Pain Management for Primary Care

DoD/VHA
JOINT INCENTIVE FUND (JIF)
PROJECT

Series: Ten
Spine Pain Conditions

Module 10-1
Neck Pain

Module 10-1

Neck Pain

By the end of the module, you will be able to:

- Describe cervical anatomy and the exam of the neck and upper extremity
- Discuss the differential diagnosis of neck pain and know the Red Flag conditions
- Know how to treat and when to refer patients with neck pain

We will review:

Topic One: Anatomy and Physical Exam

Topic Two: Differential Diagnosis and Red Flags

Topic Three: How to Treat and When to Refer

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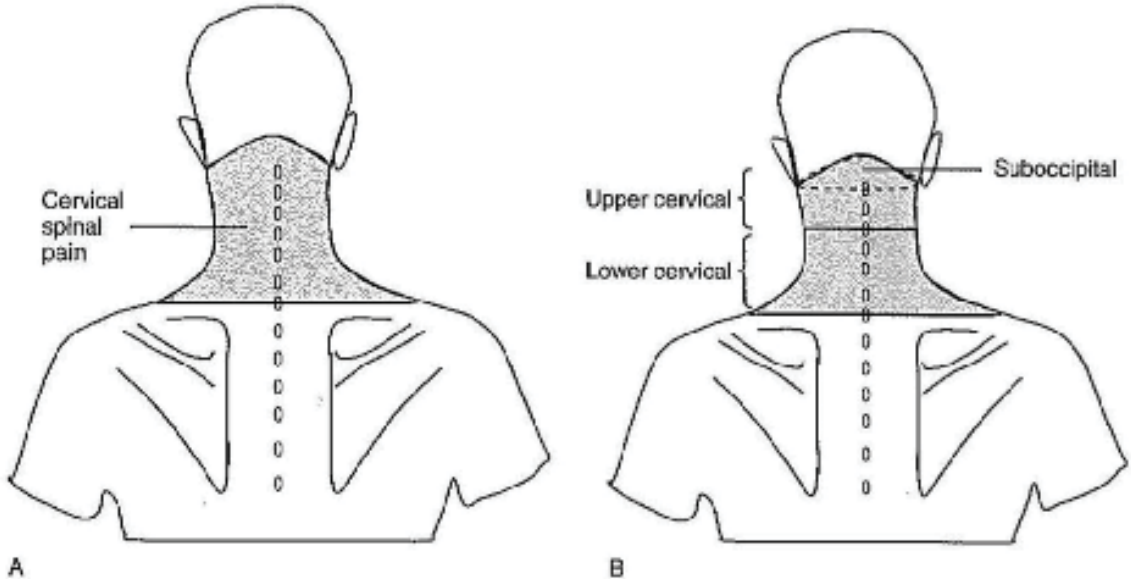
Topic One

Anatomy and Exam

Emphasis that a careful history taking (to exclude red flags) and a careful physical exam (to distinguish referring neck pain and radiating neck pain) are key

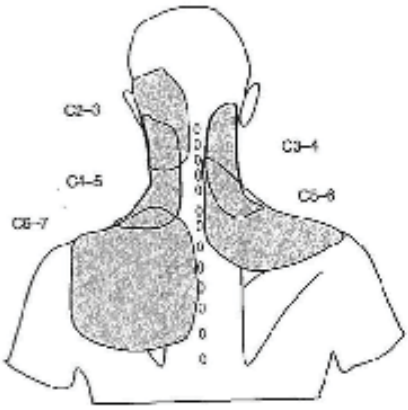
Neck pain is anywhere between the base of the skull and the first thoracic spinous process.

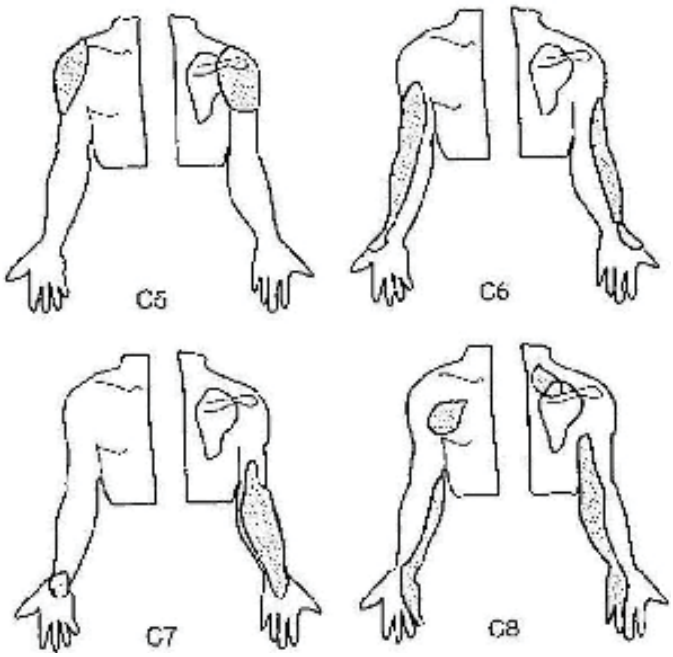


Notes

It is important to define the perimeters of neck pain.
Note C4 delimits between upper and lower neck pain.

Neck pain can refer to the head or arm.





Notes

Neck pain can cause arm pain or headaches (cervicogenic headaches). The distribution here is myotomal, not dermatomal

Recall the:

Bony Structures
- Spine
- Scapula
- Gleno-humeral jt.

Muscles
- Upper Trapezius
- Rhomboids
- Scalene
- Levator Scapulae
- Sternocleidomastoid
- Splenius and longus capitis
- Pectoralis major

Nerves
- Occipital Nerve
- Dermatomes
- Motor innervation and reflexes

Physical Exam is key, and pay attention to pain behaviors.

Notes

Look for:

- Grimace
- Groan
- Guarding
- Over reaction
- Inconsistencies
- Give-way weakness
- Shaking

Assess Myofascial Pain

- Local Tenderness
- Single or multiple muscles
- Trigger points active
- Firm or Taut Bands
- Local twitch response (LTR)
- Muscle weakness
- Muscle shortening

Notes

Most neck pain will be myofascial pain.

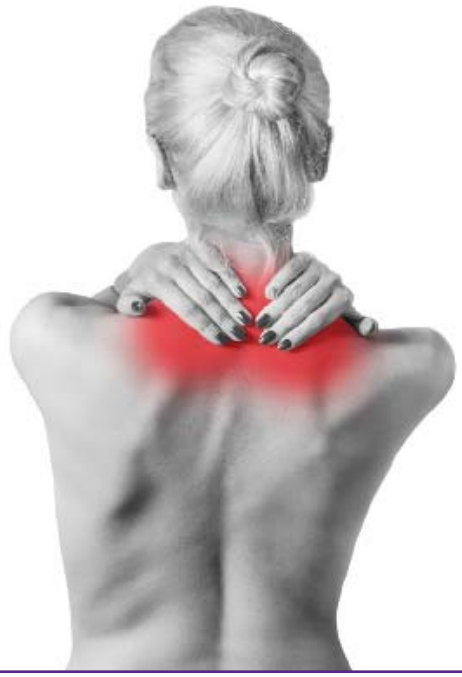
Do not confuse muscle weakness due to pain with paresis accompanied with hyperreflexia and hypoesthesia

Look for non organic signs like:

- Grimace
- Groan
- Guarding
- Over reaction
- Inconsistencies
- Give-way weakness
- Shaking

Topic Two

Differential Diagnosis and Red Flags



Never forget the OPQRSTU mnemonic

Onset of pain

Provocation/Palliation

Quality/Character

Region/Radiation

Severity/Intensity

Timing (continuous, intermittent)

U/you (impact on activities)

Notes

Repeat this mnemonic often

Then remember that fortunately, Red Flag conditions are rare.

- Serious and identifiable causes of neck pain are rare
- They include:
  - Tumors (lung, breast, myeloma)
  - Infections (myelitis, abscess)
  - Fractures (osteoporosis)
  - Aneurysms (aorta, carotid)

Notes

It is important to underline that the only urgent thing in patients presenting neck pain is to rule out red flags.

To detect these conditions, use a checklist:

Name: _____ D.O.B. _____						Neck Pain M.R.N. _____		
Trauma	Y	N	**Neurological**			**Endocrine**		
Fever	Y	N	Symptoms/signs	Y	N	Corticosteroids	Y	N
Night sweats	Y	N	Cerebrovascular	Y	N	Diabetes	Y	N
Recent surgery	Y	N	Vomiting	Y	N	Hyperparathyroid	Y	N
Catheterization	Y	N	**Cardiovascular**			**GIT**		
Venipuncture	Y	N	Risk Factors	Y	N	Dysphagia	Y	N
Illicit drug use	Y	N	Anticoagulants	Y	N	**Musculoskeletal**		
Immunosuppression	Y	N	**Urinary**			Pain elsewhere	Y	N
Awkward posture	Y	N	UTI	Y	N	**Skin**		
Manipulation	Y	N	Hematuria	Y	N	Infections	Y	N
History of Cancer	Y	N	Retention	Y	N	Rashes	Y	N
Weight loss	Y	N	**Reproductive**			**Respiratory**		
Exotic exposure	Y	N	Uterine	Y	N	Cough	Y	N
(Overseas) travel	Y	N	Breast	Y	N	**Signature:**		
Comments						**Date:**		

Notes

Go over the list and underline how the questions reveal red flags

Tumor (fever, night sweats, history of cancer, weight loss)
Infection (fever, recent surgery, illicit drug use, immunosupression, catheterization, travel)
Fracture (trauma, recent surgery, manipulation, corticosteroids)
Aneurysm (cadiovascular, cerebrovascular risk factors)

Another mnemonic for Red Flag conditions is: N SWIFT PICS

Neuro – Progressive Neurological Deficit

Steroids – Prolonged Use

Weight Loss – Unexplained

Immunosuppression

Fever – Unexplained

Trauma – Even mild if over 50

Porosis – Osteoporosis/Osteopenia

IVDU – Intravenous Drug Abuse

Cancer – History of Cancer

Severity – of Pain

Notes

It is important to underline that the only urgent thing in patients presenting neck pain is to rule out red flags.

Acute Neck Pain is pain that is present for less than 3 months.

- The prognosis of acute neck pain without trauma or red flags is favorable
- Following whiplash, 80% can expect to recover rapidly
- Stress at work, previous injuries and litigation are risk factors for chronic neck pain

Notes

Emphasize acute neck pain is common and although may be severe is self limiting.
It is important to identify and treat psycho-social risk factors to avoid chronification.

Chronic Neck Pain is pain that is present for more than 3 months.

- In the absence of trauma and a normal exam, the cause for chronic neck pain is unknown
- Other known sources for chronic neck with trauma (Whiplash) that merit further investigation are:
  - zygapophyseal joints (facets)
  - internal disc disruption
- If osteoarthrosis is presumed to be the cause of pain, it cannot be detected by imaging

Notes

It is important to emphasize that most chronic neck pains in the absence of trauma and red flags (normal exam) are unknown.

Patients suffer and demand an investigation, however imaging is overused and does not reveal the cause of pain.

The only investigations to consider, if the mechanism of injury suggests are:

Medial branch block to rule out facet pain

Provocative discography to rule out internal disc disruption

In neck pain of unknown origin, explanation and reassurance are key.

- Without a history of Red Flags
- With a normal physical exam
- There is absolutely no need for X-rays, CT, MRI or EMG
- If you are considering zygapophyseal joints (facets) or internal disc disruption as the sources of pain order diagnostic blocks:
  - Median branch block for facet pain
  - Provocative discography for disc disruption

Notes

Again, emphasize the need to reassure and consider diagnostic blocks only if necessary.

Remember, neck pain referring to the arm is not the same as neck pain radiating to the arm.

Referring neck pain follows myotomes and usually has a normal neurological exam. Pain can be myofascial, discal, zygoapophysial (facet)

Radiating neck pain or arm pain follows dermatomes and has an abnormal neurological exam. Pain can be due thoracic outlet syndrome, cervical radiculopathy, peripheral neuropathy, carpal tunnel syndrome

Notes

This is an important point often overlooked.

Referring pain follows myotome distribution and the neurological exam is normal

Radiating pain follows a dermatome and is accompanied with neurological signs such as paresis, hyper-reflexia or hypoesthesia.

Knowledge Check

What are the two most common diagnosis for chronic axial neck pain?

a. Myofascial Pain; Cervical Neuritis
b. Cervical Disogenic Pain; Myofascial Pain
c. Cervical Neuritis; Cervical Facet Syndrome
d. Myofascial Pain; Cervical Facet Syndrome

Knowledge Check – Answer

What are the two most common diagnosis for chronic axial neck pain?

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b. Cervical Disogenic Pain; Myofascial Pain
c. Cervical Neuritis; Cervical Facet Syndrome
d. Myofascial Pain; Cervical Facet Syndrome

Notes

Again, emphasize the need to reassure and consider diagnostic blocks only if necessary.

Knowledge Check

Neck pain red flags include Bowel or bladder dysfunction, _____, Leg/trunk symptoms, Fever/chills, Immunosuppression/cancer/IVDA, and _____.

a. Weight loss; gait problems
b. Weight gain; gait problems
c. Weight loss; fibroids
d. Weight loss; migraines

Knowledge Check – Answer

Neck pain red flags include Bowel or bladder dysfunction, _____, Leg/trunk symptoms, Fever/chills, Immunosuppression/cancer/IVDA, and _____.

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b. Weight gain; gait problems
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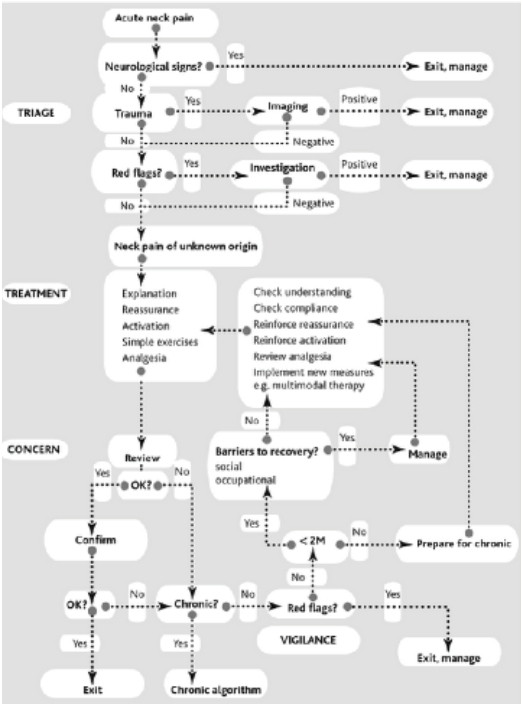
Notes

Read question aloud

Topic Three

How to Treat and When to Refer

This is the algorithm of Acute Neck Pain:



Notes

Please review and discuss the algorithm on the slide.

Recall that acute neck pain is self limiting in the majority of cases and reassurance is key.

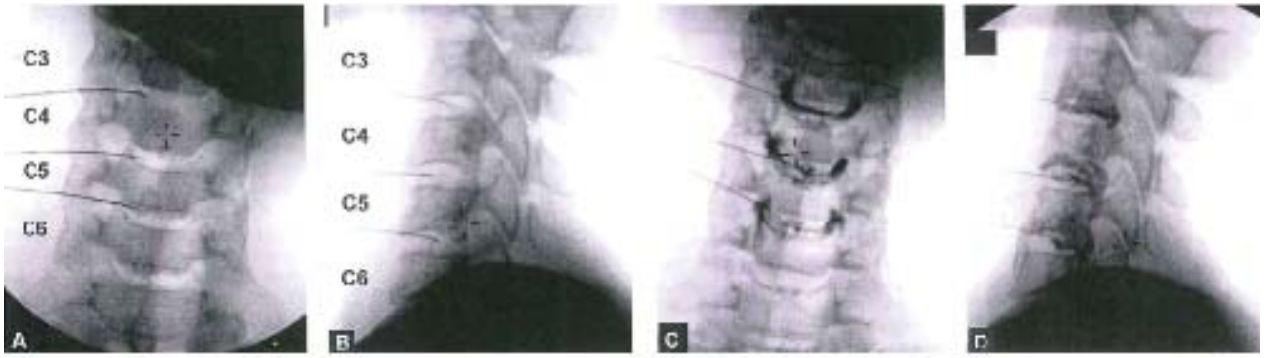
In general, symptom management provides minimal to modest relief.

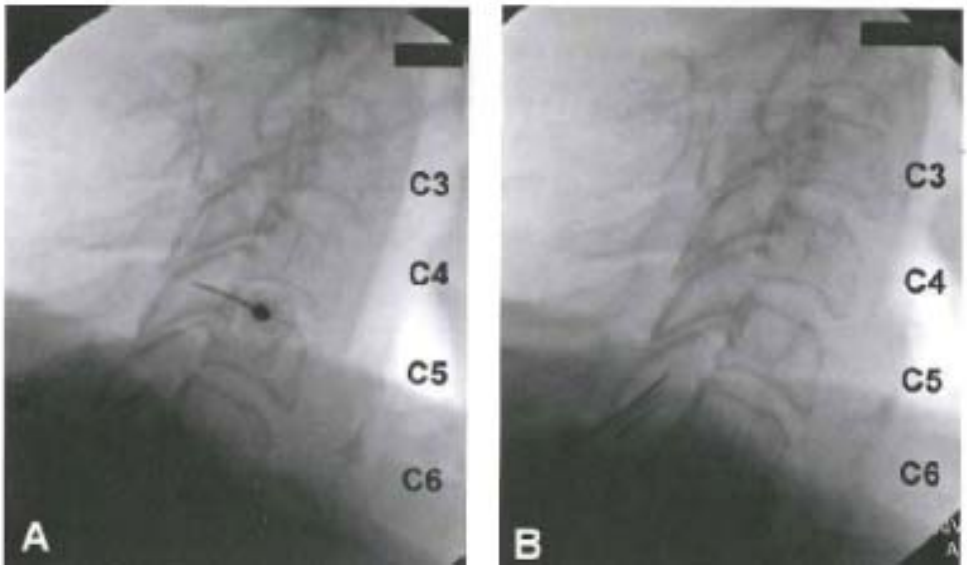
- Acupuncture, stretch and spray, heat packs, are low risk and may offer some symptom relief
- NSAIDS and muscle relaxants are not particularly effective
- Opioids are not indicated

Notes

Note that these measure may help and emphasize that the risk of chronic opioid therapy outweighs the benefits.

If neck pain persists, perform an MRI to detect an occult lesion and order an image guided diagnostic test.





Notes

Again, if the patient has been optimized, exam and imaging are normal and neck pain persists:
It is appropriate to send the patient to a specialist to perform a provocative discography (upper figures) or a medial branch block (lower figures) to rule out facet or discogenic pain.

Many specialists will recommend a definitive treatment that may include radiofrequency ablation or surgery. However these options must be discussed carefully, bearing in mind the psycho-social status of the patient.

Just remember that long term results with procedures are not better than behavioral and mind body treatments.

Exercise and cognitive behavior therapy (CBT) alone, or in addition, provide the best long term outcome.

If provocative tests or diagnostic blocks provide pain relief, judiciously consider the indication for percutaneous radiofrequency neurotomy or surgery.

Just remember that these procedures are irreversible and pose a risk of worsening or causing new pain complaints.

Notes

Exercise, CBT are the way to go and permanent ablative treatments after an unequivocal diagnostic tests can be helpful.

Summary

Be confident in performing physical exams while determining the differential diagnosis between neck pain and neck and arm pain.

Look for signs and symptoms of red flag neck pain conditions during routine visits and clinical examinations.

Avoid unnecessary imaging. If diagnostic blocks do not provide pain relief, reassure the patient that life style changes and behavioral modification work best.

References

Bonica, J. J. (2010). Bonica's management of pain. S. Fishman, J. Ballantyne, & J. P. Rathmell (Eds.). Lippincott Williams & Wilkins.

Neck Pain Clinical Examination

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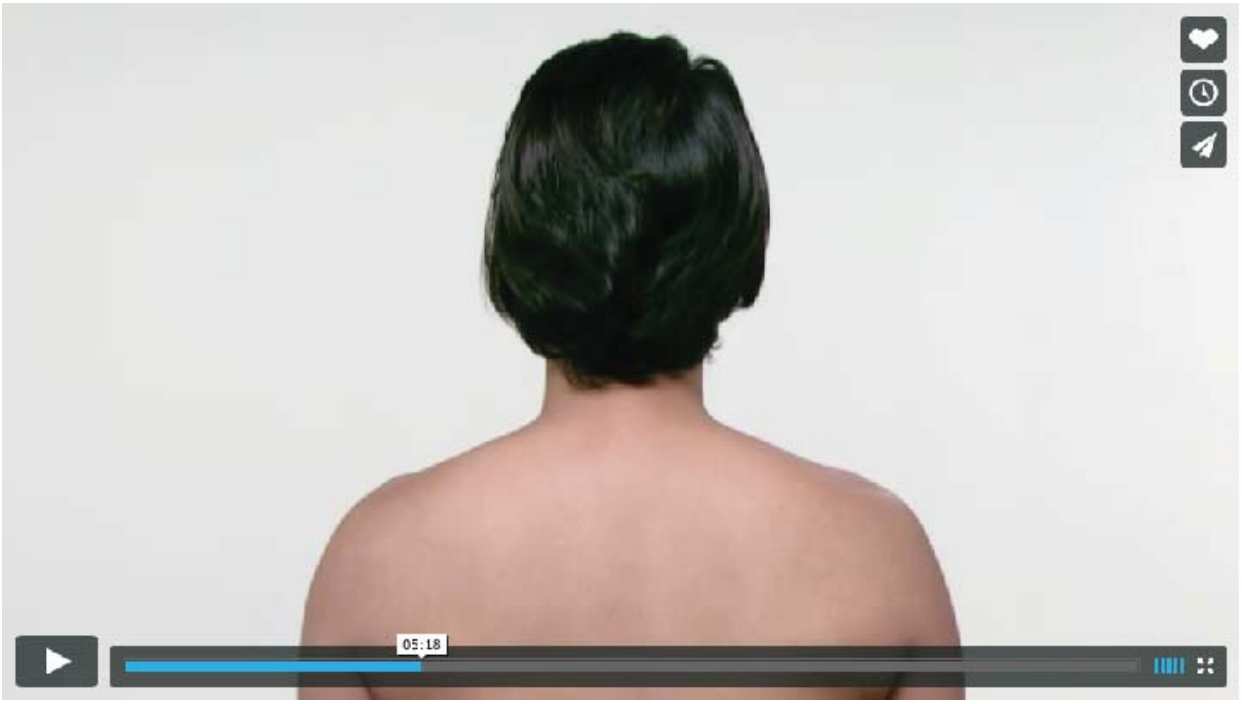

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