

blood tests, including blood cultures if bacterial meningitis is suspected.

A wide variety of systemic diseases have headache as a prominent symptom; some of the more prevalent disorders are summarized in [Table 111-2](#).

CRANIAL NEURALGIAS

Neuralgias are differentiated from other head pains by the brevity of the attacks (usually 1 to 2 seconds or less) and by the distribution of the pain ([Table 111-3](#)).

Trigeminal Neuralgia

In trigeminal neuralgia (tic douloureux), stabbing, spasmodic pain occurs unilaterally in one of the divisions of the trigeminal nerve. It lasts seconds, but it may occur many times a day for weeks at a time. It is characteristically induced by even the lightest touch to particular areas of the face, such as the lips or gums. Trigeminal neuralgia is the most frequent neuralgia of the elderly and is thought to be caused by compression of the trigeminal nerve root in the pons by an aberrant arterial loop. A small minority of cases are caused by multiple sclerosis, cerebellopontine angle tumors, aneurysms, or arteriovenous malformations, although in these cases (unlike “true” trigeminal neuralgia) there are usually objective signs of neurologic deficit, such as areas of diminished sensation. In these cases of “symptomatic” neuralgia, the pain is often atypical. MRI is indicated in patients who have sensory loss, those who are under 40, and those with bilateral or atypical symptoms. Trigeminal neuralgia may be life threatening when it interferes with eating. Neuralgic pain is often responsive to treatment with standard doses of an anticonvulsant such as phenytoin, carbamazepine, gabapentin, pregabalin, and, occasionally, baclofen. Antidepressant drugs such as amitriptyline and, more recently, duloxetine may also be useful in this setting. Combination therapy, including an antidepressant, anticonvulsant, and opiate analgesic has been shown to have synergistic effects.

If medical treatments are unsuccessful, surgical treatment may be indicated: microvascular decompression or radiofrequency lesioning of the sensory portion of the trigeminal nerve.

Glossopharyngeal Neuralgia

Glossopharyngeal neuralgia is less common than trigeminal neuralgia. Brief paroxysms of severe, stabbing, unilateral pain radiate from the throat to the ear or vice versa and are frequently initiated by stimulation of specific “trigger zones” (e.g., tonsillar fossa or pharyngeal wall). Swallowing often provokes an attack; yawning, talking, and coughing are other potential triggers. Microvascular decompression is necessary if medical treatment is ineffective.

Postherpetic Neuralgia

Herpes zoster produces head pain by cranial nerve involvement in one third of cases. In some cases a persistent intense burning pain follows the initial acute illness. The discomfort may subside after several weeks or persist (particularly in the elderly) for months or years. The pain is localized over the distribution of the affected nerve and associated with exquisite tenderness to even the lightest touch. The first division of the trigeminal nerve is the most frequent cranial nerve involved (ophthalmic herpes) and is

occasionally associated with keratoconjunctivitis. When the seventh nerve is affected (“geniculate herpes”), the pain involves the external auditory meatus and pinna. Occasionally, concomitant facial paralysis may occur (Ramsay Hunt syndrome).

Occipital Neuralgia

Occipital neuralgia is a syndrome that includes occipital pain starting at the base of the skull and often provoked by neck extension. Physical examination shows tenderness in the region of the occipital nerves and altered sensation in the C2 dermatome. Treatment includes the use of a soft collar, muscle relaxants, physical therapy, and local injections of analgesics and anti-inflammatory agents. The term *cervicogenic headache* is often used to describe headache associated with myofascial trigger points in the neck. Importantly, cervical spondylosis (discussed below) is not usually typically associated with headache.

CERVICAL SPONDYLOSIS

Cervical spondylosis is a degenerative disorder of the cervical intervertebral disks leading to osteophyte formation and hypertrophy of adjacent facet joints and ligaments. In contrast to the lumbar spine, herniation of cervical intervertebral disks (nucleus pulposus) accounts for only 20% to 25% of cervical root irritation. Cervical spondylosis one of the most common pathologies seen in office practice and is present radiographically in over 90% of the population older than 60 years of age. For unknown reasons, the degree of anatomic abnormality is not directly correlated with the clinical signs and symptoms. Clinical disease may represent a combination of normal, age-related, degenerative changes in the cervical spine and a congenital or developmental stenosis of the cervical canal; the process may be aggravated by trauma. Cervical spinal myelopathy results from a combination of degenerative disc disease, spondylosis aggravated by biomechanical instability, as well as stiffening and buckling of the ligamentum flavum. It may manifest as a painful stiff neck, with or without symptoms or signs of cervical root irritation or spinal cord compression. Patients with root irritation (cervical radiculopathy) complain of pain and paresthesias radiating down the arm roughly in the dermatomal distribution of the affected nerve root. More typically, the pain radiates in a myotomal pattern, whereas numbness and paresthesias follow a dermatomal distribution. Discrete sensory loss is uncommon and less prominent than symptoms ([Table 111-9](#)). For relief, patients often adopt a position with the arm elevated and flexed behind the head. Pain is exacerbated by turning the head, ear down, to the side of the pain (Spurling maneuver). Objective neurologic findings may be limited to reflex asymmetry because weakness may be obscured by pain. Patients who have some degree of spinal cord compression demonstrate gait and bladder disturbances and evidence of spasticity on examination of the lower extremities. These patients require investigation with MRI. Plain radiographs of the cervical spine add little information except in patients with rheumatoid arthritis in whom basilar invagination or atlantoaxial subluxation is suspected.

Cervical spondylosis is so common in the general population that it may be present coincidentally in a patient with another disease of the spinal cord. Among other diseases that may mimic cervical spondylosis are multiple sclerosis, amyotrophic lateral