CERVICAL MUSCULOLIGAMENTOUS INJURY (Sprain/Strain)

I. BACKGROUND

A cervical musculoligamentous injury (sprain/strain) may cause neck pain due to a partial stretching or tearing of the soft tissues (muscles, fascia, ligaments, tendons etc.). Non-specific upper extremity complaints such as stiffness, muscle fatigue, and paresthesias may also be reported. Although injury to the neck can result in fracture or neurologic impairment, by definition, a diagnosis of cervical sprain or strain excludes a fracture. The recovery period following a cervical musculoligamentous injury is of variable duration, but symptoms generally resolve within 6 weeks.

II. DIAGNOSTIC CRITERIA

A. Pertinent Historical and Physical Findings

The onset of neck pain and paraspinal muscle spasm may begin either immediately after the injury occurs or can develop gradually over the next 24-48 hours. This pain is usually aggravated with motion of the neck and/or shoulder and is frequently reduced with rest. The pain usually does not radiate below the shoulder. It can be accompanied by paresthesias or a sense of weakness in the upper extremities related to muscle spasm in the neck. Headaches arising from the cervical region or occiput may accompany neck pain. Physical findings include tenderness to palpation and/or spasm of the paraspinal, trapezius, or anterior cervical (e.g. sternocleidomastoid) muscles, and painful and/or decreased active cervical range of motion. With isolated cervical sprain/strain, the objective neurological examination should be normal.

B. Appropriate Diagnostic Tests and Examinations

Indications for radiographs of the cervical spine include high velocity trauma, neurologic injury on clinical examination, history of cancer or osteoporosis, age > 65 years, etc. X-rays should, at minimum, consist of 3 views: anteroposterior, lateral, and open-mouth odontoid views. Other views may be added to the roentgenographic series as indicated; flexion-extension X-rays may help rule out ligamentous injury or instability, while oblique X-rays can help visualize the facet joints. Straightening of the cervical spine is frequently observed on lateral X-ray, which is often due to paraspinal muscle spasm but does not affect long-term prognosis. The presence of a focal neurologic deficit, midline spinal tenderness, or altered consciousness may warrant more immediate advanced imaging such as CT or MRI.

C. Diagnostic Tests and Examinations within 30 days after injury are generally unnecessary. These tests include:

1. CT Scan
2. MRI
3. EMG in the absence of abnormal neurologic findings

4. Evoked Potentials
5. Bone Scan
6. Myelography
7. Thermogram *

* Never appropriate

III. TREATMENT

A. Outpatient Treatment

1. Non-Operative Treatment

a. Indications: Almost all patients with cervical musculoligamentous (sprain/strain) can be treated satisfactorily. No indications exist for the use of surgery in the treatment of cervical musculoligamentous injury.

b. Treatment Options

1) Non-narcotic analgesics (e.g. acetaminophen)
2) Muscle relaxants
3) Anti-inflammatory drugs, non-steroidal (NSAIDs)
4) Physical therapy and/or rehabilitative services
5) Occasional trigger point injections may be helpful
6) Spinal manipulation, massage, or traction therapy

c. Rehabilitation Procedures

1) Therapy may be initiated as early as the day of injury; early mobilization and return to prior function are key important for recovery. Indications for and focus of (early) intervention include:
   a) acute management of pain/spasms;
   b) limited use of passive modalities (judicious use of ice for pain and heat for muscle spasm/stiffness is acceptable);
   c) active instruction in restoring cervical range of motion, correcting segmental restrictions, and strengthening/stretching of tight or weak neck and shoulder muscles;
   d) assessment of return to work readiness and identifying necessary work modifications;
   e) patient education regarding the healing process, home exercises, and body mechanics, such as improved posture.
   f) cervical pillow for use at bed time

Time Frame: May range from one to nine visits (½ to 1-hour session) depending on initial severity of injury/pain and response to therapy

2) Inappropriate Treatments: Exclusive use of passive (palliative) modalities; TENS is not indicated. Prolonged bed rest or use of cervical collars may hinder recovery and prolong symptoms

3) For the (smaller) portion of workers, some may have unique job requirements necessitating a change in work duties or work skills retraining

4) Ergonomic changes (e.g. telephone headset, adjustable desk/monitor) may help with recovery and prevent aggravation or repeat injury

B. Inappropriate Treatment

1. Operative treatment is inappropriate for a cervical strain
2. Narcotic medication or muscle relaxants for a prolonged period of time (>1-2 weeks)
3. Epidural steroid injections are not indicated unless neurogenic pain is present and the patients have supporting evidence of cervical radiculopathy (EMG and/or imaging studies). Facet joint injections and/or radiofrequency ablation or rhizotomy are rarely indicated within the first 30 days of the work-related incident.
4. Inpatient treatment or hospitalization

C. Estimated Duration of Care: 1 to 6 weeks

D. Anticipated Outcome

1. Resumption of normal activity without residual symptoms is expected within 6 weeks in most cases. Return to work activities that stress the injured area may hinder recovery, but in general, earlier return to activity and work (with modified duties and appropriate accommodations) results in better outcomes.

E. Modifiers (age, sex, and co-morbidity)

Co-morbidity (prior neck pain/injury and existing pathology, e.g. disc disease, spondylolisthesis, segmental instability, osteoporosis, spine deformity) may be associated with a higher incidence of persistent symptoms.

IV. If the patient has not responded to the above-outlined treatments in 30 days, the patient must be referred to a Neurologist, Neurosurgeon, Orthopedic Surgeon, or Physiatrist. The specialist referred to above may order further diagnostic procedures, since the failure to respond to conservative treatment brings with it the distinct possibility of a different diagnosis such as cervical disc herniation or radiculopathy.

NOTE: Cervical Musculoligamentous Injury (Sprain/Strain) may also include, SUBLUXATIONS, FACET ARTHROPATHY, SPONDYLOLISTHESIS WITH NO NEUROLOGICAL INVOLVEMENT, ANNULAR TEARS, MYOFASCIAL PAIN, CERVICAL SPINAL STENOSIS.

PROTOCOL HISTORY:

Passed: 9/1/1992
Amended: 5/17/1993
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