Neck Pain (Cervicalgia) and Torticollis

Neck problems are common in general practice. Neck pain may present as either chronic discomfort, such as with cervical spondylosis, or following acute trauma - eg, whiplash injuries following road traffic accidents.

See also separate Cervical Spondylosis and Whiplash and Cervical Spine Injury articles.

Epidemiology

- Neck pain is one of the most common musculoskeletal complaints.
- About two thirds of the population will experience neck pain at some point in their lives.
- Women are affected almost twice as much as men.
- Prevalence rises with age for men and women and is the highest in the age group between 50-59 years.
- The percentage of people in whom neck pain becomes chronic is generally thought to be about 10%.

Aetiology

- Nonspecific neck pain: the cause is usually multifactorial and includes poor posture, neck strain, sporting and occupational activities, anxiety and depression.
- Generalised musculoskeletal problems - eg, rheumatoid arthritis, osteoarthritis, osteoporosis, fibromyalgia.
- Cervical spondylosis.
- Cervical intervertebral disc lesions and prolapse.
- Spinal stenosis.
- Infection of the spine - eg, osteomyelitis.
- Bone cancer involving the spine.
- Trauma - eg, whiplash.
- Acute spasm: torticollis (see heading following 'Prognosis', below).
- Non-musculoskeletal causes - eg, cardiovascular, respiratory and upper gastrointestinal causes, acute upper respiratory tract infections, meningitis.

Risk factors

- Workplace-associated risks: poor workplace design, awkward neck postures, neck flexion, arm posture, duration of sitting, twisting or bending of the body, hand or arm vibration.
- Excessive use of pillows.
- Psychosocial factors that may indicate increased risk for chronicity and disability:
  - Excessive concerns about the neck pain.
  - Unrealistic expectations of treatment.
  - Disabling sickness behaviour.
  - Issues of injury compensation.
  - Psychosocial problems, including work or family problems.

Presentation

See separate Examination of the Spine, Neurological History and Examination and Neurological Examination of the Upper Limbs articles. Evaluation of possible causes of neck pain includes an assessment of neurological symptoms and signs in the upper limbs. Spinal cord compression in the neck may lead to lower limb problems and abnormal gait, as well as bladder and bowel disturbance.
**Nonspecific neck pain**

- Symptoms of nonspecific neck pain vary with different physical activities and over time.
- It is aggravated by particular movements, posture and activities, and relieved by others. Pain is often, but not always, aggravated by exercise and relieved by rest.
- It radiates in a non-segmental distribution into the shoulder, upper back, arm(s) and head.
- It may be associated with sensory disturbance but there is usually no objective loss of sensation or muscle strength.
- There may be associated neck stiffness and muscle spasm.
- It may be associated with dizziness and, much more rarely, with dysphagia, syncope, migraine or chest pain.
- Typical signs:
  - Positional asymmetry: there may be a change in the most comfortable resting position of the neck or overt torticollis (see heading following "Prognosis", below).
  - Unequal restriction or limited range of movement (also common with normal ageing).
  - Tenderness of muscles or intervertebral joints is usually poorly localised.
  - Localised nodules or tender bands of increased muscle.

**Cervical radiculopathy**

Cervical radiculopathy is usually due to compression or injury to a nerve root in the cervical spine, which may present as pain, motor dysfunction, sensory deficits, or alteration in tendon reflexes. The most common causes are cervical disc herniation and degenerative changes. See also separate [Cervical Disc Protrusion and Lesions](#) and [Cervical Ribs and Thoracic Outlet Syndrome](#) articles.

- Unilateral neck, shoulder, or arm pain that approximates to a dermatome.
- Altered sensation or weakness in related muscles.
- Pain or paraesthesia radiating into the arm is not specific for nerve root pain and may be present in people with nonspecific neck pain.

Radiculopathy usually affects levels C5 to C7, although higher levels can also be affected. Sensory symptoms are more common than weakness. Reflexes are usually diminished at the appropriate levels.

**Red flags**

Red flags are clinical features that indicate an increased risk of specific conditions that can present with neck pain and require urgent attention.

- Serious underlying cause is more likely:
  - New symptoms before the age of 20 years or after the age of 55 years.
  - Weakness involving more than one myotome or loss of sensation involving more than one dermatome.
  - Intractable or increasing pain.

- Suggest compression of the spinal cord (myelopathy):
  - Insidious progression.
  - Neurological symptoms: gait disturbance, clumsy or weak hands, or loss of sexual, bladder, or bowel function.
  - Neurological signs:
    - Lhermitte's sign: flexion of the neck causes an electric shock-type sensation that radiates down the spine and into the limbs.
    - Upper motor neuron signs in the lower limbs (Babinski's sign: upgoing plantar reflex, hyperreflexia, clonus, spasticity).
    - Lower motor neuron signs in the upper limbs (atrophy, hyporeflexia).
  - Sensory changes are variable, with loss of vibration and joint position sense more evident in the hands than in the feet.

- Suggest cancer, infection, or inflammation:
  - Malaise, fever, unexplained weight loss.
  - Pain that is increasing, is unremitting, or disturbs sleep.
  - History of inflammatory arthritis, cancer, tuberculosis, immunosuppression, drug abuse, AIDS, or other infection.
  - Lymphadenopathy.
  - Exquisite localised tenderness over a vertebral body.
Suggest severe trauma or skeletal injury:
- A history of violent trauma (e.g., a road traffic accident) or a fall from a height. However, minor trauma may fracture the spine in people with osteoporosis.
- A history of neck surgery.
- Risk factors for osteoporosis: premature menopause, use of systemic steroids.

Differential diagnosis

Other causes of neck pain and muscle spasm include:

- Acute disc prolapse: the most common cause of severe secondary torticollis.
- Tonsillitis, retropharyngeal abscess.
- Cervical lymphadenopathy due to infection or cancer.
- Vertebral infection (e.g., osteomyelitis).
- Cervical spine injury (e.g., post-traumatic fracture or dislocation).
- Eye disorders.
- Dystonia due to any underlying condition - e.g., stroke, encephalitis, or cervical dystonia (see 'Cervical dystonia', below).
- Drug dystonic reactions (e.g., antipsychotic drugs, metoclopramide, amfetamines, cocaine).
- Pseudodystonias - e.g., vestibular disorder, tumour of the posterior fossa.
- Somatisation.

Investigations

- CXRs and other imaging studies and investigations are not routinely required.
- Investigations may be required to identify an underlying cause (e.g., rheumatoid arthritis) or identify a non-musculoskeletal cause, depending on the presentation.

Management

- If any 'red flags' are present, refer the patient urgently for investigations and further assessment.
- Manage any comorbidities, such as other chronic pain conditions, chronic physical conditions, anxiety and mood disorders.
- A single cervical manipulation has been shown to be capable of producing immediate and short-term benefits for mechanical neck pain[2]. However, not all manipulative techniques have the same effect.
- Multiple cervical manipulation sessions may provide better pain relief and functional improvement than certain medications at immediate and long-term follow-up but more research needs to be undertake in this area[3].
- Specific strengthening exercises of the neck, scapulothoracic muscles and shoulder for chronic neck pain have been shown to be beneficial[4].
- A recent Cochrane review has concluded that there is moderate-quality evidence that acupuncture relieves pain better than sham acupuncture, as measured at completion of treatment and at short-term follow-up. In addition, those who received acupuncture reported less pain and disability at short-term follow-up than those who had not received it[5].
- The results for cervical manipulation and mobilisation versus control are few and diverse for improving neck pain[3].
- Cognitive behavioural therapy has been shown to be more effective for short-term neck pain reduction only when compared to no treatment; however, these effects could not be considered clinically meaningful[6].
- If cervical radiculopathy has been present for a period of less than 4-6 weeks and there are no objective neurological signs[1]:
  - Provide reassurance and information - the long-term prognosis of patients with radiculopathy is good and most cases improve without surgery.
  - Encourage activity and a return to a normal lifestyle (including work) as soon as possible.
  - However, advise the person not to drive if the range of motion of the neck is restricted.
  - Discourage the use of cervical collars because this restricts mobility and may prolong symptoms.
  - Advise that a firm pillow may provide comfort at night. It should provide lateral support and support the hollow of the neck, and the position should be comfortable. Using two pillows may force the head into an unnatural position.
Offer analgesia, usually paracetamol and/or ibuprofen to relieve symptoms. Choice of analgesia depends on the severity, personal preferences, tolerability, and risk of adverse effects.

- If cervical radiculopathy has been present for 4-6 weeks or more, or there are objective neurological signs:
  - Refer to confirm the diagnosis with magnetic resonance imaging and to consider invasive procedures, such as interlaminar cervical epidural injections, transforaminal injections, or spinal surgery.
  - Offer standard analgesia.
  - A trial of treatment with amitriptyline, or pregabalin (or gabapentin if there is a local decision to prefer gabapentin over pregabalin).

**Surgery**

Surgery may be required for certain causes of neck pain, including vertebral fractures, cervical disc protrusions or lesions, spinal cord injury, or spinal cord compression.

**Prognosis**

Acute nonspecific neck pain usually tends to resolve over a few weeks but may progress into a chronic disabling condition, with periods of remission and exacerbation.

**Torticollis**

- Torticollis, or wry neck, is a twisted neck.
- Acute torticollis is thought to be due to minor local musculoskeletal irritation causing pain and spasm in neck muscles.
- Acute acquired torticollis is common.
- Torticollis may be congenital (rare) or acquired as a result of many causes, including:
  - After sleeping in an awkward position. Symptoms usually resolve spontaneously within a few days and last no more than 1-2 weeks.
  - Upper respiratory and soft tissue infections of the neck can cause an inflammatory torticollis secondary to muscle contracture or adenitis.
  - Any abnormality or trauma of the cervical spine.

  - The cause of torticollis is often not known but it may be due to bad posture - for example, poor positioning at a computer screen, inappropriate seating, sleeping without adequate neck support, or carrying heavy unbalanced loads (eg, a briefcase or shopping bag).

**Presentation**[7]

- Sudden onset (often on wakening) of severe unilateral pain with deviation of the neck to that side. The person may experience some premonitory twinges. Occasionally, the pain may be in the middle of the neck. Pain may be referred to the head or shoulder region.
- The neck feels stuck in one position and any attempted movement to free it results in sharp spasms of pain.
- No history of trauma or strain.
- A history of localised exposure to cold, prolonged or unusual positioning of the neck, or unusual posture (eg, holding the neck in an unusual position whilst working, sleeping, or reading).

  - Signs:
    - Tenderness is usually diffuse on the involved side with palpable spasm.
    - Look for trigger points (tender points of muscle spasm).
    - Check for restricted or painful movement.
    - Visual acuity testing and full eye examination should be considered, especially in children presenting with torticollis.

**Investigations**

- The diagnosis is clinical and usually no investigations are required.
- Plain X-rays, CT scans or MRI of the cervical spine may be needed to evaluate for bone trauma, suspected C1-C2 subluxation, congenital bony abnormalities or osteomyelitis.
CT scan or MRI of the neck may be useful for evaluation of suspected abscesses, deep space infections, or masses.
CT scan or MRI of the brain may be useful to exclude suspected tumours.

Management [7]
- Advise that acute torticollis usually resolves within 24-48 hours. Occasionally, symptoms may take up to a week to resolve and recurrence is common.
- Advise analgesia, depending on the severity of pain.
- Usually paracetamol and/or ibuprofen are given. Codeine can be given as second-line analgesia.
- Also advise gentle exercise, intermittent heat or a cold pack to help reduce pain and spasm, sleeping on a low firm pillow and maintaining a good posture.
- Causes of torticollis should be identified and treated accordingly.
- Advise against routine use of a soft cervical collar. Also advise against driving, as it is not possible to rotate the head to view traffic.

Prognosis
Most cases of torticollis, including congenital muscular torticollis, resolve spontaneously.

Cervical dystonia
- Cervical dystonia is focal dystonia characterised by involuntary movement of the neck muscle, which leads to abnormal head posture. It can be accompanied by pain and tremor [8].
- It most often occurs in people over the age of 40 years.
- Involuntary contraction of neck muscles produces abnormal movements and postures of the neck and head, which can be twisting (torticollis), being pulled forwards (antecollis), backwards (retrocollis), or sideways (laterocollis).
- The severity and natural history are very variable in different patients.
- There is no cure but regular botulinum toxin injections are the most effective treatment [9].
- Psychological support is often very important for these patients [10].

Further reading & references
1. Neck pain - cervical radiculopathy; NICE CKS, April 2015 (UK access only)
7. Neck pain - acute torticollis; NICE CKS, April 2015 (UK access only)

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