



DIFFERENTIATED SURGICAL TREATMENT OF CERVICAL SPINAL CANAL STENOSIS

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Abstract. The results of surgical treatment of 81 patients with degenerative stenosis of the cervical spinal canal were analyzed: 59 men (72.8%), 22 women (27.2%), the age of patients was from 27 to 71 years. Anterior cervical decompression and spondylodesis were performed in 58 patients, anterior cervical decompression with corpectomy and fixation - 12, laminectomy - 6, laminoplasty - 2, interlaminar decompression with partial facetectomy - 3. Based on the differentiated approach to surgical treatment of cervical stenosis, an algorithm for choosing the type of surgical access was developed. The dynamics of postoperative regression of neurological deficit continues up to 3-6 months. Excellent results were obtained in 52 (64.2%) patients, good and satisfactory results were obtained in 20 (24.7%) and 7 (8.6%) patients, respectively, and unsatisfactory results were obtained in 2 (2.5%) patients.

Key words: degenerative stenosis, spinal canal, surgical treatment.

Аннотация: Проанализированы результаты хирургического лечения 81 больного с дегенеративным стенозом шейного отдела позвоночного канала - мужчин 59 (72,8%), женщин 22 (27,2%), возраст больных - от 27 лет до 71 года. Передняя шейная декомпрессия и спондилодез выполнены 58 больным, передняя шейная декомпрессия с корпорэктомией и фиксацией - 12, ламинэктомия - 6, ламинопластика - 2, интерламинарная декомпрессия с частичной фасетэктомией - 3. На основании дифференцированного подхода к хирургическому лечению шейного стеноза разработан алгоритм выбора вида хирургического доступа. Динамика послеоперационного регресса неврологического дефицита продолжается до 3-6 месяцев. Отличный результат получен у 52 (64,2%) больных, хороший и удовлетворительный - соответственно у 20 (24,7%) и 7 (8,6%), неудовлетворительный - у 2 (2,5%).

Ключевые слова: дегенеративный стеноз, позвоночный канал, хирургическое лечение.

Annotatsiya: Bo'yin umurtqa kanalining degenerativ stenozi bilan og'rigan 81 nafar bemorni jarrohlik davolash natijalari tahlil qilindi: 59 erkak (72,8%), 22 ayol (27,2%), bemorlarning yoshi 27 yoshdan 71 yoshgacha. 58 nafar bemorda bachadon bo'yni oldingi dekompressiyasi va spondilodez, korpektomiya va fiksatsiya bilan oldingi bachadon bo'yni dekompressiyasi - 12, laminektomiya - 6, laminoplastika - 2, qisman facetektomiya bilan interlaminar dekompressiya - 3 bemorda amalga oshirildi. jarrohlik kirish turini tanlash algoritmi ishlab chiqildi. Nevrologik yetishmovchilikning operatsiyadan keyingi regressiyasi dinamikasi 3-6 oygacha davom etadi. 52 (64,2%) bemorda ijobiy natijalar, 20 (24,7%) va 7 (8,6%) bemorda yaxshi va qoniqarli natijalar, 2 (2,5%) bemorda qoniqarsiz natijalar kuzatildi.

Kalit so'zlar: degenerativ stenozi, orqa miya kanali, jarrohlik usulida davolash.

Introduction. The problem of choosing the tactics of treatment of narrowing of the spinal canal, in particular surgical, has not been fully resolved. Various schools of neurosurgeons and orthopedists have proposed various methods of surgical treatment of spinal canal stenosis. However, when using these methods, almost 25% of cases have negative results in the form of an increase in movement disorders, the occurrence of restenosis, as well as the syndrome of "unsuccessfully operated spine" [1-4].

In the available literature, we did not find comprehensive data on the scope and types of surgical intervention for cervical degenerative stenosis.

Objective. Development of an algorithm for differentiated surgical treatment of patients with degenerative stenosis of the cervical spinal canal.

MATERIAL AND METHODS

A complete clinical examination (general somatic, orthopedic -neurological, radiological, neurophysiological, computed tomography and magnetic resonance imaging) was performed on 81 patients with degenerative stenosis of the cervical spinal canal, who were treated in our clinic. Among the examined patients, there were 59 men (72.8%), 22 women (27.2%), the age of the patients ranged from 27 to 71 years.

RESULTS AND DISCUSSION

A differentiated approach to surgical treatment of patients with compression lesions at the level of the cervical spine requires careful preoperative planning of surgical intervention, taking into account the anatomical location of the compressing factor and the characteristics of the clinical syndrome.

The main problem of the surgical strategy for the treatment of degenerative cervical stenosis is the choice of an adequate direction for decompression of the spinal canal.

All patients with degenerative cervical stenosis examined by us were operated. The goal of the operation was adequate decompression of the neurovascular formations of the spinal canal with provision of reliable stabilization of the spinal motor segment. The diagnosis was verified during the operation and confirmed histologically.

Surgical intervention was performed from the anterolateral or posterior approach. Anterior cervical decompression and fusion were performed in 58 patients, anterior cervical decompression with corpectomy and fixation - 12, laminectomy - 6, laminoplasty - 2, interlaminar decompression with partial facetectomy - 3.

The choice of surgical decompression was determined based on the direction of the compression vector and the presence of instability and/or deformity of the spine.

An indication for surgical treatment of cervical degenerative stenosis is the presence of several factors in the patient:

- clinical and neurological picture of compression myelopathy and/or radiculomyelopathy ;
- progressive clinical and neurological picture of radiculopathy with the appearance of precursors and/or myeloradiculosischemia ;
- reliable neuroimaging data indicating stenosis of the spinal canal (central and/or lateral part) and compression of the spinal cord and/or spinal roots;
- the presence of signs of compression of the spinal roots that does not respond to conservative therapy within 6 weeks.

Contraindication to surgery was the presence of a severe somatic disease in the patient. In these cases, in the absence of absolute indications for surgery, patients were first given somatic treatment by a relevant specialist, followed by hospitalization for surgical treatment.

When determining the indications for surgery, we proceeded from the fact that long-term compression of neurovascular formations can cause irreversible changes, so the surgery was performed without preliminary conservative treatment.

Anterior cervical discectomy interbody spondylodesis was performed in 58 (71.6%) patients. All operations were performed under intubation anesthesia. Caution is necessary with regard to hyperextension in patients with severe stenoses and large intracanal compressing factors.

The method of anterior corpectomy with plate stabilization was used in 12 (14.8%) patients. Removal of the body at one level was used in 9 patients, 2 bodies - in 2. This type of surgical intervention was performed on patients with multilevel stenosis of the spinal canal, ossification of the posterior longitudinal ligament and kyphotic deformity of the cervical spine.

Decompressive operations from the posterior approach were performed in 11 (13.6%) patients: 6 underwent laminectomy, 2 underwent cervical laminoplasty, 3 underwent interlaminar decompression.

Indications for laminoplasty and laminectomy are multilevel stenosis (3 levels or more) with posterior compression factors, hyperlordosis.

The posterior intralaminar approach with partial facetectomy was performed exclusively with a lateral location of the compression factor in 3 (3.7%) patients.

The patients were allowed to get up the next day after the operation. Prophylactic treatment with broad-spectrum antibiotics, anti-edematous, vascular, nootropic therapy was carried out. The patients received a course of physiotherapy, exercise therapy. Periodic use of a head support such as a Shantz bandage for 4-6 weeks was recommended.

Two patients underwent two-stage circular decompression: at the first stage - anterior corpectomy with interbody spondylodesis and fixation, and the second - laminectomy.

Based on the above criteria and the algorithm for choosing the direction of surgical access, we have formulated differentiated indications for surgical interventions:

Anterior cervical access with discectomy / corpectomy, spondylodesis and, if necessary, spinal fixation is performed in the presence of kyphosis, verified anterior compression (according to MRI data), the extent of the lesion is no more than 3 vertebrae, and severe instability.

The posterior median approach (in the form of laminectomy or laminoplasty) is used in the presence of extensive (preferably posterior) compression in combination with effective lordosis when ossification of the posterior longitudinal ligament is detected.

In rare cases of lateral or foraminal stenosis, it is advisable to use intralaminar access.

To assess the severity of clinical manifestations of cervical myelopathy and the degree of recovery of neurological deficit before and after surgery, the Japanese Orthopedic Association scale was used (Japanese Orthopedic Association scoring system for cervical myelopathy) [5]. The scale allows characterizing the severity of clinical manifestations of cervical myelopathy in a digital aspect and makes it possible to determine the recovery index as a percentage. The maximum score is 17.

The recovery index was determined by the formula: $(\text{postoperative score} - \text{preoperative score}) / (17 - \text{preoperative score}) \times 100$. The result was considered excellent with a recovery index of more than 75%, good - an index from 50 to 74%, satisfactory - an index from 25 to 49%, unsatisfactory - an index below 25%.

Comparison of the results of surgical treatment of degenerative cervical stenosis showed that the dynamics of regression of neurological deficit continues for 3-6 months. Excellent results were obtained in 52 (64.2%) patients, good and satisfactory - in 20 (24.7%) and 7 (8.6%), respectively, unsatisfactory - in 2 (2.5%).

Thus, the use of a differentiated approach to surgical treatment of degenerative cervical stenosis has shown its effectiveness in achieving excellent and good results in 64.2 and 24.7% of our patients, respectively.

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