsic
- **dexterity**
  - Scapular stabilization exercises (dumbbells):
    - sidelying: ER
    - supine: punches
  - Shoulder shrugs & rolls, scapula retraction/depression
  - Soft tissue mobilization for hypertonic paraspinal muscles
  - Postural education and cueing (shoulders back, chest out and up)
  - Ice/modalities for pain/inflammation (no U/S)
  - Education: review precautions, anatomy/biomechanics, surgical procedure, prognosis, etc.

- **Avoid:**
  - Overhead activity until after 2 months post op
  - Running/horseback riding for at least 6 months
  - Cervical ROM exercises until > 8 weeks post op.

- **Considerations**
  - Consult doctor for return to driving
  - Avoid lotions/creams or submerging incision under water until fully healed

- **Goals:**
  - ↓ pain, 0-2/10 pain at rest
  - Improve UE strength/mobility
  - Progressive walking program
  - Progress exercises once patient demonstrates proper form/technique and control of neutral spine with each repetition

**Phase 3 (8 weeks – 3 months/12 weeks)**

- Continue to progress strength & endurance with goal to return to baseline standing/walking duration & distance
  - Typically most post op patients at this time will be totally out of c-collar
  - Weight limit < 20 lbs
  - May be appropriate to start home regimen instructions

- **Suggested Interventions**
  - UBE (upper body ergometer)
  - Bilateral stretching – 3 x 30sec
    - e.g. pec. major/minor, lats, etc.
  - Gentle Cervical AROM (all directions), shoulder shrugs & rolls, scapula retraction/depression.
o Teach chin tuck and VC for volitional deep cervical muscle contraction
o Cranio-cervical flexion with visual biofeedback (pressure cuff stabilizer) – constant feedback
  ▪ Inflate to 20 mmHg and place behind neck at suboccipital level while supine → increase pressure by 10 mmHg with upper cervical nod
o UE strengthening exercises (maintain chin tuck): progress c resistance
  ▪ elbow flex/ext
  ▪ wrist flex/ext
  ▪ grip/hand intrinsics
  ▪ dexterity
o Scapular stabilization exercises (dumbbells):
  ▪ sidelying: ER
  ▪ supine: punches
o Shoulder shrugs & rolls, scapula retraction/depression
o Joint mobilizations (grades I-II) above/below surgical site for pain modulation
o Thoracic spine joint mobilizations (grades III-IV) or on foam roll
o Soft tissue mobilization for hypertonic paraspinal muscles
o Postural education and cueing (shoulders back, chest out and up)
o Scar mobility/cross friction massage at (10-12 weeks)
o Ice/modalities for pain/inflammation (no U/S)
  ▪ Computer/desk ergonomic workstation
    ▪ arms length away
    ▪ top of screen in line with forehead
    ▪ elbows and hips at 90°
    ▪ wrists neutral/keyboard downward slope
    ▪ mouse same height as keyboard
    ▪ sit in swivel chair to avoid twisting
  ▪ Education: review precautions, anatomy/biomechanics, surgical procedure, prognosis, etc.

• Considerations
  o Consult doctor for return to driving
  o Avoid lotions/creams or submerging incision under water until fully healed
  o Consult doctor for return to work
    ▪ Shorter for sedentary jobs
• **Goals:**
  - ↓ pain, 0-2/10 pain at rest
  - Improve scar mobility
  - Reestablish neuromuscular control of deep cervical stabilizers
  - Volitional contraction of deep neck flexors for 5 x 5 sec
  - Improve UE strength/mobility
  - Verbalize proper workstation set-up
  - Progressive walking program
  - Independent with HEP
  - Progress exercises once patient demonstrates proper form/technique and control of neutral spine with each repetition
  - D/C collar/brace per surgeon’s orders

**Phase 4 (3months – 6months)**

- Continue progressing activity strengthening
  - Increase weight by 5 lbs per week as long as patient is tolerating ok
- May start using elliptical for more cardio exercises
- May take NSAIDs at this time

• **Suggested Interventions**
  - UBE (forward & backward)
  - Gentle Cervical AROM (all directions), shoulder shrugs & rolls, scapula retraction/depression
  - Cranio-cervical flexion with pressure cuff stabilizer
    - Inflate to 20 mmHg and place behind neck at suboccipital level while supine → increase pressure by 10 mmHg with upper cervical nod
  - Cervical isometrics
    - flexion
    - extension
    - side-bending
    - rotation
  - Scapular stabilization exercises:
    - standing: rows, extension, hor. abd, ER (Theraband or cable column)
    - prone (on stability ball): Y, T, W (dumbbells)
    - standing (facing wall): push-up plus
    - standing (back to wall): arm slide for low trap activation
    - standing: PNF D1/D2 patterns (Theraband or cable column)
• Rhythmic stabilisation/perturbations (Theraband or BodyBlade)
  • Wall circles (medicine ball)
  • Cervical retraction (off end of table)
    • Prone
    • Supine
    • Sidelying
  • Thoracic spine joint mobilisation/manipulation (grades IV-V)
  • Light progressing to Full work simulation activities

• Goals:
  • Volitional contraction of deep neck flexors for 10 x 10 sec
  • 0/10 pain with all or most activities
  • Able to tolerate work simulation activities without increase in symptoms
  • Verbally understands the return to work progression
  • Complete progressive walking program
  • Independent with HEP
  • Achieve Neck Disability Index MCID

Phase 5 (6months+)

• May initiate jogging/running/horseback riding
• Should be able to return to most recreational activity/sports
• May take NSAIDs now (Ibuprofen, Aleve, Naproxen, Motrin, etc.)

Progressive walking program – begin post-op Day 1

<table>
<thead>
<tr>
<th>Distance</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mile</td>
<td>20min at 6 weeks</td>
</tr>
<tr>
<td>2 miles</td>
<td>30min at 9 weeks</td>
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<tr>
<td>3 miles</td>
<td>45min at 12 weeks</td>
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Reviewers

Dr. Andrew Grossbach, Neurological Surgery, The Ohio State University Wexner Medical Center
Dr. Jonathan Karnes, Orthopaedic Surgery, The Ohio State University Wexner Medical Center
Dr. Safdar Khan, Orthopaedic Surgery, The Ohio State University Wexner Medical Center
Dr. Stephanus Viljoen, Neurological Surgery, The Ohio State University Wexner Medical Center
Dr. Elizabeth Yu, Orthopaedic Surgery, The Ohio State University Wexner Medical Center

References


