

Orthopaedic Observations

A Matter of Medicine...

TN Pending

Adult Scoliosis

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The NORMAL SPINE, when viewed from behind, appears straight and symmetrical. Gentle curves are noted in the neck, upper back and lower back, but deviations from the normal alignment and symmetry may reflect scoliosis.

Scoliosis

Scoliosis is defined as a side-to-side curvature from the normal frontal view of the body. In actuality, the deformity occurs in three planes: front-back, side to side, and bottom-top. Though we often think of scoliosis as a condition affecting children, it is also seen in the adult population. Adult scoliosis commonly develops from arthritic changes that cause failure of normal restraints to deformity, such as the facet joints or discs. In other cases of adult scoliosis, there may be progression of a curvature that began in childhood. Curve progression is often associated with degenerative inter-vertebral disc disease. On occasion the arthritic changes of degenerative joint disease of the spine, in middle-aged or older patients, may be due to significant previously present undiagnosed or untreated scoliosis. The remainder of the cases of scoliosis can arise from a variety of causes, including congenital abnormalities, neurological conditions and genetic disorders. Scoliosis is not related to athletic participation, heavy lifting, posture or minor leg length discrepancies.

Clinical

Intermittent backaches occur commonly in adult scoliosis. Complaints of pain radiating into the legs, and limitations in walking are common symptoms that bring patients to the doctor. These types of complaints may be related to spinal conditions associated with adult scoliosis. A family history of spinal deformity is looked for, since certain types of spinal deformity are more prevalent within families.

Examination of the spine is multi-faceted, but begins with an assessment of trunk symmetry. Examining the degree

of asymmetry may give the first clues to the presence of an adult scoliosis. Often, patients feel that they have been losing height or find their trunks shifting. Changes in waistline or the fit of clothing are often subtle first signs that a curvature might be developing. Other findings depend on the deformity location and magnitude. Patients may notice that shoulder heights may be uneven and there may be an increased space between the elbow and trunk because of trunk deviation. The "hip", pelvis or breast may appear prominent. A neurological exam includes evaluation of the function of the muscles and nerves of the extremities.

Radiographic Data

The first step in radiographic evaluation of a patient suspected of developing adult scoliosis is performed with a radiograph done on a single long film. Modern x-ray protocols minimize radiation exposure. These x-rays are assessed for contour and to rule out other abnormalities such as fractures, tumors or metabolic bone disease. If present, the magnitude of the curvature can be calculated from the x-ray.

Based on the history of the symptoms, physical examination and plain radiographs further testing might be ordered. An MRI can provide a different set of information that might quantify the space that is available for the spinal cord or spinal nerves. In addition it can also help determine the etiology behind the symptoms of pain, weakness, numbness or loss of function. Other modalities such as CT scans can add to the picture with more detailed imaging of the bony anatomy or prior surgical procedures.

Treatment Options

Many modalities for treatment exist to deal with the complaints of adult scoliosis. These might include physical therapy, medications, or even a type of cortisone injection known as an epidural steroid injection. Physical therapy can often allow a patient to strengthen the muscles about

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the spine to improve the symptoms. However, it will not correct the deformity that is present. Medications, such as anti-inflammatories, might be appropriate to help quell the pain and improve function.

Epidural steroid injections seek to more aggressively reduce the inflammation around the spinal nerves. However, it too will not alter the mechanical shape of the spine or the spinal canal. This type of cortisone injection can dramatically reduce pain radiating in to the extremities. It is a simple outpatient procedure that does not require anesthesia and can be performed in minutes with the use of a fluoroscope.

Pulmonary and cardiac function impediments from scoliosis are rare, and are not typically seen until curves approach 70°. Once a curve reaches magnitudes in excess of 50°, there is a tendency for the curvature to continue a gradual but persistent increase over time. This magnitude of curvature and resultant cardiac and pulmonary compromise are seen later in life, often from previously undiagnosed or untreated scoliosis of childhood.

The choice of treatment in adult scoliosis is determined by a complex equation. Some of the factors include the patient's physiologic (not chronologic) maturity, curve magnitude and location, and potential for progression.

There is little role for brace (orthotic) management in adult scoliosis, and often the braces are poorly tolerated. When used in a non-operative setting, the primary goal of the brace is to provide symptomatic relief of back pain.

The role of surgery in adult scoliosis is complex and somewhat different than the role in pediatric scoliosis. Often the primary goal in adult scoliosis is to provide relief of the compression of the spinal cord or spinal nerves. Further goals encompass correction of the deformity and improvement in the arthritic pain associated with the deformity. Modern techniques allow for better surgical outcomes and faster recovery.

Summary

Spinal deformity is due to a myriad of causes. The etiology of the adult scoliosis often lies with the arthritic changes that develop normally through life or through a progression of scoliosis from childhood. Treatment varies according to the deformity's cause, location, magnitude, patient maturity and evidence of progression. Treatment decisions are based on a complex equation taking such factors into account. Modern methods of surgical management allow for patients' rapid return to daily activity and dramatic relief of pain.

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He attended Boston University for his undergraduate studies. After graduating Alpha Omega Alpha from Boston University School of Medicine, he traveled to the University of Southern California - Los Angeles Medical Center where he completed his residency in Orthopaedic Surgery. At the University of Southern California - Los Angeles Medical Center he was awarded the Marshall Schiff Award and Herman Epstein award. Dr. Wijsekera specialized in Spinal Surgery at the University of California Davis Medical Center, where he completed fellowship training in all aspects of adult and pediatric spinal surgery.

He has joined The Orthopaedic Group, LLC in New Haven, Connecticut, and brings spinal surgery expertise to a well-rounded and equipped practice of orthopaedic surgeons.