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Cervical Radicular Pain and Radiculopathy

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Terminology

- Cervical somatic pain
- Cervical somatic referred pain
- Cervical radicular pain
- Cervical radiculopathy
Cervical Radicular Pain

- Is a symptom
- Lancinating, shooting “electric” pain traveling down a limb in a narrow band
- Is due to stretching of an already inflamed nerve root
- IS NOT RADICULOPATHY
- Maybe momentary
- Usually co-exists with cervical somatic and somatic referred pain
- Typical referral patterns
Cervical Radicular Pain patterns

Pain, paraesthesia or dysaesthesia

- C6 – predominantly to the thumb
- C7 – predominantly to the middle finger
- C8 – predominantly to the little finger
Cervical radicular pain

- Referral patterns are NOT dermatomal but may include the dermatomal representation
- They are dynatomal
- 45% patients with a surgically proven nerve root lesion will not have a distinct referral pattern
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**Table 4.2.** The relative prevalence of disc protrusions causing cervical nerve root compression at different segmental levels, as verified by surgery.
Sensory Dermatomes

Cervical Dermatomes: Nerve Root Numbness Patterns (above)
Symptom Dynatomes (after Slipman)

C4 Nerve Root Pain Pattern

C5 Nerve Root Pain Pattern
Symptom Dynatomes (after Slipman)
Cervical Radiculopathy

Are the signs elicited on examination?

IT IS NOT RADICULAR PAIN

- weakness
- loss of reflexes
- loss of sensation
- muscle wasting

Is due to nerve root compression, and be present in the absence of pain.
Neurological Examination Summary

- Cervical compression test
- Wasting
- C5
  - Reflex: Biceps Jerk
  - Motor: deltoid – shoulder abduction
  - Sensation: upper lateral arm
- C6
  - Reflex: Brachioradialis Jerk
  - Motor: elbow flexion, wrist extension
  - Sensation: radial side forearm to thumb
- C7
  - Reflex: Triceps Jerk
  - Motor: wrist flexion, finger extension (from MCPs)
  - Sensation: middle finger
- C8
  - Reflex: nil
  - Motor: finger flexion “sailors grip”
  - Sensation: ulnar side forearm to little finger
- T1
  - Reflex: nil
  - Motor: finger abduction/adduction
  - Sensation: medial side upper arm
Cervical Compression (Spurling) Test
Causes

- Most cases are spontaneous in origin
- Often the onset occurs after a trivial movement of the neck or arm
- Peak incidence 6th decade (50-54yo)

- Trauma is involved in fewer than 20%

Risk factors strongly associated with cervical disc prolapse
  - Diving
  - Coughing
  - Heavy lifting
Summary

- Pain quality and referral pattern
- Radiculopathy represents conduction block ie objective signs
- Cervical compression test, if positive very helpful
- C5/6 & C6/7 commonest lesions
- Develop a screening examination routine
Management

- Exclude red flag conditions and mimics
  - Infection, tumours, inflammatory arthropathies, rarer causes nerve root impingements
  - Consider PMRh, brachial neuritis, thoracic outlet syndromes

- Screening
  - Xrays, blood tests, possibly nerve conduction studies
Natural History

- About 90% of patients with cervical radicular pain recover in 12 weeks.
- No benefit at 12 months from having surgery or physiotherapy over no intervention.
- However, those having surgery generally recover more rapidly.
- Cervical radicular pain with or without radiculopathy can be treated conservatively.
- If physical therapy, medication and other treatments such as epidural corticosteroids have not helped, this may only be adequately relieved by spinal surgery.
- Patients can be (cautiously) advised that neurological deficits will likely recover, no matter what treatment is used.
- Long term results of those treated surgically are not as good as those treated conservatively. This probably reflects the selection process; the more severe the pain and pathology, the more likely that surgery would have been required.
Management

Explanation:

◦ important part of management

◦ patients should be aware that they have a condition with a good prognosis, both in terms of pain, and, neurological recovery if this is present.
Treatment

- Management of the pain is the cardinal aim
- No Class I recommendations
- Few controlled trials
Medication

- Analgesic ladder ± NSAIDs
- Opiates in short term if severe
- Adjunctives, especially for neuropathic component
  - AED (gabapentin)
  - TCA (Nortriptyline better tolerated Amitript)
  - SSRIs/NSSRIs (venlafaxine)
- No role oral steroids
Other Therapies

- Physiotherapy
  - Traction/collar/TENS/manual therapy/IF/exercise/massage

- Injections
  - Focal local anaesthetic injections (TeP) or acupuncture
  - Epidural steroid
    - Interlaminar
    - Transforaminal
      - Cervical transforaminal epidural steroid injections not without rare but catastrophic complications
Treatment

- Possibly psychological interventions (CBT) in chronic cervical radicular pain
- Surgery
  - Surgical treatment is recommended for rapid relief of symptoms of cervical radiculopathy
    - Grade= B fair
  - ACD ± fusion
Recurrences

Of 561 patients treated for 5 years (26% had surgery)

- At follow up 90% were normal or only mildly incapacitated
- 10% were moderately to severely disabled

Recurrences occurred in 32% of cases

- The recurrences were described as only “isolated” recurrences, suggesting that they did not become persistent and that they were not as severe as the initial case
- Imaging studies show that over time the disc protrusions reduce in size
Management summary

- Know that the natural history is one to improvement for most patients
- Reassurance with explanation
- Actively excluded red flag conditions particularly in the older patient
- Review regularly
- Adequate analgesia ± adjunctives
- Possibly physiotherapy, acupuncture
- Surgical opinion for severe persisting pain
Thank you