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Prevention of epidural fibrosis in patients with herniated intervertebral discs.

O.M. Sariboev
Private clinic “SMS”, Andijan, Uzbekistan.

Herniated intervertebral discs are considered one of the most common pathologies. Despite the improvement of modern surgical methods for their treatment, the problem of postoperative complications remains relevant. Surgical intervention was not the solution for the treatment of lumbar osteochondrosis. In some patients, lumbar and radicular pain persists or recurs in the postoperative period. Despite the improvement of diagnostic methods and surgical treatment, most authors note unsatisfactory results in 14-32% of cases. Material and research methods. As is known, one of the most common causes of the so-called “unsuccessfully operated spine syndrome” is compression of the nerve root in the postoperative period by adhesive formations in the epidural space. Many methods have been proposed to prevent this phenomenon, from installing a drainage tube to special enveloping gels. Each method has a number of disadvantages, such as low efficiency, technical complexity or high cost. Taking these factors into account, we have proposed a method for intraoperative prevention of epidural fibrosis. The essence of the method: discectomy is performed through a classic interlaminar approach. After careful hemostasis, autologous fat is placed on the area of the removed intervertebral disc herniation, taken directly from the patient during surgery, and this fat envelops the root and fills the epidural space above it. Taking into account the fact that fat is absorbed faster than the healing processes are completed, autologous fat, which forms a kind of biobarrier, is filled with 128 E of hyaluronic acid (Lidase), dissolved in 10 ml of a 0.5% solution of novocaine hydrochloride. This action helps accelerate the healing of muscles injured during surgery and the formation of a film on the autoimplant. This prevents the entry of destroyed myoglobin into the epidural space and the development of rough scar-adhesive compressive formations around the nerve root.

The material used was data from 125 patients who underwent discectomy in the departments of neurosurgery and vertebrology of the Andrei State Medical Institute. The patients were divided into the main (57 patients) and control (68 patients) groups. All patients of the main group underwent the proposed method of intraoperative prevention of epidural fibrosis.

The intensity of pain before surgery in patients in both groups was approximately the same and averaged 7-9 points on the visual analog pain scale. When analyzing data from the Oswestry questionnaire, no significant differences were observed between the groups.

Results and its discussion. The results of the surgical study were studied at 3, 6 and 12 months after surgery. The results were assessed using contrast-enhanced MRI, the intensity and severity of pain were assessed, and the condition of the patients was assessed using the Oswestry questionnaire.

At a 12-month follow-up, the majority of patients in both groups did not experience pain in the main group - 43 (75.4%) patients, in the control group - 41 (60.3%) patients. Mild pain was observed in 14 (24.6%) patients in the main group and in 23 (33.8%) patients in the control group.

When visualized at a six-month follow-up, not a single case of signs of scarring of the epidural space was observed in the main group, and in the control group, epidural fibrosis was visualized in two patients, although with minor clinical manifestations of compression of the spinal cord roots.

Conclusion. The use of the proposed method of intraoperative prevention of epidural fibrosis, based on the creation of a biobarrier between the injured muscle layer and the epidural space, as well as stimulation of regeneration of the muscles of the lumbar region, allows us to completely eliminate the risk of developing epidural fibrosis in the operated spinal motion segment and reduce the likelihood of recurrence of radicular pain syndrome by 17. 7%.