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Introduction

At some point during life, nearly everyone will be affected by back or neck pain. It remains the second most common reason for a visit to the primary care physician after the common cold. Fortunately, the majority of these cases are self-limiting and resolve relatively quickly regardless of treatment. These patients often just require reassurance that their symptoms will resolve with some basic symptomatic treatment including anti-inflammatory medications and physical therapy. Even more important, however, is to be able to recognize which of these patients requires a more extensive evaluation and treatment. There are "red flags" that can help to identify more serious etiologies of spinal disorders including increased pain at rest, extremes of age, history of infection, malignancy or trauma and progressive neurologic deficits. It is crucial for any practitioner caring for a patient with a spinal disorder to be capable of identifying these more serious conditions and guiding the patient to the most appropriate treatment.

As with other medical fields, the amount of information available regarding spinal disorders is ever expanding. It is not possible for the primary care physicians or those early in their specialty training to have a comprehensive understanding of patients with spinal disorders. Instead, being able to properly diagnose the specific spinal disorder and quickly and accurately identify the most serious etiologies is crucial for all practitioners caring for these patients.

Due to limited resources, it is not reasonable for every patient with back or neck pain to receive a comprehensive work up. In fact, many patients begin to have a resolution of their symptoms prior to seeing their physician and having the work up completed. Patients with generalized neck or back pain without radicular pain, paresthesias or weakness and without "red flags" typically do not require imaging studies or referral to a specialist initially. Advanced imaging studies should be reserved for patients with neurologic findings or "red flags" for more serious etiologies. The most serious findings include a progressive neurologic deficit or loss of bowel and bladder control. Patients with these findings typically need emergent imaging and evaluation by a spine specialist. The longer these symptoms are present, the greater the likelihood that they can become permanent.

The most common reason for generalized neck and back pain is a simple muscle strain. Often, there is no specific recollection of an injury, and they typically resolve without treatment. The majority of spinal disorders fall into the category of degenerative disorders

and can include degenerative disk disease, disk herniation and spinal stenosis. These are very common disorders that become more prevalent with age. The development of degenerative spinal disorders is also more common in patients with a strong family history of spine problems due to a genetic predilection for these disorders. Additionally, patients with long-term higher physical demands, such as laborers and contact athletes, have a higher rate of degenerative spinal disorders.

In most cases spinal trauma is the result of a specific injury to the spine that the patient is able to recall. If there are underlying abnormalities in the spine such as severe osteoporosis or spondyloarthropathies, injury to the spine can occur with little to no trauma. The most important initial goals in managing patients with a suspected spine trauma are to assure that the spine is properly stabilized to prevent further injury and identifying and managing coexisting injuries.

Spinal deformities can vary from simple curves that are just observed over time to severe curves in multiple planes that can cause neurologic, cardiac and pulmonary compromise. Less common disorders of the spine include tumor and infection. The majority of spine tumors are the result of metastatic spread of disease to the spine, but primary tumors of the spine can occur, and these need to be properly identified and managed. Infections of the spine can occur from vascular or lymphatic spread from other areas of the body or by direct inoculation as found in postoperative infections. Both tumors and infections of the spine can lead to destruction of the vertebrae and subsequent instability and potential neurologic compromise.

Caring for a patient with a spinal disorder can appear to be a daunting task especially early in one's career. However, with a solid understanding of the basic principles, the practitioners can learn to properly evaluate these complex patients and assure that the patient is provided with the appropriate treatment.

The purpose of this text is to provide an overview of the evaluation and treatment of the patient with a spinal disorder. The text begins with chapters to assist with the evaluation of the patient including medical history and physical examination, biomechanics and imaging studies. The remainder of the text is devoted to more in-depth evaluation and treatment of specific spinal disorders including degenerative, traumatic, deformity, tumor, and infection. There are full-length textbooks devoted to each of these areas, and this text is not expected to be a comprehensive source of information. Instead, it is geared to those looking for succinct summary of the most important information provided in a clear, and easy-to-understand format. It is designed to be completed during a single rotation on a spine service for a resident or medical student.