

SAMPLE CASE

LITERATURE RESEARCH
DISCUSSION OF DIAGNOSIS

MOTOR VEHICLE ACCIDENT

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ATTORNEY AT LAW

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Discussion of Diagnosis Review of Literature:

Flexion Extension injury a/k/a whiplash is common in motor vehicle accidents. The mechanism of injury is due to the sudden acceleration of the body forward forcing the neck to hyper-extend backward, typically causing injury to the ligaments, muscles, bone and intravertebral disc as the impact slows the head is thrust forward in a flexion position. Usually this motion involves the C5—C7 vertebrae. The majority of these patients are neurologically intact. Many times, pain symptoms are not present initially however may develop over time. Typical symptoms include, neck tightness/stiffness, headaches, shoulder/arm pain, numbness in the arms and decreased range of motion in the neck. Treatment for this type of injury often consists of; analgesic medication, muscle relaxants rest, sometimes a cervical collar and moist heat. Most patients recover from acute flexion-extension injury however some do develop a "chronic" whiplash syndrome. Neck pain, headache and often psychiatric complaints are often the complaints offered by these patients.

Ankle Fracture: Ankle joints are highly susceptible to injury because they are relatively mobile and bear most of the stress associated with weight bearing. The primary motion of the ankle at the tibio-talar junction is plantar-flexion and dorsiflexion with inversion and eversion occurring at the sub-talar joint, which is located between the talus (ankle bone) and the calcaneus (heel bone).

Four bones provide the ankle joint framework; the distal tibia (large bone/lower leg), distal fibula (small bone lower leg), the talus (ankle bone) and the calcaneus (heel bone). The ankle joint is stabilized by 3 groups of ligaments which hold the bones in place. Typically an ankle fracture involves bone, cartilage and usually involves injury to one or more of the ligaments.

Supination external rotation is a common mechanism of a twisted ankle injury. The foot is supinated (inward/upward) and an external rotation force acts on the talus. This can cause the inferior tibio-fibular or the deltoid ligaments to tear and may consequently fracture the posterior of the malleolus.

Typically with ankle fractures, pain is the most common complaint. Quite often the pain will not come from the exact site, but associated areas and of course the patient is unable to walk. In severe fractures the skin may be stretched over the broken bone.

Sometimes these fractures can be treated with a closed reduction, ice and elevation. However even the slightest displacement can cause dramatic changes. If the surgeon feels there is potential for change in alignment and/or pressure in the ankle from the fracture he may have to surgically realign the fracture (Open Reduction / Internal Fixation). Often hardware is used to hold the alignment in place. Arthritis in the joint can occur after a fracture and the best way to reduce this risk to obtain proper alignment of the joint.

Typical treatment following ORIF of an ankle fracture consists of casting and physical therapy. Healing time is usually 18-20 weeks. Sometimes the hardware can be removed. Sufficient time for healing is necessary before resuming activity is important to avoid permanent disability. Torn or injured ligaments can require as much time to heal as the fractured bone.

Sternal Fractures are often associated with deceleration injuries or direct blows to the chest and may occur with the use of a seat belt. Sternal fracture can also be associated with compression fracture of the thoracic spine often secondary to hyper-flexion of the spine at the time of the injury.

Generally, isolated sternal fractures are not serious. Sometimes they require re-alignment however quite often no treatment is necessary. The main concern is to rule out injury to the surrounding structures such as the; ribs, myocardium, the great vessels such as the aorta and the thoracic spine.

Rib Fractures can be caused by blunt trauma to the chest wall. Severe crush injuries will often result in 1 or more rib fractures and again may involve injury to the surrounding muscles and ligaments. With normal respiration, the sternal ends of the ribs rise and fall. The ribs are elevated with contraction of the intercostal muscles. The process of breathing requires the use of both these bony structures as well as the accessory muscles. A fractured rib can reduce this action thus

resulting in a reduction in the volume of air that flows into or out of the lungs. Ventilation can be compromised by the pain, which inhibits ventilation as well as the coughing reflex. This impairment may result in collapse of the lung (atelectasis) and/or retained secretions and sometimes pneumonia. Broken ribs can penetrate the lung or the pleura which may result in a hemothorax or a pneumothorax. Pain over the injured ribs will usually last about 3-8 weeks. Deep breathing / coughing exercises are important to avoid a build up of secretions. Rest and limited activity is usually recommended until the pain subsides.

Traumatic Pneumothorax is a collection of air or gas in the pleural space which surrounds the lungs resulting from injury to the chest. Symptoms usually include sudden, sharp chest pain, tightness, a rapid heart rate and a bluish color. Chest X-ray will determine the presence of air outside the lung and arterial blood gases will reflect the air exchange in the blood stream.

Chest tube placement is commonly the treatment of choice with a goal to remove air from the pleural space, allowing the lung to re-expand. Sometime the patient with pneumothorax will experience recurrence however there is usually no long term complication following a successful therapy.

Fibromyalgia is a chronic pain illness, characterized by widespread musculoskeletal aches, pain and stiffness, soft tissue tenderness, general fatigue and sleep disturbances. The most common sites of pain include the neck, back shoulder, pelvic girdle area and hands however any body part can be involved. These patients often complain of range of symptoms that vary in intensity that wax and wane over time. The pain is usually widespread and chronic, has no boundaries and migrates to several body areas. The fatigue is usually much more than being tired and is usually an "all encompassing" exhaustion. Sleep is often interrupted with burst of "awake-like" brain activity, limiting the time of restful, restorative sleep. Other symptoms sometimes associated with Fibromyalgia include; bowel and bladder problems, headaches and migraines, restless leg syndrome, memory and concentration problems. There are no lab or diagnostic studies available to diagnosis Fibromyalgia so physician's generally depend on the history & physical examination, which usually includes a tender point examination.

Causes remain a mystery however this condition has been related to a disorder of the central processing of the neuro-endocrine /neurotransmitter regulators. In a large number of these patients the onset is triggered by illness or injury that causes trauma to the body. It is considered as possible that these events trigger a psychological problem that may already been present. Treatments are usually focused on treating the symptoms and assisting the patient in any lifestyle adjustments.

Osteoporosis is a condition in which the bones become thinner and more porous. It occurs gradually over an extended period of time and most people are not even aware. There are no symptoms directly associated with early stages of osteoporosis however fractures, joint pain, bone pain, height loss, posture changes can occur as the condition progresses. Bone density test can be evaluated to determine the rate of bone / mineral loss.

Osteoarthritis a/k/a degenerative joint disease is characterized by the breakdown of the joints cartilage, which cushions the ends of the bone. It commonly affects middle-aged and older people and can range from mild to severe and commonly affects knees, hips, feet hands and back. Causes and risk factors are often associated with age, obesity, injuries and certainly activities. Genetics also plays a role and can often be associated with the a cartilage defect or the way the joint fits together.

X-rays are commonly used to confirm the diagnosis. It is no uncommon for the condition to be detected on film before the patient complains of the symptoms. Treatments commonly are focused on improving joint movement, relieving the discomfort and protecting the joint from strain or stresses.

Obsessive Compulsive Disorder a/k/a OCD is a disorder that hallmark recurring, thoughts, ideas, feelings or actions. It is though the brain is "stuck" in a thought pattern and it just can't let go. This can cause significant psychological distress or interfere with effective living. The most common obsessions include concerns about cleanliness, injury or aggressive or sexual impulses. The most common compulsions include repetitive hand-washing, cleaning, praying counting or making things orderly. The most common clinical features of this diagnosis includes; when the patient exhibits distress, the act are consuming and take a large amount of time to accomplish or the illness significantly interferes with the individuals normal routine, work or social life. Most often these patients recognize that their obsession are coming from their own minds and that their compulsions are unreasonable, however sometimes they have poor insight into the base of their condition.

There is no defined cause for OCD however some research suggests there is a lack of communication within the brain itself. These brain structure use the chemical messenger, serotonin, therefore it is believed that insufficient levels of serotonin are involved in the condition.

Treatments usually include tricyclic antidepressants SSRI or monoamine oxidase inhibitors medications such as clomipramine and fluoxetine. In addition, behavior Psycho-therapy has been found to be effective this often includes attention to family member to provide emotional support, reassurance, explanation and advice on how to manage and respond to the patient.

Pseudodementia is a term that suggests an extensive disorder with abnormalities of memory and behavior that mimic organic dementia. Dementia may be defined more as a global deterioration in intellectual function, behavior and personality in the presence of normal consciousness and perception.

Pseudodementia is sometimes seen in conditions of organic brain disease, epilepsy Schizophrenia,. The clinical features typical to Pseudodementia are of a short duration of dementia, equally effect long and short term memory, often the patient will be very detailed about the complaint of "memory disturbance and put emphasis on their disability. Often social skills are diminished, the patient is amnesic to specific events and often they will make very little effort in performing tasks. A observation, sometimes seen in this condition is when the examiner will obtain incorrect answers to question however he will also obtain the impression the patient does know the correct answer, it usually is unclear as to how much of this behavior is deliberately produced.

Scoliosis / Levoscoliosis is a condition in which the spine curves side to side in the shape simulating an "S" causing some of the bone to rotate slightly and can make the patient's waist and/or shoulder appear uneven. Scoliosis affects a very small percent of the population and tends to run in families. It usually begins in childhood and is typically screened for, during well child examinations. However it can occur in adulthood and may be caused by degenerative changes of the spine or osteoporosis. Very severe cases of adult scoliosis can result in severe back pain, deformity or breathing difficulties

Degenerative Joint Disease is a gradual process, it is relatively common in the adult spine, it' s effects are usually minimal, however a large portion of the patients do have pain in the effected area. The intervertebral disc is a structure prone to degenerative changes associated with the wear and tear of aging, use and misuse such as smoking. Overtime the collagen structure, which is a protein, of the annulus fibrosus weakens and may become structurally unsound and the water content decreases. These changes are linked to the disc inability to handle stress. As this disc is now weakened it become susceptible to problems from motion which in some cases causes disc herniation. The pain from degenerative disc disease is usually treated conservatively with heat, rest, exercise and pain medications.

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<p>Canale: Campbell's Operative Orthopaedics, 10th ed., Copyright © 2003 Mosby, Inc.</p>	<p>Ankle Fractures Nonoperative treatment generally is restricted to stable, minimally displaced fractures or to fractures in patients with significant comorbidities that preclude surgery.</p> <p>Injuries about the Ankle joint cause destruction of not only the bony architecture but also often of the ligamentous and soft tissue components. With fractures of the Ankle, only slight variation from normal is compatible with good joint function. Roentgenograms after reduction should be studied with these requirements in mind: (1) the normal relationships of the Ankle mortise must be restored, (2) the weight-bearing alignment of the Ankle must be at a right angle to the longitudinal axis of the leg, and (3) the contours of the articular surface must be as smooth as possible. <u>The best results are obtained by anatomical joint restoration; the method used to accomplish this may be either closed manipulation or open reduction and internal fixation. For most fractures, the latter method most often ensures anatomical joint restoration and union.</u></p>
<p>DeLee: DeLee and Drez's Orthopaedic Sports Medicine, 2nd ed., Copyright © 2003 Elsevier</p>	<p>Section I Sternum and Rib Fractures in Adults and Children Rib and Sternum injuries are relatively rare in athletes and more commonly result from motor vehicle accidents. Treatment of traumatic rib injuries is primarily symptomatic. Most of these fractures are stable. Stable rib fractures are non-displaced or minimally displaced and do not involve more than two consecutive segments. The first mode of treatment is oral analgesic medication to relieve pain, which mainly occurs during inspiration. If this does not relieve the pain, an intercostal "rib block" may offer some temporary relief of spasm. Most sternal fractures do not require more than symptomatic treatment. Pain around the fracture site will last for an average of 11 weeks but persists longer in older patients</p>
<p>Frontera: Essentials of Physical Medicine and Rehabilitation, 1st ed., Copyright © 2002 Hanley and Belfus</p>	<p>Definition A compression fracture is caused by forces transmitted along the vertebral body. The ligaments are intact, and compression fractures are usually stable. Compression fractures in the thoracic vertebrae are commonly seen in osteoporosis with decreased bone mineral density. Such fractures may occur with trivial trauma and are usually stable. Pathologic vertebral fractures may occur with metastatic cancer (commonly in lung, breast, or prostate) as well as other processes affecting vertebrae. Trauma, such as a fall from a height or a motor vehicle accident, can also result in a thoracic compression fracture. Considerable force is required to fracture healthy vertebrae, which are resistant to compression. In such cases, the force required to produce a fracture may cause extension of fracture components into the spinal canal with neurologic findings. There may be evidence of additional trauma such as calcaneal fractures from a fall. Multiple thoracic compression fractures, as seen with osteoporosis, can produce a kyphotic deformity.</p> <p>Symptoms Pain in the thoracic spine over the affected vertebrae is the usual hallmark of the presentation. It may be severe, sharp, exacerbated with movement, and decreased with rest. Severe pain may last 2 to 3 weeks and then decrease over 6 to 8 weeks; however, pain may persist for months. Typically, in osteoporotic fractures, the mid and lower thoracic vertebrae are affected.</p>
<p>Goldman: Cecil Textbook of Medicine, 22nd ed., Copyright ©</p>	<p>Fibromyalgia Pathobiology</p>

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2004 W. B. Saunders Company	<p>Contemporary research has provided a pathobiologic paradigm for understanding Fibromyalgia in terms of abnormalities of sensory processing within the central nervous system which interact with peripheral pain generators and neuroendocrine pathways to generate the wide spectrum of patient symptoms. The term that is used for magnification of sensory impulses within the central nervous system (CNS) is <i>central sensitization</i>.</p> <p>INITIATION AND MAINTENANCE OF Fibromyalgia. Fibromyalgia seldom emerges "out of the blue." Many patients relate an acute injury, repetitive workload, stress, infections, and toxins to its onset. It is not uncommon for a regional pain state to evolve into Fibromyalgia. Fibromyalgia is commonly found as an accompaniment of rheumatoid arthritis, low back pain, systemic lupus erythematosus, Sjögren's syndrome, inflammatory bowel disease, and osteoarthritis. There is a 22% prevalence of Fibromyalgia 1 year after whiplash injuries. There is a variable familial prevalence of Fibromyalgia, suggesting that subjects destined to develop Fibromyalgia are either genetically predisposed (nature), or have past life events or experiences that favor its later development (nurture).</p>
Moore & Jefferson: Handbook of Medical Psychiatry, 2nd ed., Copyright © 2004 Mosby, Inc.	<p>Obsessive Compulsive Disorder Obsessive-compulsive disorder, once known as "obsessive- compulsive neurosis," and occasionally referred to by subtype designations, such as "délire de doute" or "délire de toucher," is a relatively common disorder, with a lifetime prevalence of from 2 to 3%. It is probably equally common among males and females.</p> <p>Patients with this disorder are plagued with recurrent obsessions or compulsions, often with both. Obsessions may manifest as recurrent thoughts, ideas, images, impulses, fears, or doubts. The obsessions are autonomous; although patients who find themselves obsessing may resist them, they are unable to stop them; they come and go on their own. Compulsions, likewise, may manifest in a variety of ways. Patients may feel compelled to touch, to count, to check, to have everything symmetrically arranged, or to repeatedly wash their hands. Attempts to resist the compulsion are met with crescendoing anxiety, which is relieved as soon as the patient gives in to the compulsion.</p> <p>ONSET Most patients fall ill in adolescent or early adult years; onset in childhood is not rare, but onset past the age of 40 is quite rare.</p> <p>Clinical Features: Three disorders associated with obsessive-compulsive disorder are major Depression, Tourettes syndrome, and any of a number of different personality disorders. Perhaps one half of all patients with obsessive-compulsive disorder also have one or more depressive episodes in their lifetimes</p> <p>COURSE Although obsessive-compulsive disorder generally pursues a gradually waxing and waning course, exceptions do occur. In a small minority, perhaps 5%, symptoms will undergo a complete, or near-complete, spontaneous remission; in such cases, however, relapses generally occur in the following years. In another minority of cases, perhaps 10 to 15%, the course is progressively downhill until patients lives are consumed by obsessions and compulsions and their responses to them.</p> <p>ETIOLOGY Family studies have demonstrated an increased prevalence of obsessive-compulsive disorder in the first degree relatives of patients as compared to controls, and twin studies, though not conclusive, suggest a higher concordance rate in monozygotic as</p>

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**	<p>compared to dizygotic twins. There is also, in a subset of patients, a familial relation with Tourettes syndrome. Serotonergic transmission is disturbed in obsessive-compulsive disorder. The only currently available medicines that are consistently effective in obsessive-compulsive disorder, clomipramine and the SSRIs, all preferentially affect serotonergic transmission, with noradrenergic and dopaminergic transmission being relatively unaffected directly.</p> <p>TREATMENT</p> <p>Effective treatment involves using behavior therapy, cognitive therapy, or a serotonergic medication such as clomipramine, or one of the SSRIs of fluoxetine, fluvoxamine, paroxetine, sertraline, citalopram or escitalopram; in most cases patients are best served by a combination of behavior or cognitive therapy plus a medication.</p>