

**DIAGNOSTICS AND TREATMENT OF COMPRESSION FUNCTIONS OF THE CHEST AND LUMBAR SPINE IN ADULTS AND ELDERLY PATIENTS BY THE METHOD OF DIFFERENTIAL SURGERY**

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✓ **Resume**

*The study analyzed the results of the examination of 60 patients over 50 years old who were treated in the departments of neurosurgery and vertebrology of the AGMI clinic, the departments of spinal surgery of the Republican Specialized Scientific and Practical Center for Neurosurgery from 2012 to 2020. Based on the examination results, a differentiated surgical approach is recommended for each patient.*

*Key words: compression fractures, surgical methods, advanced age, thoracic and lumbar spine.*

**ДИАГНОСТИКА И ЛЕЧЕНИЕ КОМПРЕССИОННЫХ ПЕРЕЛОМОВ ГРУДНОГО И ПОЯСНИЧНОГО ОТДЕЛОВ ПОЗВОНОЧНИКА У ВЗРОСЛЫХ И ПОЖИЛЫХ ПАЦИЕНТОВ МЕТОДОМ ДИФФЕРЕНЦИАЛЬНОЙ ХИРУРГИИ**

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✓ **Резюме,**

*В исследовании проанализированы результаты обследования 60 пациентов старше 50 лет, лечившихся в отделениях нейрохирургии и вертебрологии клиники АГМИ, отделениях спинальной хирургии Республиканского специализированного научно-практического центра нейрохирургии с 2012 по 2020 гг. По результатам обследования каждому пациенту рекомендован дифференцированный хирургический подход.*

*Ключевые слова: компрессионные переломы, хирургические методы, пожилой возраст, грудного и поясничного отдела позвоночника.*

**KATTA VA KEKSA YOSHLI BEMORLARDA KO'KRAK VA BEL UMURTQALARI KOMPRESSION SINISHLARINI TASHXISLASH VA DIFFERENSIALLASHGAN JARROXLIK USULI BILAN DAVOLASH**

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✓ **Rezyume,**

*Tekshiruv davomida 2012 – 2020 yillar davomida ADTI klinikasi neyroxirurgiya va vertebrologiya bo'limlari, Respublika ixtisoslashgan Neyroxirurgiya ilmiy – amaliy markazi spinal xirurgiya bo'limlarida davolangan 50 yoshdan oshgan 60 nafar bemorlarda tekshiruvlardan olingan natijalar taxlil etildi. Tekshiruv natijalariga asoslangan holda har bir bemor uchun differensiallashgan jarrohlik usuli tavsiya etildi.*

*Kalit so'zlar: kompression sinish, jarrohlik usullari, keksalik yoshi, ko'krak va bel umurtqasi.*

## Relevance

Diagnosing the stage and nature of spinal and spinal cord injuries is one of the current problems of modern vertebrology and neurosurgery. Injuries to the spine are second only to injuries of the lower extremities, and account for 10-26% of injuries of the musculoskeletal system [5]. Spinal fractures are not seen on traditional radiography in 23-57% of cases. The emergence of more informative methods of radiation diagnosis (multispiral computed tomography - MSKT, magnetic - resonance tomography - MRI) naturally increases the visualization of the stage and nature of the injury of the spine and spinal cord [1,2,3]. In the treatment of patients with compression fractures in the area of the thoracic and lumbar spine, it is necessary to eliminate orthopedic and neurosurgical problems in front of doctors.

Over the last 20 years, significant progress has been made in the surgical treatment of this type of injury. This is explained by the development and application of methods such as vertebroplasty, TPF and kyphoplasty in the treatment of compression fractures of the spine in clinical practice [4].

Compression fractures in the spine of older and elderly people are one of the most common diseases. In the U.S., 25% of women experience compression fractures in the spine at least 1 time in their lifetime after the postmenopausal period. Spinal fractures occur in 40% of people over the age of 80. According to Russian authors, one in three women and one in eight men have at least one spinal fracture after the age of 65. Chronic low back pain is associated with decreased ability to work, functional activity, and quality of life associated with this pain [1]. Surgical treatment of compression fractures, which rapidly, significantly, and continuously reduces spinal pain syndrome, is common, resulting in restoration of activity in physical and daily life and improved quality of life [7].

Organ fixation - transpedicular, loop laminar and combined systems [6, 10], anterior fixation - retinal spondylosis at the expense of implants, vertebral body endoprosthesis, anterior plates [2,4,8], augmentation of the vertebral body with cement [7,9] developed and used. The choice of method of fixation of the spine in compression fractures of the spine in the thoracic and lumbar region in older and elderly patients, the choice of access path, the assessment of the volume of surgery in the presence of concomitant diseases, low mineral density of the spine and spinal instability syndrome are still debated. is the cause.

In the Russian literature, in studies devoted to the problems presented, D.S. Bobrova (2009), L.Yu. Darchiya L.Yu. (2011), D.I. Shtadlera

(2011), A.I. Norkins (2013) identified specific features in spinal fixation by conventional and minimally invasive methods in the surgical treatment of compression fractures of the spine in young and adult patients. The possibility of combining different minimally invasive methods and guidelines for the use of differentiated minimally invasive methods in individual clinical cases have not been studied in studies.

In summary, the clinical diagnosis of compression fractures of the thoracic and lumbar spine in older and elderly patients, the choice of surgical method differentiated according to the cause of compression fractures and their degree, are causing various controversies among neurosurgeons and vertebrologists.

**The purpose of the study:** to improve the methods of examination of compression fractures in the thoracic and lumbar spine in older and elderly patients and the development of differentiated surgical methods

## Material and methods

Department of Vertebrology and Neurosurgery of the Clinic of Andijan State Medical Institute, Department of Spinal Surgery of the Republican Specialized Scientific-Practical Center of Neurosurgery 2012-2020 40%) were men. The age range of patients was 35 (58.3%) aged 50-59 years, 16 (26.7%) aged 60-69 years, and 9 (15%) over 70 years. Of the patients examined, 24 (40%) were men and 36 (60%) were women. Compression fractures occurred in 18 (30%) areas in the VTh12 area and in 13 (21.7%) areas in the VL1 area. Complex instrumental examination methods were used after different degrees of injury or pain in the thoracic and lumbar spine.

Of the patients examined, 19 (31.6%) underwent 2 different radiographic examinations, 7 (9.7%) underwent densitometry, 24 (40%) underwent MSCT and 44 (73.3%) underwent MRI, and 5 (8) underwent MRI. , 3%) underwent densitometry. The study focused on the area in which the compression fractures occurred, the mineral density of the vertebral body where the compression fracture occurred, and the nature of the fracture (stable or unstable).

In choosing the surgical method of patients with compression fractures, special attention was paid to the cause of compression fractures and the type of injury to the supporting columns of the spine. The mainstay of surgical treatment of compression fractures of the spine is to decompress the spine, restore the normal shape of the spine and stabilize the injured segments.

## Result and discussion

The most common classification that determines the degree of injury to the thoracic and lumbar spine is the modified classification of F. Denis [6] and AO F. Magerli [5]. According to this classification, spinal cord injuries are divided into 4 groups: 1) compression fractures 2) explosive fractures 3) seat belt type fractures 4) fractures.

Compression fractures account for approximately half (49.8%) of fractures in the thoracic and lumbar spine. In these types of fractures, the anterior musculoskeletal system of the spine is damaged, the medial musculoskeletal system is not damaged, and the organ may be damaged or undamaged due to the elongation of the musculoskeletal system. In fractures of this type, the load on the spinal axis is dropped, causing the spine to bend. Typically, fractures in this group are located in the upper covering plate, ponasal deformations of the vertebral body occur, and its anterior surface leads to disruption of the cortical substance.

The study found compression fractures in the thoracic and lumbar spine in 60 patients over the age of 50 years. Of these patients, 44 were due to falls from heights, 6 were due to a traffic accident, 4 were due to trauma, and 6 patients did not link the cause of the illness to any cause.

Analysis of the results of compression fractures was most common in 18 (30%) VTh12 and 1 in VL1. a change in the shadow of the paravertebral soft tissue is detected.

In the absence of objective methods of assessing the quality of bone tissue, these criteria can be used in planning the operation. Two-energy X-ray absorptionmetry (densitometry, DEXA) has become the "gold standard" in determining bone density, as it has the ability to check the density of the central part of the bone using this method.

The bone density value is expressed as the T criterion, which is a statistical indicator of the ratio of bone density and bone density of the subject in the control group of selected healthy volunteers. It is expressed in the number of standard deviations (SD) from the "normal" peak bone mass in the control group of patients. According to WHO, osteoporosis is considered normal if the T criterion is less than -2.5 SD, osteopenia if the T criterion is less than -1 to -2.5 SD, and normal if the T criterion is greater than -1.

MSKT allows you to get more information from the X-ray examination. Compared to X-ray examination, MSKT examination allows to describe compression fractures more accurately: to determine the degree of its deformation, the number of injured vertebrae, fracture of the arch, the mineral density of the compressed vertebral

body and the presence of signs of instability in compression fractures. Normal radiographic examinations do not show displacement of bone fragments into the spinal canal, and the reason for this is obstruction of the spinal cord, which is seen on MSKT examination.

MRI examination of the soft tissues of the spine can reveal the following components: longitudinal, intervertebral disc, spinal cord and changes in it (ischemia, edema, hemorrhage and cyst), extra and intradural hemorrhage and changes in the spinal body.

Complex examination methods in compression fractures of the thoracic and lumbar spine (radiological examinations, densitometry or MSCT, MRI) allow patients to accurately diagnose the disease (clearly see the area of the disease, know the stage of the disease, know the cause of the disease) and differentiate treatment allows the choice of surgical method.3 (21.7%) in patients.

The results of surgical treatment were evaluated by radiological (compression stage of the anterior part of the spine, the angle of kyphosis at the site of injury) and the regression of clinical and neurological symptoms. Compression fractures of the thoracic and lumbar region in patients with surgical treatment are differentiated according to the mineral density of the compressed body, the condition of the base segments of the spine (vertebroplasty of the compressed vertebral body, fixation of the injured segments with TPF or XNIOT) selected.

Densitometry or quantitative CT scan methods were used to determine the mineral density of the compressed vertebral body. MSKT examination was used to determine the presence of instability syndrome in the injured segments. Of the 60 patients in the study, 27 (45%) had a TPF device and 5 (8.3%) patients had an XNIOT device due to the presence of instability syndrome in the injured area. Vertebroplasty was performed in 25 (41.7%) patients who were found to have decreased mineral density of the fractured vertebral body. In 3 (5%) patients, a combined method (vertebroplasty and TPF) was used to detect a decrease in the mineral density of the fractured vertebral body and the presence of instability syndrome in the injured area.

Surgical treatment of compression fractures in the thoracic and lumbar spine in older and elderly patients was selected based on the degree of deformity of the compressed vertebral body, the presence or absence of instability syndrome in the injured segment, and the nature of vertebro-dural conflict in the compressed vertebral canal. In

patients with compression fractures, the height of the compressed body is normal vertebroplasty was performed in 25 of the patients who did not have vertebro-dural conflict in the canal in the area of the compressed body while not less than 75% of the height of the vertebral body.

If the height of the compressed vertebral body is less than 75% of the normal height, if there is instability syndrome in the injured segment (classified by F. Denis classification of instability syndrome) and if there is vertebro-dural conflict, decompressive laminectomy and TPF device is installed, if not vertebrae The TPF device was installed. If there is a sign of instability in the injured area but there is a vertebro-dural conflict, these patients were placed with an XNIIOT device. After the visit to the department and the examination, the neurological condition of the patients was assessed according to the classification proposed by H. Franrel and the patient-induced pain syndrome on the VASh scale.

### Conclusion

1. In compression fractures of the thoracic and lumbar spine, it is advisable to conduct complex examination methods using two types of radiography, densitometry, MCT and MRI. If screening methods are not fully utilized, insufficient information on the condition of the spine and spinal cord will be obtained.
2. Comprehensive X-ray examination of compression fractures of the thoracic and lumbar spine in elderly and elderly patients allows to quickly eliminate problems in diagnosing the disease, timely select a differentiated treatment method for each patient and predict possible complications after injury.
3. In the surgical treatment of compression fractures in the thoracic and lumbar region in elderly and elderly patients, it is advisable to choose depending on the degree of deformation of the compressed vertebral body, the presence of signs of instability in the injured segment and vertebro-dural conflict in the spinal canal.

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