BRITISH MEDICAL JOURNAL

British Medical Journal

Volume 3, No.2, March 2023

Internet address: http://ejournals.id/index.php/bmj
E-mail: info@ejournals.id
Published by British Medical Journal
Issued Bimonthly
3 knoll drive. London. N14 5LU United Kingdom
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RESULTS OF SURGICAL TREATMENT OF TRAUMATIC INJURIES OF THE LOWER VERTEBRAS IN THE EARLY PERIOD

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Aim. Improving the results of surgical treatment of patients with injuries of the cervical spine by using modified methods of spinal fusion in the early period of injury.

Material and methods. The results of surgical treatment of 76 patients with traumatic injury of the cervical spine from 2009 to 2021 were analyzed. Verification of the nature of the injury and indications for surgical treatment were carried out on the basis of SLIC classification systems. Neurological deficits were assessed on the Frenkel scale. The results of surgical treatment were evaluated in 76 patients in terms of 6 to 24 months. In the long-term period, all patients underwent an overview radiography of the cervical spine, and residual neurological symptoms - MSCT and MRI. It is concluded that the method of surgical treatment depends on the type of injury, the nature of neurological disorders and the surgeon's experience in applying each of the techniques.

Keywords: traumatic injuries, compression of the spinal cord, spinal fusion, fractures.

The relevance of research. Traumatic injuries at the subaxial level are accompanied by a violation of the integrity of the vertebrae with partial or complete dysfunction of the spinal cord [1;2]. Simultaneous gross deformity of the vertebral body occurs with the occurrence of a fracture of the vertebral body without dislocation and a fracture of the vertebral body with dislocation of the vertebra [6;7].

Such a gross deformation of the spinal canal leads to displacement, compression of the dural sac and spinal cord. There is a traumatic shock of the spinal cord, compression of the spinal cord [4]. Paresis and paralysis of varying severity develop. Usually the condition of such patients is very severe, with a violation of the act of breathing. Issues of providing specialized assistance are not always fully resolved. Therefore, the clinical picture with every hour, every day, intensively worsens. The lack of specialists in district medical institutions is fraught with aggravation of the general condition of the patient [8;11]. Undoubtedly, this is the primary task of providing qualified assistance to patients with damage to the cervical spine at the subaxial level. The result of treatment is influenced by such factors as the organization of delivery of patients to a specialized department, the choice of treatment method, the degree of deformation of the spinal canal, and the duration of compression of the spinal cord [10]. Given the above, we considered it necessary to share our experience in treating patients with traumatic injuries at the subaxial level in the early period [3;5;9].

Purpose of the study. Improving the results of surgical treatment of patients with injuries of the cervical spine by using modified methods of fusion in the early period of injury.

Material and methods. We studied 76 case histories of patients with various types of damage to the cervical spine at the subaxial level. There were 51 men and 25 women. The age of the patients varied from 18 to 63 years. The mean age was 37ё4.3 years.

The study of the causes of injury revealed the following:

1) road accident - 46 patients;
2) Catatrauma - 21 patients;
3) Accidents - 9 patients.

According to the type of damage to the cervical spine, we divided the patients into three groups:

1) tipping dislocation VC5 - 21 patients;
2) fracture-dislocation VC4-5 - 26 patients;
3) fracture of the vertebral body VC6 - 29 patients.

We studied the time of delivery of patients to the neurosurgical departments of the Andijan State Medical Institute clinics and Andijan branch Republican scientific center of emergency medicine by groups.

I. Patients of the first group were delivered to a specialized department on the 3rd day, i.e. 72 hours after the injury;

II. patients of the second group were delivered to a specialized department on the 4th day; 96 hours after the injury;

III. patients of the third group were delivered to a specialized department on the 7th day from the moment of injury.

Patients were evacuated to a specialized department in an ambulance with fixation of the cervical spine with a Philadelphia-type fixation collar, accompanied by an ambulance doctor.

Patients underwent the following types of examinations: changes in bone and ligament structures, intervertebral discs, visualization of the spinal cord and roots were especially carefully studied, and a full range of X-ray examinations, including MSCT, as well as MRI, were performed to assess the degree of compression of neural structures. Plain radiography of the cervical spine in direct and lateral projections was performed in patients without gross neurological manifestations.

Verification of the nature of damage and indications for surgical treatment was carried out on the basis of the classification systems SLIC 2010. Neurological deficit was assessed using the Frenkel scale.

Based on the results of these studies, patients with types of damage to the spinal motion segment were separately grouped to develop treatment tactics and the type of spinal cord decompression.

All patients with or without a neurological deficit underwent emergency reduction by simultaneous closed manual reduction of the dislocation according to the Riche-Gueter method and the imposition of skeletal traction with a CITO brace using the method of increasing weights. We consider this procedure mandatory for unloading the damaged spinal segment and the spinal cord and its roots. After stabilization of the therapeutic status, according to the indications, anterior decompression and stabilization were performed using an interbody implant from carbon-carbon implants of a new generation and an anterior cervical blocking plate ChM. Patients of group I with dislocations of the vertebrae underwent an operation of open reduction of the dislocation, discectomy, endoprosthesis replacement of the intervertebral disc, fixation with a blocking plate ChM (patent No. FAP01191). Patients of groups II and III underwent surgery according to the method of A.I. Protsenko, which provides for subtotal/total resection of the body of the damaged vertebra, combined autobone fusion + carbon implant.

In the postoperative period, external fixation was performed with a Philadelphia-type

collar. Given the severity of the injury, conservative treatment continued in the postoperative period. Maintenance of indicators of cardiac activity and respiration, prevention of postoperative edema of the spinal cord after its decompression.

Analysis of the results of surgical correction of angular deformity was performed using X-ray morphometry of stabilized damaged segments at the level of Luxation 1-3 days after surgery and a month later (example patient R.A.).

Patient R.A., born in 2002, was admitted to the neurosurgical department on an emergency basis after an injury. Fell from a height of 2 meters. Brief loss of consciousness. She was taken to the emergency room by ambulance. Upon regaining consciousness, she felt weakness in the upper limbs, pronounced weakness in the lower limbs. Diagnosis: "Closed compression fracture of the C7 vertebral body, complicated by compression of the C7-Th7 roots of both sides (group C according to the classification of Frankel H.L.). X-ray of the cervical spine revealed a fracture of the VC7 body, with displacement of bone fragments into the spinal canal, compression of the spinal cord. MSCT gram in the sagittal and axial projections, a free fragment of the VC7 fracture was displaced into the spinal canal, an anterior chamber block, and spinal cord compression. diuretic, hormonal preparations.After the preoperative preparation, the patient underwent the operation "Ventral decompression of the spinal cord, VC7 corporectomy, discectomy of adjacent intervertebral discs. Removal of internal bone fragments from the spinal canal. The dural sac was not damaged, the pulsation was preserved. n interbody fusion VC6-Th1 with a carbon implant, fixing plates are installed. On the first day after the operation, the patient began to notice an improvement in muscle strength in the limbs and the disappearance of pain. Activated for 5 days. On the 10th day, movement in the limbs was completely restored (figure 1).

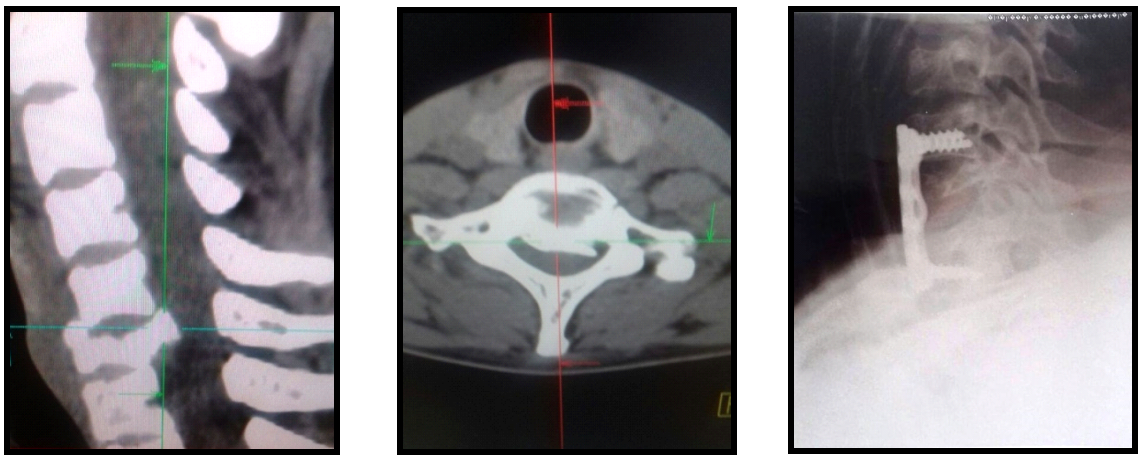

Fig. No. 1. MSCT and X-ray images of the patient before and after surgery.

Results and discussion: Adequate decompression of the spinal cord and roots by primary stable fusion contributed to a high analgesic effect of the operation with a noticeable regression of neurological syndromes. The average duration of the recovery period for neurological complications of acute injury was 30-60 days, in some 5 cases in patients of the first and third groups, it ranged from 1 to 3 days. 3-6 months after the operation, the assessment of the neurostatus according to Frenkel is as follows [12]:

Table number 1.
The results of the neurological status according to Frenkel after surgery (3-6 months) (76 patients)

№	Types of injury	n	Groups					Total
			A	B	C	D	E	
1 group	Dislocations of the vertebrae	**21**		**6**	**7**	**7**	**1**	**21**
2 group	Fractures and dislocations of the vertebrae	**26**	**1**	**6**	**7**	**12**		**26**
3 group	Vertebral body fracture	**29**			**12**	**17**		**29**
Total		**76**	**1**	**12**	**26**	**36**	**1**	**76**

As can be seen from the table, the assessment of the neurological status according to Frenkel 3-6 months after the operation revealed the following results:

A - 1. B - 12, C - 26, D - 36, E - 1 patients. The regression of the neurological status directly depended on the following factors: 1) the severity of damage to the spinal cord and roots at the time of injury. 2) the duration of compression of the spinal cord and roots at the time of injury. 3) late hospitalization of the patient. 4) persistent ischemia of the spinal cord with the development of secondary morphological changes.

Thus, with the use of adequate surgical treatment in the early period, it was possible to eliminate spinal cord compression and create conditions for the regression of neurological complications in most cases. Stabilization of the operated segment with blocking plates contributed to the prevention of kyphotic deformity, secondary graft mixing, the formation of reliable spinal fusion, and early rehabilitation of patients in the postoperative period.

Conclusions:

1.Patients with damage to the cervical spine should be hospitalized in a specialized department as soon as possible after the injury.

2.Injuries to the lower cervical vertebrae require careful precision assessment of the integrity of the entire support complex. System integral classifications (SLIC) is the most justified in terms of determining treatment tactics.

3.Adequate decompression of the spinal cord and its roots ensures the interruption of the pathogenesis of morphological changes in neurological complications.

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