

Spine - Health and Disease

Inflammation and The Spine

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Most episodes of back pain involve a complex inflammatory chemical cascade. Inflammation is the body's first defense against infection and first response to injury. Inflammation represents an immunological process. Normally the process is self-limiting and stops. In some situations, the inflammatory process does not shut down and becomes chronic, leading to further tissue compromise.

Inflammation can occur in a localized area of the spine secondary to physical compromise of the tissue, chemical irritation of the tissue and/or secondary to a local infectious process.

A persistent inflammatory process can lead to a greater amount of scar tissue. The presence of scar tissue can lead to reduced tissue movement and to alteration of blood flow to the area.

Some tissues of the spine such as the intervertebral disc have chemicals that are normally contained but when exposed to neighboring spinal tissues promote inflammation and pain. Spine inflammation can develop secondary to a local insult or process. It can be influenced by systemic or a generalized inflammatory process affecting the entire body. Pro-inflammatory chemicals circulating in the blood may reach the involved area of the spine. Many therapeutic approaches applied to the back are performed in an attempt to reduce inflammation and pain. This includes the use of anti-inflammatory drugs. The presence of inflammation is the basis for the prescription of steroidal and non-steroidal anti-inflammatory drugs.

Spinal Arthritis

Pain associated with an inflammatory process of spinal joints referred to as apophysitis is probably the most common inflammatory condition of the spine. All forms of inflammatory arthritis are associated with pain and related limited mobility of the involved joint.

Rheumatoid Arthritis

Rheumatoid arthritis is a chronic systemic mediated inflammatory condition associated with progressive damage to the synovial lining of joints with a resultant loss of cartilage, bone breakdown, and ligamentous degeneration. It may involve spinal or non-spinal joints. The condition usually affects the hand first. Rheumatoid arthritis has been associated with number of spinal complications, which include discitis, vertebral body erosion, ligamentous erosion, and vertebral instability, as well as spinal cord impression. Many forms of cervical subluxation can occur. The changes can contribute to instability and neurological complications and relatively small percentage of patients with rheumatoid arthritis. RA may results in atlantoaxial instability

(AAI), which occurs secondary to weakening, softening, and rupture of the cervical cranial junction ligaments. AAI is associated with acute active inflammatory tissue injury leading to the development of fibrous tissue.