



Standard of Care: Cervical Radiculopathy

Diagnosis:

Cervical radiculopathy, injury to one or more nerve roots, has multiple presentations. Symptoms may include pain in the cervical spine and/or upper extremity, paresthesias, weakness, and/or reflex hypoactivity. "Acute radiculopathies are commonly associated with disc herniation while more chronic types are more related to spondylosis."¹

Indications for Treatment:

1. Pain c-spine and /or UE, headache
2. Paresthesias
3. UE weakness
4. Limited cervical AROM
5. Limited function- concentration, sitting or driving tolerance, computer use, inability to sustain rotation, lifting, disturbed sleep

Contraindications/Precautions for Treatment:

1. Cervical instability/subluxation/fracture/spondylolisthesis
2. Vertebral artery insufficiency
3. Osteoporosis/osteopenia
4. History of cancer- question of bony metastasis

Examination:

History of Present Illness

-Age. Spondylosis is often seen in persons 25 years of age or older. Symptoms of osteoarthritis usually do not appear until age 60 or older.

-Mechanism of injury- traumatic vs. non-traumatic/overuse. If traumatic, when did symptoms come on? Bone pain typically occurs immediately. Soft tissue pain may occur immediately if torn or later if stretched.

-Previous episodes . How were they treated?

-Pain- Nerve root distribution vs. diffuse pain. Presence of headaches.

-Medications. NSAIDs/muscle relaxants/narcotics/neuropathic pain medications/anti-depressants

-Imaging Studies. Presence of degenerative joint/disc disease vs. acute changes. Congenital anomalies.

Social History

-Work activities/ergonomic set up/habits

-Sports/leisure pursuits

Standard of Care: Cervical Radiculopathy

Copyright © 2007 The Brigham and Women's Hospital, Inc. Department of Rehabilitation Services. All rights reserved.

PMH

- Rheumatological diseases
- Presence of visual problems

Examination (Physical / Cognitive / applicable tests and measures / other)

This section is intended to capture the most commonly used assessment tools for this case type/diagnosis. It is not intended to be either inclusive or exclusive of assessment tools.

Posture: Assess for head in mid-line, cervical lordosis, thoracic kyphosis, shoulder girdle symmetry, muscle hypertrophy or atrophy

Neurological Screen: Resisted isometrics, Sensation, DTRs, Babinski/clonus if indicated

Clear TMJ and shoulder

Cervical AROM/PROM

Palpation

Joint Play/PIVM: cervical and thoracic spine

Strength: neck flexors, back extensors, periscapular muscles as appropriate

Special Tests:

- Compression
- Distraction
- Vertebral Artery
- Alar ligament
- Sharp Purser Test
- Lhermitte's Sign or Romberg for cervical myelopathy v. Hoffman's sign
- Upper limb tension tests and/or tests for thoracic outlet syndrome as appropriate

Evaluation / Assessment:

Establish Diagnosis and Need for Skilled Services

Physical therapy services are indicated to reduce pain and inflammation, to improve posture, to normalize joint arthrokinematics, to increase cervical AROM and strength, and to improve body mechanics/work ergonomics.

Problem List- likely to include but not limited to:

1. Pain in cervical spine and or upper extremity/Paresthesias
2. Impaired posture
3. Decreased cervical A/PROM

Standard of Care: Cervical Radiculopathy

Copyright © 2007 The Brigham and Women's Hospital, Inc. Department of Rehabilitation Services. All rights reserved.

4. Decreased neck flexor, back extensor, and/or periscapular strength
5. Impaired function (refer to indications for treatment)

Prognosis

Prognosis is dependent upon results of imaging studies, extent of involvement, chronicity of problem, and irritability of symptoms/ability to find a relieving position. Patients with foraminal narrowing, disc herniation with compression of the thecal sac, spinal stenosis, spondylosis, or spondylolisthesis have biomechanical blocks to achieving normal arthrokinematics of the cervical spine, which may limit prognosis. Patients with pain and/or paresthesias only have a better chance of recovery than patients with muscle weakness and atrophy. Chronicity of radiculopathy will also affect outcome- early treatment is correlated with greater rates of recovery.

Goals

To be met in 4 weeks-

1. Decrease pain and/or paresthesias.
2. Independent management of pain, postural correction.
3. Increase cervical A/PROM.
4. Increase neck flexor , back extensor, and/or periscapular strength

To be met in 4-8 weeks-

1. Independent home exercise program.
2. Functional goals based on functional limitations and severity of symptoms

Treatment Planning / Interventions

Established Pathway	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Established Protocol	<input type="checkbox"/> Yes	<input type="checkbox"/> No

The goal of the acute stage is to reduce pain and inflammation, to improve postural awareness, to improve knowledge of body mechanics/work ergonomics, and to increase cervical A/PROM. Modalities such as ultrasound, moist heat, TENS, interferential, and ice may be appropriate for pain control. Soft tissue mobilization is appropriate for cervical spasm and /or trigger points. Cervicothoracic mobilizations are appropriate for reducing pain and increasing joint nutrition at Grades I-II; Grades III-IV will address joint stiffness. Postural re-education, stretching, and strengthening exercises are determined by the severity of the patient’s symptoms. The patient may benefit from an ergonomic assessment.

The goal of the sub-acute and chronic stage is to continue to address cervical A/PROM and to progress strengthening of the postural muscles.

Standard of Care: Cervical Radiculopathy

Frequency and Duration

Determined by severity of symptoms and extent of disability. In the acute phase, physical therapy may be 2-3x/week for 4-6 weeks to control pain and restore normal joint motion. As pain subsides and cervical AROM normalizes, the patient may be seen 1x/week to progress strengthening program prior to discharge to an independent program.

Patient / family education

1. Pain self-management techniques
2. Postural correction
3. Work ergonomics/body mechanics
4. Home exercise program

Recommendations and referrals to other providers.

1. PCP
2. Orthopedist
3. Rheumatologist
4. Neurologist
5. Physiatrist
6. Pain Management Clinic
7. Optometrist or Ophthalmologist if visual problems are present

Re-evaluation / assessment

A brief re-evaluation should be performed at each visit to assess the efficacy of manual techniques. A formal re-evaluation should be performed within 30 days of initiating therapy. A formal re-evaluation may be done earlier if a patient has had a change in status or an intervention such as an epidural steroid injection. The expected range of number of visits per episode of care is 8-24.

Discharge Planning

Criteria for discharge

1. Independent pain management.
2. Improved postural awareness
3. Normal joint motion.
4. Able to perform home exercise program independently

Transfer of Care (if applicable)

Return to referring physician or referral to an above listed provider would be warranted if symptoms persist or worsen despite intervention.

Standard of Care: Cervical Radiculopathy

Copyright © 2007 The Brigham and Women's Hospital, Inc. Department of Rehabilitation Services. All rights reserved.

Bibliography / Reference List

American Physical Therapy Practice *Guide to Physical Therapist Practice*. Second edition. Physical Therapy. 2001:81:223-239.

Magee, David. *Orthopedic Physical Assessment*. Saunders. Philadelphia. 1997. P.121-177.

Saunders, H. Duane. *Evaluation, Treatment, and Prevention of Musculoskeletal Disorders: Spine*. Third edition. Saunders Group. Chaska, MN. 1995. P.128-130.

Developed by:
Heather Renick-Miller PT

Reviewed by:
Leigh de Chaves PT, OCS 2/04
Reg Wilcox III, PT, DPT 4/04
Ethan Jerome MSPT 6/04

Standard of Care: Cervical Radiculopathy

Copyright © 2007 The Brigham and Women's Hospital, Inc. Department of Rehabilitation Services. All rights reserved.