formation of spondylosis deformans but with very little changes of the meninges.

Pathologic conditions of the meninges following cervical spondylosis, therefore, are seemed to have some correlations to the mechanism through which neurological manifestations of the disease appear.

87. Level Diagnosis of the Lumber Disc Protrusion without Myelography and Results of the Surgical Treatment

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The diagnosis of lumbar disc protrusion can easily be established basing on the history of illness and clinical findings. When the clinical findings are typical the level diagnosis of protrusion can be made without myelography basing upon the following points. In the cases with a protrusion between L₃ and L₄ tenderness along the femoral nerve, positive Wassermann's sign, sensory disturbance in the area of the affected segment and narrowness of the intervertebral space between L₃ and L₄ in x-ray picture are frequently observed. The protrusion between L₄ and L₅ not infrequently shows decrease of extension power of the big toe, sensory disturbance in the lateral aspect of the foot and narrowness of the intervertebral space between L₄ and L₅ in x-ray picture. On the other hand, the protrusion between L₅ and S₁ frequently shows decrease of flexion power of the big toe, sensory disturbance in the medial aspect of the foot and radiological narrowness of the intervertebral space between L₅ and sacrum.

However, as in the last two levels differential diagnosis is sometimes difficult, it should always be done that the interarcuate ligaments of those two levels are removed and the intervertebral spaces are examined for the protrusion.

The follow-up study of 111 cases of lumbar disc protrusion operated without myelography and of 800 cases operated with myelography showed that the former has much less postoperative low back trouble, earlier come back to the original occupation (71.3%-53.0%...4 months postoperatively, 88.4%-83.4%...6 months postoperatively) and less change of occupation after the surgery (3.1%-7.1%) than the latter.

As the excellent results of the operation without myelography indicates, above mentioned line of treatment is considered to be one of standards of the surgical treatment of lumbar disc protrusion.