Regional Pain Syndromes: Neck and Back

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Learning objectives

- Identify the most common painful conditions in the neck and back region
- Improve history taking skills and learn about the most useful diagnostic tests that can help diagnose the disease state
- Review current recommendations from professional societies on diagnosis and treatment
- Explain how to improve patient care by incorporating evidence based medicine
Chronic Pain is an Epidemic

- More than 100 million people suffer from chronic pain
- Population is aging
- People are living longer
- Average weight is on the rise
- Most common musculoskeletal pain is primarily in spine and major weight bearing joints
- Pain is inevitable, misery is optional
Low back pain

- Defined as pain between T12 and S1 area

- Classification:
  - Acute vs chronic
  - Axial vs radicular
  - Nociceptive, neuropathic, mixed

- Centralization of pain with structural issues being resolved
Acute low back pain

- Acute low back pain is the most common reason for clinician visits in the US
- Usual course of acute low back pain is resolution in 2 to 3 weeks without any deficits
- Less than 10% of become chronic patients
- Guidelines call for the use of APAP, NSAIDs, muscle relaxants, and physical therapy as the first line treatment
- No diagnostic testing is recommended unless there is neurologic compromise
Acute low back pain

- Guidelines call for further investigation only when there is sensory loss, motor strength deficits, and bowel/bladder incontinence.
- Diagnostic testing includes plain films, MRI, and EMG/NCS
- EMG/NCS are not positive for at least 3 weeks post-injury.
- Uncontrolled pain after 2 to 3 weeks probably needs a referral to specialist.
Chronic low back pain

- Less than 10% of acute LBP will progress to chronic LBP
- Direct and indirect costs exceed $600 billion
- One of the most common reasons for disability claims in the middle aged men
- Surveys consistently show that more than 50% of chronic pain patients who are on opiates are low back pain sufferers
Differential diagnosis

- Lumbosacral radiculopathy
- Facet joint arthritis
- Sacroiliac dysfunction
- Piriformis syndrome
- Ankylosing spondylitis
- Although rare, pelvic pathology and ischial bursitis have to be kept in mind
Piriformis Syndrome

- Piriformis syndrome is a condition where the piriformis muscle that attaches hip to pelvis becomes tight and inflamed and traps sciatic nerve, which in turn inflames the nerve.
Sacroiliac dysfunction

Sacroiliac joint (SI joint) is the joint between the sacrum and ilium of the pelvis, which are joined by strong ligaments.

- Common problems of the SI joint collectively referred to as SI dysfunction.
- One of the most common reasons for unilateral low back pain.
- Pain can be referred into the buttock or thigh, but rarely below the knee.
Evaluation of low back pain

- History of onset including any injury, duration, radiation, and paresthesias
- Enquire about weakness, bowel/bladder incontinence
- Functional history including sleep
- Previous diagnostic testing
- Previous interventions (pharmacologic and nonpharmacologic) including interventional procedures
- Focused but thorough exam is critical for diagnosis and management
Neck pain

- Neck pain is only second to low back pain as one of the most common reasons for office visits (1 in 6 in the US reported having neck pain)
- On the rise, secondary to the sedentary life style and poor posturing with increased use of personal computers and mobile devices
- Associated with significant disability and rising direct and indirect costs
Common neck conditions

- Most common among the working age population is regional myofacial pain syndrome (cervicobrachial syndrome)
- Cervical degenerative disk disease
- One of the most common reasons for neck pain is “whip lash” (acceleration-deceleration injury), following a motor vehicle accident
Cervical radiculopathy

- Neck pain radiating to upper extremity along the distribution of the affected root
- Associated with paresthesias
- Often confused with peripheral nerve entrapment such as carpal tunnel syndrome and ulnar nerve entrapment—remember, those patients rarely have symptoms proximally
- Not every radiating pain is radicular
Cervical dystonia

- Cervical dystonia, also called spasmodic torticollis, is a chronic, often painful neurological disorder.
- Cervical dystonia is a type of movement disorder, characterized by loss of control over one or more parts of the body.
Cervical dystonia

Types:

ANTEROCOLLIS
To be pulled forward

ROTATIONAL COLLIS
To remain upright, but be turned

LATEROCOLLIS
Sideways, toward either shoulder

RETROCOLLIS
To be pulled backward
History

- Pain location
- History of onset and duration including any trauma
- Aggravating and relieving factors including positional variation
- Radiation, paresthesias, and weakness
- Bowel/bladder dysfunction hx in acute low back pain is critical
- Medications (including OTC) and allergies
- Ethnicity may be of diagnostic value when dealing with cervical dystonia
Physical examination

- Focused neurological exam with good history taking can lead to right diagnosis majority of the times
- Focused exam should include ROM, gait, sensory and motor exam as well as deep tendon reflexes
- Localizing tenderness and nerve tension testing (Tinel’s) can be useful
Diagnostic testing

- Plain films
- MRI or CT
- EMG/NCS: No positive findings for 3 to 4 weeks post-injury. Useful to differentiate peripheral entrapments versus spinal pathology
- Myelogram and discogram can help evaluate the spinal cord along with roots and disc, respectively
Nonpharmacologic management

- Physical therapy
- Therapeutic massage
- Chiropractic manipulation
- Acupuncture
- Modalities such as cryotherapy, phonophoresis, and iontophoresis
- Bracing
Pharmacologic intervention

- OTC meds (APAP, NSAIDs)
- Prescription NSAIDs (low dose vs high dose)
- Skeletal muscle relaxants
- Adjuvants (anticonvulsants, SSRIs, SNRIs)
- Opiates
- Monotherapy vs polypharmacy
- Adverse event management (constipation etc.)
Interventional procedures

- Steroid injections: facet blocks, SI joint injections, ESIs
- Radiofrequency ablation
- Spinal cord stimulators
- Botulinum toxin injections for piriformis syndrome, cervical dystonia, and regional myofascial pain syndrome
Radiofrequency ablation

- Radiofrequency ablation (or RFA) is a procedure used to reduce pain. An electrical current produced by a radio wave is used to heat up a small area of nerve tissue, thereby decreasing pain signals from that specific area.
- The degree of pain relief varies, depending on the cause and location of the pain. Pain relief from RFA can last from 6 to 12 months and, in some cases, relief can last for years. More than 70% of patients treated with RFA experience pain relief.
- RFA has proven to be a safe and effective way to treat some forms of pain. It also is generally well-tolerated, with very few associated complications. There is a slight risk of infection and bleeding at the insertion site.
Spinal cord stimulators

- Approved by the FDA in 1989, spinal cord stimulation (SCS) has become a standard treatment for patients with chronic pain in their back, neck, and/or limbs who have failed conservative treatments.

- In general, neurostimulation works by applying an electrical current to the source of chronic pain. This creates a pleasant sensation that blocks the brain's ability to sense the previously perceived pain.
Peripheral nerve field stimulation

- Peripheral nerve field stimulation (PNFS) is very similar to spinal cord stimulation and involves placing the leads just under the skin in an area near to the nerves involved in pain.

- When conservative therapies fail to treat pain, patient may be a candidate for peripheral nerve and field stimulation pain is associated with nerve injury, nerve entrapments, Complex regional pain syndrome and Occipital Neuralgia.

- Commonly treated disorders include movement disorders such as dystonia and Parkinson’s etc.
Surgical options

- Surgery has to be carefully considered
- High failure rate
- Addresses structural problem, but doesn’t always address the pain
- Significant portion of chronic pain patients have failed back syndrome
- Severe uncontrollable pain, neurological deficits and function has to be the deciding factors
Spinal surgery

There are 2 general types of spine surgery that comprise the most common surgical procedures for the back—

- Decompression: Goal of a decompression surgery is usually to relieve pain caused by nerve root pinching. There are 2 common causes of lumbar nerve root pressure: a herniated disc or spinal stenosis

- Fusion: Goal of a fusion is to stop the pain at a painful motion segment in the lower back. Most commonly, this type of surgery is performed for pain and disability caused by DDD or spondylolisthesis