

1. Signs and symptoms and management of musculoskeletal sprains/strains/dislocations

Sprains: often has redness and bruising over the affected joint, active and passive ROM is decreased, pain upon moving joint. X-ray to rule out fracture.

Strain: affects muscles and tendon that connect a muscle to a bone. Pt usually complain of “pulled muscle” but can use affected limb

Paresthesias: sensation of numbness, prickling, or tingling experienced in central and peripheral nerve lesions.

First degree- stretching of ligamentous fibers

Second degree- **partial tear** of part of the ligament with pain and swelling Third degree- **complete** ligamentous separation

-effects muscle or **tendon that connects a muscle to a bone**, complain of “pulled muscle,” severe cases cause inflammation, swelling, weakness and loss of function- surgery may be needed

Dislocation- complete separation of 2 bones that form a joint

Very painful and cause immobility, need immediate medical attention

Referral to orthopedics for possible surgery or **reduction** with application of cast or splint.

Four cardinal signs of inflammation (swelling, pain, erythema, or warmth).

2. Signs and symptoms and management of spinal disorders (spondylosis, stenosis, etc.)

Spinal stenosis: is the narrowing of one or more levels of lumbar spinal canal, subsequent compression of nerve roots.

As many as 30% of the population may have had spinal stenosis after 60 yrs old, but only portion have symptoms

Obesity is a predisposing factor

Osteoporosis is predisposing factor

Lumbar stenosis:

3. Recognition and immediate management of cauda equina syndrome

Typically presents with leg weakness, saddle area anesthesia, bowel or bladder incontinence/retention, or impotence.

4. Maneuvers and expected findings with joint pain (knee, shoulder, wrist, etc.)

Shoulder:

Neck pain-**Spurling's**.

Shoulder pain-**Apley** scratch test(*reaching the scapula*). Internal and external flexion.

Internal and external abduction. Pain with abduction= early supraspinatus tendinitis and subacromial bursitis=early rotator cuff injuries. Wrist and hand-**allen's** test= radial and ulnar arteries. **Phalens** test=**median** nerve compression.

Tinel's sign assess for compression neuropathy – tapping over nerve.

Finkelsteins test- de Quervains disease. Thumb between finger and point.

Knee Pain= **McMurray**, apprehension sign, bulge sign, inspect/palpate to assess effusion.

Lachman, drawer sign – ACL,

Thumb test - PCL

MCL, LCL test are valgus and varus Tennis elbow cup coffee cup sign

CTS-NSAIDs not effective

Achillies rupture – Thompson test

Apley test that measures abduction and external rotation by having pt reach behind head to touch superior aspect of opposite scapula. For internal rotation an adduction n, pt reach behind the back and touch the inferior aspect of the opposite scapula. Pt should also get external and internal flexion w/ elbow flexed. Internal/external in abduction w/ shoulder at 90 degrees.

Wrist: allen test which assess patency of radial and ulnar arteries and the arterial arch. Phalen's test assess for median nerve compression. Tinel's sign assess for compression neuropathy. Finkelstein's test assess for de Quervain's disease (have pt touch thumb into palm and make a fist. Test positive if moving wrist into ulnar deviation causes pain)

5. Initial assessment of FOOSH injury in correlation to anatomical location of radial head bone

Fall on an outstretched hand: FOOSH - patients present after trauma with pain and swelling in the distal forearm or wrist. Numbness may be present if the **medial nerve** is affected. The mechanism of injury will often provide important clues to the diagnosis. The examination begins with gentle palpation to locate the area of point tenderness and includes a thorough neurovascular assessment. A radiograph of the wrist (including an oblique view) may be necessary to rule out fracture. Common fractures are the colles fracture of the distal radius and the navicular **(scaphoid) fracture** of the **anatomical snuffbox**. It is not unusual to have a navicular fracture missed on radiography, so an orthopedic referral should be provided when the presenting complaint is pain and trauma to the soft-tissue area of the anatomical snuffbox.

6. Assessment and management of Myofascial pain

Myofascial pain: muscle pain that is purportedly caused by the development of “trigger points” within a muscle.

Management: identifying and eliminating aggravating factors. Trigger point injections, (such as anesthetic or corticosteroids), dry needling (needle w/o med is inserted to deactivate the trigger point), massage therapy and the muscle relaxant tizanidine (can be temporarily used)

7. Health promotion activities to prevent sport related musculoskeletal injuries

Protection may refer to preventing the injury from occurring or making it less severe by wearing protective gear, such as helmets, wrist pads, and kneepads. Maintain adequate hydration and proper diet while playing sports. Stretch before the activity. Stop when you are injured, do not “tough it out”.

Reassurance: most injuries are self-limiting and improvement should occur in approx. 2 weeks

Limitation of activity: immobilization of the injured area is appropriate during diagnostic phase. Bed rest should be limited to 2 days or less

Physical therapy: may include heat or cold application with the goal of returning the pt to full function ASAP with minimal limitation

Pain relief: NSAIDs are the first line choice for pain relief. Long term use can lead to GI disease such as ulcers, gastritis and hemorrhage.

Referral: pt should be referred to an orthopedic specialist if there is no relief with conventional methods

Imaging studies: radiography, CT, and MRI are usually not indicated for acute musculoskeletal injuries

8. Osteopenia: is the thinning of bone mass that is commonly seen in people over the age 50 that have lower than average bone density but do not have osteoporosis.

It is the precursor to osteoporosis. Caused by a level of T-scores in relation to the results of a dual-energy x-ray absorptiometry scan or DXA Scan, which measures the mineral content of bone. A T-score ranging from -1 to -2.5 would be classified as osteopenia.

Patho: it occurs secondary to uncoupling of osteoclast-osteoblast activity resulting in a quantitative decrease in bone mass. Peak bone mass is typically achieved by males and females just prior to, or early-on in the 3rd decade of life.

9. Assessment and management of gout

Assessment: thorough evaluation of the onset, characteristics and potentiating cause of gouty joint pain. Pt past medical history, including any joint or musculoskeletal trauma, along with family history.

Management: goal is to terminate an acute attack, prevent future attacks, normalize hyperuricemia, and prevent potential complications of urate deposits. Management includes pharmacological treatment of acute attacks and long term medical and pharmacological treatment of hyperuricemia.

Acute management: generalized rest, elevation and immobilization of affected joints, and pharmacological treatments