

# The natural course of lumbar spinal stenosis

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It is a wide-spread opinion that the natural course of spinal stenosis is poor and that the patients should be operated on without delay. We have analyzed the course of nonoperated patients with spinal stenosis. For detailed information see Johnsson et al. (1992)

## Patients and method

During 1981–89, 32 patients (24 men and 8 women) with spinal stenosis were observed. The mean age was 60 (42–80) and 61 (51–73) years, respectively. The mean duration of symptoms was 2 years and the mean duration of observation 4 years.

The patients were not operated on for two reasons; the anesthetist refused anesthesia in two cases due to advanced cardiovascular disease, and the remaining patients declined an operation. All the patients had a lumbar myelography and a neurophysiologic examination. Patients who had earlier sustained spinal surgery and patients with impaired circulation in the legs were excluded as were patients with an A-P measure of the dural sac of more than 11 mm. All were clinically examined once a year.

*Clinical symptoms.* 24 patients had neurogenic claudication, 4 had radicular pain, and 4 mixed symptoms. 19 patients had unilateral and 13 bilateral symptoms. All had back pain.

*Plain radiographs* showed spondylosis in all cases. Nine patients had degenerative spondylolisthesis. The mean A-P diameter of the dural sac at the narrowest

level was 7 mm. The most frequent stenotic levels were L3-L4 and L4-L5, and the most stenotic level was L4-L5. Multilevel stenosis was found in 11 patients and complete block in 4 patients.

*Neurophysiologic investigation* was performed in all cases at the time of diagnosis and repeated in 21 patients after an average interval of 4 years.

*Follow-up.* At the time of the last follow-up examination all the patients were sent a questionnaire and asked to compare their situation prior to the myelogram with their present situation on a visual analogue scale graded 0–100. At this time 3 patients were dead and 2 declined to participate. 0–45 on the scale was considered worse, 46–55 unchanged and 56–100 improved. Their walking capacity was estimated in the same way. Their present level of pain was graded on the scale with the words *none* at 0, *mild* at 25, *moderate* at 50, *severe* at 75 and *cannot be worse* at 100.

## Results (Table 1)

The clinical examination of the 27 patients revealed that 5 got worse, 11 were unchanged and 11 improved.

Estimation by visual analogue scale showed that 4 got worse, 19 were unchanged and 4 had improved. The level of pain was moderate in 19 patients.

The walking capacity got worse in 8, was unchanged in 9 and improved in 10. The walking distance of the whole group was unchanged.

Table 1. Summary of the follow-up examination (n 27)

	Clinical examination			Visual analogue scale		
	Worse	Same	Improved	Worse 0–45	Same 46–55	Improved 56–100
Men	1	10	10	1	16	4
Women	4	1	1	3	3	0

The clinical symptoms at the follow-up examination were almost the same: about three quarters had claudication. However, the symptoms were milder in many cases. Bilateral symptoms had a strong tendency to persist. Two thirds had back pain and nearly half used analgesics.

Patients with very narrow A-P diameter had a tendency not to improve.

Neurophysiologic investigation in 21 cases showed substantial progression of the EMG-changes in 8 cases. The neurographic studies showed decreased motor conduction velocity in the legs in 9 patients and decreased sensory conduction velocity in 6.

## Conclusion

The majority of nonoperated-on patients with spinal stenosis remained unchanged after 4 years and severe deterioration was not found. Observation seems to be an alternative to surgery, and immediate operation should be advised only if pain is intolerable or if neurologic symptoms develop.

## References

- Johnsson K-E, Udén A, Rosén I. The effect of decompression on the natural course of spinal stenosis. A comparison of surgically treated and untreated patients. *Spine* 1991; 16: 6.
- Johnsson K-E, Udén A, Rosén I. The natural course of lumbar spinal stenosis. *Clin Orthop* 1992; 279: 80.