



## ADHESIVE ARACHNOIDITIS (AA): THE END RESULT OF PATHOLOGIC, SPINAL CANAL JOURNEYS

AA doesn't just happen "out of the blue" or "overnight." It is the tragic end result of sequential pathologic damage, over time, to multiple spinal tissues.

Described here are the two most common pathologic journeys that end in AA.

### Journey 1: Spinal Trauma Including Epidurals, Spinal Puncture, and Surgery Prior to AA

The first pathologic journey is accidental spine trauma or a medical procedure that damages the spinal canal cover which consists of an outer layer (dura) and an inner layer (arachnoid). Due to traumatic damage, the arachnoid becomes inflamed just like a finger that has been hit with a hammer. The inflammation may progress and spread. Eventually the inflammation will contact cauda equina nerve roots and spread into them. After a time ranging from weeks to months, the inflammatory adhesions glue cauda equina nerve roots to the arachnoid forming the disease called AA.

Journey 2: Degenerated Disc Precedes AA: Discs degenerate because they become inflamed due to a pathologic generator such as infection, autoimmunity, or trauma. Persons who have a genetic connective tissue disease, spine anatomic abnormality, or autoimmune disease are at high risk to develop degenerative disc disease. Once inflammation sets in, the disc softens, shrinks, and slips out of its space and presses against the spinal canal cover (dura and arachnoid layers). The inflammation in the disc may spread to the arachnoid membrane and cauda equina nerve roots. As stated in Journey 1, when inflammation produces sticky adhesions in the cauda equina nerve roots and arachnoid, they may glue together forming AA.

Main Message: If the arachnoid becomes inflamed after trauma, epidural injection, spinal puncture, or surgical procedure, there will be headaches, localized back pain, feverishness, and dysphoria that usually starts 7 to 10 days after the procedure. When the cauda equina also becomes inflamed the first early symptoms are shooting pains into the buttocks and legs, burning feet, and the sensation of water or insects on the buttocks or legs. Prevention of AA may be possible in these circumstances by use of one or more anti-inflammatory drugs that are effective inside the spinal canal.

### References:

1. Zang, et al. Intervertebral disc cells produce interleukins found in patients with back pain. *Am J Phymed* 2016;95:407-415.
2. Jackson, et al. does degenerative disc disease of the lumbar spine cause arachnoiditis. *Brit J Radiology* 1994;67:840-847.