

Saidov Sokhib Saidmurodovich,
Republican Scientific Centre of Neurosurgery,
a scientific researcher, Tashkent, Uzbekistan
E-mail: dr_sssnan@mail.ru
Khalikov Shukhrat Ashurovich,
Mirzabaev Marat Djumabekovich,
Sultonov Akbar Akmalovich,
Kholnazarov Firdavs Husenovich

The prophylactics of the epidural scar after discectomy at failed back surgery syndrome in lumbar osteochondrosis

Abstract: The proposed method of saving the yellow ligament in discectomy differs from existing ones with that, that in it performed the edge arcotomy of higher and lower archs with the help of Kerrison's instrument; the yellow ligament exempts from its attachment to the bone structures with the saving it to the lateral edge of the vertebra at the site of facet joints with the length of about 4 mm. yellow ligament is taken by the ligature, and after the disc removal returns to its original position and fixed to the surrounding tissues.

Keywords: failed back surgery syndrome, discectomy, preservation of yellow ligament, epidural scars.

The failed back surgery syndrome is a condition characterized by postoperative pain in the lower back and/or leg with a various degree of functional disability, which reduces the quality of life and labour activity of the patient.

Herniated discs are among the most frequent pathological substrates of this disease and are largely responsible for the development of the group compressive syndromes requiring surgical treatment. Observed in recent years, the increase in surgical activity the treatment of compression forms of lumbar osteochondrosis actively contributes to the development and improvement of operational methods [4, 190–192; 11, 262–263].

According to some authors, the incidence of epidural scars reaches 8–25 % among other reasons of unsatisfactory outcomes at a distant period of lumbar discectomy [3, 159; 6, 64–67; 14, 287–288]. Epidural scars in the postoperative period due to compression of neural structures contributes to chronic pain, is quite difficult to treat, leading to a significant percentage of disability of patients and serious economic losses [7, 26–32; 10, 89].

Mechanisms of excessive formation of connective tissue in the epidural space in response to the surgical trauma are still not completely investigated. Significantly it is not clear why under the same conditions in patients after surgery developed either are entirely absent epidural scars of varying severity.

It is early considered that fibrous tissue grows into the epidural space from the damaged disk. In the works of Laroc and Macnab the main cause of scars is the migration of fibroblasts, mostly from corrupted when accessed paraspinal muscles. Additional factors stimulating the development of scar adhesions may be products of blood disintegration, hence there is the need to put drainage after the operation. In the first 3 weeks in the surgery area is formed granulation,

and then fibrous tissue with the formation of epidural scar. Scar tissue “in the place of surgery in varying degrees, is developing three months later” [10, 89].

By 6 months, swelling in the epidural space completely replaced by scars, which may slightly decrease in volume in the first year after the operation. Not always the severity of epidural scars is “proportional” to pain syndrome that may be the result of the degree of compression of the spine of the scar adhesions periradicular and different capabilities of the applied x-ray diagnostic methods in the postoperative period.

A method is developed for predicting the severity of epidural scars by taking into consideration anthropometric, immunological and immunogenetic data that take into account about 20 different indicators. The disadvantage of using this method is that it allows for an uncertain prognosis [8, 68–73].

You can solve the problem intraoperatively. Intraoperative topical application of urokinase, mitomycin-C, tissue plasminogen activator, hyaluronic acid, corticosteroids, radiation therapy did not lead to the expected results [2, 507–513; 5, 68].

Some authors use a piece of hemostatic sponge on *dura mater* and the root at the end of operation that, in their opinion, improves the condition of patients in the postoperative period [9, 141]; It is noted the positive effect of the material “tachocomb” (Nycomed), having hemostatic and neuroprotective effect and easy to use [13, 167]. A method is developed for plastics of postoperative defect after microdiscectomy using dorsolumbar fascia [12, 32–34].

An important role in the prevention of scar adhesions plays an organ-saving surgery. Preservation of yellow ligament during discectomy reduces the formation of epidural and periradicular scar, as the yellow ligament in this case performs the function of the natural anatomic barrier attached to the *dura mater* [1, 5–13; 5, 68].

An important condition of all above techniques is the availability of a wide interarch space with the projection of the root base in this area.

Thus, one of the ways to improve the results of surgical treatment is the prevention of epidural scars through control over the process of formation of the connective tissue or by protecting the neurovascular structures.

The aim of our work is to improve the results of surgical treatment of herniated discs and preventing the formation of epidural scars with preservation of the yellow ligament.

Materials and methods

This method differs from the existing ones, with its simplicity and in it interlaminectomy with the help of bone-clippers is made. First processed the arch of the overlying vertebra with the use of bone-clippers of big size. By thinning of the bone structure the cutters are replaced at a smaller size for more economical resection of arches. In the process of above manipulations the yellow ligament is released from its attachment to the bone structures with preservation of its attachment to the lateral area of the facet joint, with the length of 4–5 mm. in the medial edge of the bow of the overlying vertebra. The yellow ligament is put aside on the ligature, and after removal of the herniated disc returns to its original position and fixed to the surrounding tissues by one or two stitches.

According to this method, we operated 24 patients under general endotracheal anesthesia with disc herniation L4-L5, L5-S1 of lumbar-sacral spine in the period on 2013 in the “Republican Scientific Center of Neurosurgery in the Department of Pathology of the spine and spinal cord”. The age of the patients varied from 21 to 70 years. The average age was $41,4 \pm 9,6$. From observation were excluded cases of sacralization, lumbalization of vertebrae, spinal stenosis, extraforaminal disc herniation, subligament migration of hernias more than 4–5 mm. cranially and caudally, lateral (foraminal hernia), and patients with signs of instability in the lumbar-sacral spine. In the immediate postoperative period, all patients reported significant improvement, there were no complications.

Results and discussion

In the postoperative period, 18 patients underwent MRI control (including contrast) to assess the severity of the scar-adhesive changes in the surgical area after 6 months.

The intensity of pain before and after surgery was evaluated by the scale of VAS (visual analog scale).

During pre-surgical period the evaluation of patients' pain made in 4 patients 7 points, in 8 patients 8 points, in 6 patients 9 and in the remaining 10 points. Before discharge, pain assessment showed the following indications: in 11 patients 1 point, in 7 patients 2 points, in 5 patients 3 points and in 1 patient 4 points respectively.

To assess the neurological symptoms of the patients in our study was used the questionnaire NASS (consists of 17 criteria). Before surgery the evaluation of neurological symptoms in patients ranged from 76 to 95 points. Postoperatively, patients were assessed on the 2nd day after surgery, before discharge and after 6 months. In the preoperative period, the assessment of neurological symptoms patients included in 8 patients 76 points, in 9 patients 84 points, in 7 patients 95 points. Before discharge, pain assessment showed the following indicators: in 15 patients 28 points, in 6 patients 32 points, in 3 patients 36 points, respectively. The observation period for patients with preservation of the yellow ligament in postoperative period made 6 months.

Conclusion

1. This method enables direct visualization and manipulation on neural structures, disc herniation and enhances the conservation of the yellow ligament when performing a discectomy.
2. In this way remains the ligaments of the vertebral segment, contributes the reduction of symptoms of epidural and periradicular scars.
3. Perhaps a combination of the foregoing methods of preventing scar adhesions in particular the right combinations will affect the solution to the problem in general.

References:

1. Aydin Y., Ziyal I. M., Duman H. et al. Clinical and radiological results of lumbar microdiscectomy technique with preserving of ligamentum flavum comparing to the standard microdiscectomy technique. // *Surg. Neurol.* – 2002. – Vol. 57 (1). – P. 5–13.
2. Bora H., Aykol S. V., Akyurek N. et al. Inhibition of epidural scar tissue formation after spinal surgery: external radiation vs. spinal membrane application. // *Int. J. Radiat. Oncol. Biol. Phys.* – 2001. – Vol. 51. – P. 507–513.
3. Chapandze G. N., Dreval O. N., Kuznetsov A. V. The use of the biodegradable material in lumbar microdiscectomy. // *Siberian international neurosurgical forum: thesis report.* – Novosibirsk, 2012. – P. 159.
4. Cornetov H. A. The doctrine of the constitution of man in medicine: historical retrospective to the present day. // H. A. Cornetov // *Materials of the IV International Congress on integrative anthropology.* – SPb., 2002. – P. 190–192.
5. De Divitiis E., Cappabianca P. Lumbar discectomy with preservation of the ligamentum flavum. // *Surg. Neurol.* – 2002. – Vol. 58 (1). – P. 68.
6. Dralyuk M. G., Rudenko P. G., Chumakov V. P. Microdiscectomy with preservation of the yellow ligament. // *Spine Surgery.* – 2006. – №. 3. – P. 64–67.
7. Guscha O. A., Shevelev I. N., Arrestov S. O. Experience of endoscopic interventions in the pathology of the spine. // *J. Neurosurgery questions by. N. N. Burdenko.* – 2007. – № 2. – P. 26–32.
8. Isaeva N. V., Draluk M. G., Nikolaev V. G. Prediction of the risk of epidural fibrosis in patients after surgical removal of herniated lumbar intervertebral discs. // *Neurological News.* – 2010. – Vol XLII. – № 2. – P. 68–73.

9. Kostylev A.N., Derin M.A., Kalinin S.A., Mayorov A.Yu. Complex approach to treatment of lumbosacral pain syndromes.//Siberian international neurosurgical forum: thesis report. – Novosibirsk, 2012. – P. 141.
10. Kozyrev S.V. The capabilities of magnetic resonance imaging in complex diagnosis of postoperative changes in microdiscectomy of spine lumbar division: dis. of candidate. med. sciences. – SPb., 2011. – 89 p.
11. Kuschaev G.B. Prevention of scar-adhesive epiduritis (epidural fibrosis) in the lumbar microdiscectomy.//S.V. Kudaev, E. G. Pedachenko//Book of abstracts III Congress of neurosurgeons of Russia. – SPb., 2002. – P. 262–263.
12. Nuraliev H.A. The Preventive maintenance of scar-adhesive epiduritis in surgical treatment of lumbar division of the spine osteochondrosis.//Traumatology and orthopedics of Russia. – 2009. – № 1 (51) – P. 32–34.
13. Sagun A.E., Lyubishev I.S. Prevention of postoperative scar adhesions in surgery of hernias.//all-Russian scientific-practical conf. “Polenov’s readings”: thesis report. – SPb., 2012. – P. 167.
14. Toptygin S.V., Parfenov V.E., Scherbuk Yu.A. The use of differentiated microsurgical approaches and intraoperative endovideomonitoring to prevent recurrence of lumbosacral radiculitis.//all-Russian. scientific-practical conf. “ Polenov’s readings”: thesis report. – SPb., 2002. – P. 287–288.

*Sarsekeyeva Nazgul Yesentaevna,
Karaganda state medical university,
doctoral student specialty 6D110100 Medicine
E-mail: sarsekeeva.04@mail.ru*

Liver fibrosis of patients with chronic viral hepatitis B+C

Abstract: The article deals with the problem of combined chronic viral hepatitis B and C. The paper presents the results of clinical and laboratory studies of patients with chronic viral hepatitis B+C. The author analyzes the results of liver elastomers in patients with chronic viral hepatitis B+C.

Keywords: liver fibrosis, liver cirrhosis.

At the present stage viral hepatitis remains one of the most important problems of infectious pathology and cause great damage for public health and economic development of our country. In the structure of hepatitis B viral hepatitis with parenteral transmission mechanism, namely, viral hepatitis B and C occupy a leading position.

Today there is no common theory of the pathogenesis of chronic viral hepatitis. Processes such as chronic inflammation, including the inflammatory repair as a mandatory component and the process of tissue repair in response to liver damage are opposed unreasonably. Some researchers have linked the progress of chronic viral hepatitis with the development of an immune inflammation; other authors consider the formation of liver cirrhosis as the result of stroma repair breach and the hepatocytes in the portal tracts and hepatic parenchyma damaged areas [1–4].

In the base of pathogenesis of inflammatory and fibrotic changes in the liver in chronic hepatitis B and C, leading to poor outcomes for these infections there are complex interactions between the virus and the host immune system, and any damage of the liver tissue under these infections is immune-mediated. However, most modern scholars focus on the study of the immune response specific mechanisms in the immunopathogenesis of chronic viral liver disease, which naturally appears as insufficient studied the role of the innate immune factors and has the actual aspect of the problem decision at all [4; 5].

Chronic viral hepatitis B often develops in patients with progressive course of acute hepatitis B, combined with discordantly

high replicative activity of HBV, and rarely with primary chronicity of HBV-infection. The chronic form of viral hepatitis in its turn may cause the changing of liver tissue to fibrotic, liver cirrhosis, and also hepatocellular carcinoma of liver [6–8].

In comparison with other viral pathogens of serum hepatitis, HCV has the highest chronic potential. Patients with hepatitis C, especially chronic ones and chronic latent patients of HCV, are the source of infection. Chronic hepatitis C is accompanied by a progressive increase in liver fibrosis that the outcome of the disease leads to cirrhosis — not reversible changes in liver at high risk of fatal complications, including primary liver cancer. Most patients with biochemical signs of chronic hepatitis C have a favorable course — mild or moderate inflammatory activity in the liver tissue and minimal fibrosis [9–11].

The main differences in the course of chronic hepatitis B and chronic hepatitis C are determined by the interaction of virus and the human immune system in the initial stages of hepatitis virus infection.

The main way of progression of chronic diffuse liver disease — is the development of successive stages of liver fibrosis with eventually formation of cirrhosis and liver cancer, which mainly determines bad life prognosis and short survival date of this patient category [1].

According to the results of morphological studies of the liver we can diagnose hepatitis of different stages of activity and on the basis of assessment of such factors as the severity of inflammation and fibrosis. The rate of liver fibrosis depends on the activity of the inflammatory process in the liver [12].