

Spinal stenosis—conclusions

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Spinal stenosis as a clinical entity was originally identified by Verbiest in 1949, who subsequently has published several studies related to the pathogenesis, diagnosis and treatment of this condition (Verbiest 1949, 1954, 1992). At the present conference, the definition of spinal stenosis was discussed. It was felt that the distinction of central and lateral spinal stenosis usually is helpful to the surgeon, but these two components of spinal stenosis may often exist at the same time, which has to be taken into account in the diagnosis and treatment of these patients. In terms of definition, it was also made clear during the discussions that the term "spinal stenosis" refers to the pathologic lesions, with narrowing of the spinal canal and/or nerve root canals, while the clinical symptoms with walking impairment is to be referred to as "neurogenic intermittent claudication." However, lateral spinal stenosis often gives the clinical picture of sciatica. Emphasis was put on the importance of adequate knowledge of spinal anatomy in terms of for example nerve root topography, vascular arrangements and bony element characteristics for the understanding of the pathophysiology of spinal stenosis. Double or multiple level cauda equina compression may have a special role in this regard, as based on clinical and experimental evidence (Porter and Ward 1992, Olmarker and Rydevik 1992).

The diagnosis of central spinal stenosis may be made by CT, myelography or MRI. For the routine diagnosis of spinal stenosis one of these investigative modalities is usually sufficient. The advantage of CT and MRI as compared to myelography is that the cross sectional area of the spinal canal can be determined. It has been shown that there is a critical cross sectional area of the dural sac of about 75 mm² at the L3-level in the human lumbar spine, and it has been suggested that spinal stenosis should be defined as values below this cross sectional area (Schönström et al. 1984, 1985). This and other studies indicate the importance of the dural sac dimensions, which are more relevant for the spinal stenosis pathology than the bony canal dimensions. However, there is a close correlation between the AP diameter and the cross sectional area of the dural sac (Schönström et al 1985), which means

that both these measurements are of relevance for the diagnosis of spinal stenosis. However, it was concluded during the discussion that one should not focus the attention only on measurements of dural sac AP diameter or cross sectional area, but to take into account also the "overall" picture in terms of for example multiple level compression, concomitant central and lateral stenosis, etc. The choice between myelography, CT or MRI depends on issues such as costs, access to equipment and skill of radiologists (Modic et al 1991, Kent et al 1992). In the clinical diagnosis of lateral spinal stenosis it is often of value to use diagnostic nerve root blocks to determine the symptomatic nerve root (van Akkerveeken 1989). It should be emphasized that pathologic findings on CT and MRI indicating spinal stenosis are common and have been reported to occur in up to 28% of asymptomatic individuals (Kent et al. 1992). This strongly indicates that one must require correlation between the patients symptoms and the CT/MRI-images before considering surgical treatment.

Regarding the treatment of spinal stenosis it was emphasized that surgical intervention should be considered only following adequate conservative treatment and that the natural history of spinal stenosis often is characterized by a fairly slow progression of symptoms (Johnsson et al. 1991). It was concluded that meticulous attention to careful surgical technique is very important. The issue of the extent of surgical decompression was thoroughly discussed. It was concluded that one should attempt to surgically decompress all neural elements which might be compressed and involved in the symptomatology. However, one should aim at not destabilizing the spine if possible, i.e. use a facet-preserving technique, which may well be compatible with a low risk for post-operative vertebral slipping (Jönsson et al. 1992). Fusion following decompression should be considered a) if the spine shows signs of being unstable preoperatively as evident by for example the existence of degenerative spondylolisthesis at the involved segment or b) if the decompression involves facetectomy leading to segmental destabilization (Strömqvist 1993). One may

expect a higher probability of good treatment results if a fusion is added in these cases (Lombardi et al 1985, Herkowitz and Kurz 1991). However, at this time there does not seem to be a general consensus on the surgical technique to use in various cases of spinal stenosis or which outcome measures that most accurately reflect the treatment results. For further knowledge in this field, adequately designed, prospective randomized clinical trials are required. Such scientific studies may lead to improved information on predictors for treatment outcome as well as indications for various kinds of treatment modalities.

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