

Chymopapain, an enzyme that has been used for chemonucleolysis in treatment of prolapsed discs, also has been implicated in causing epidural fibrosis ([\[1\]](#)) and animal studies show severe nerve damage if injected into the nerve sheath ([\[2\]](#)).

In fact, one paper suggests use of intrathecal chymopapain for use as a model for chemically induced spinal cord injury. ([\[3\]](#))

Chymopapain is a derivative of papaya, thought to react almost exclusively with nucleus pulposus of the disc when administered locally by injection.

The aim is to dissolve extruded disc material thereby relieving compressed nerve roots.

Reported incidence of allergic anaphylactic reactions to chymopapain is 0.3%.
Buchman et al ([\[4\]](#)) described a case of

"hemorrhagic encephalomyelopathy followed by clinically suspected acute arachnoiditis"

as a complication of lumbar injection of chymopapain.

Grainger and Allison, in their textbook, "Diagnostic Radiology" (2nd. Ed.) Cite

"chymopapain inadvertently entering the subarachnoid space"

as a cause of "severe necrotizing arachnoiditis". ([\[5\]](#))

They also show images of a case of severe arachnoiditis following percutaneous discolysis with chymopapain. Axial CT scan after myelography showed matted nerve roots forming irregular filling defects within the thecal sac.

I note that Alexander, a doctor in the US Navy working in the Orthopaedic Centre at Oakland, remarks on the following contraindications for chemonucleolysis ([\[6\]](#)): cauda equina syndrome, Failed Back Surgery Syndrome, sequestered disc fragment, spinal instability, severe spinal stenosis and of course allergy to chymopapain.

Alexander also suggests

"the overall incidence of neurologic complications is about 0.05%",,

basing this on cited articles ([\[7\]](#) , [\[8\]](#)) as well as his own previous clinical experience ([\[9\]](#)).

[\[1\]](#) Austin RT, Zuk JA J R *Coll Surg Edinb* 1989 Feb; 34(1): 30-2 Epidural adhesions after chymopapain chemonucleolysis.

[\[2\]](#) Moon MS, Kim I, Ok IY, Lee KW *Int Orthop* 1990;14(1):79-83 The response of nerve tissue to chymopapain

[\[3\]](#) Wehling P, Pak MA, Georgescu HI *Acta Orthop Belg* 1990; 56(3-4); 539-44 Intrathecal injection of a specific enzyme in rats as a model for chemically induced spinal cord injury.

[4] Buchman A, Wright RB, Wichter MD, Whisler WW, Bosch A. *Neurosurgery* 1985 Feb;16(2):222-4 Hemorrhagic complications after the lumbar injection of chymopapain.

[5] Grainger and Allison Diagnostic Radiology 2nd. Ed. Pp.2067-9

[6] Alexander AH, *Musculo Skeletal Med* 1995; 12:13-24, CHEMONUCLEOLYSIS FOR LUMBAR DISC HERNIATION - How does it stack up to other minimally invasive approaches?

[7] Bouillet R: *Clin Orthop*. 1990; 251:144-152.Treatment of sciatica--a comparative survey of complications of surgical treatment and nucleolysis with chymopapain.

[8] Javid MJ, Nordby EJ: *Neurosurg Quarterly*. 1994; 4(2):92-101.Current status of chymopapain for herniated nucleus pulposus.

[9] Alexander AH: Chymopapain chemonucleolysis. *In* Chapman, M. W. (ed.): Operative Orthopaedics. J. B. Lippincott, Philadelphia, 1993. pp. 2787-2794.