Federal State Budget Educational Institution
of Higher Education «Saratov State Medical University of Razumovsky»
«Research Institute of Traumatology, Orthopedics and Neurosurgery»
of the Ministry of Health of Russian Federation

Surgical treatment of gross rigid posttraumatic deformities of thoracic and lumbar spine

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Objectives

Causes of rigid posttraumatic deformities

The lack of timely and qualified medical care to the given patients category

Non-substantiated use of conservative methods

Inadequate surgical methods

Methodology

The main criteria of surgical treatment choice for patients with rigid posttraumatic deformities in thoracic and lumbar spine:

- **1) Injury character**
- **2) Postinjury time**
- **3) Damage level**

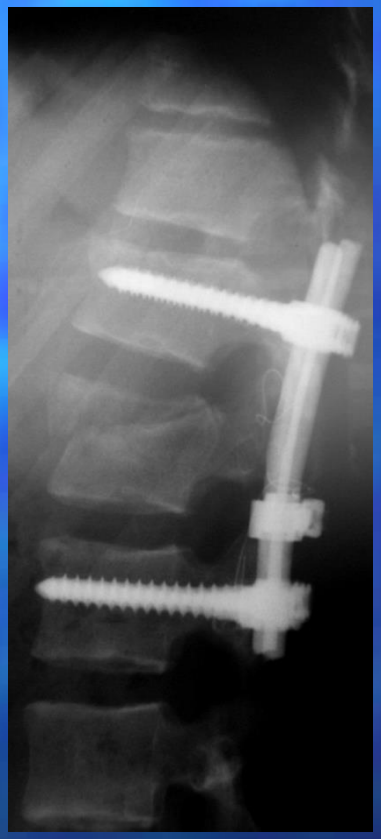
Surgical intervention type

- **Two-stage surgical intervention – 1 group (14 patients)**
- **Three-stage surgical intervention – 2 group (9 patients)**

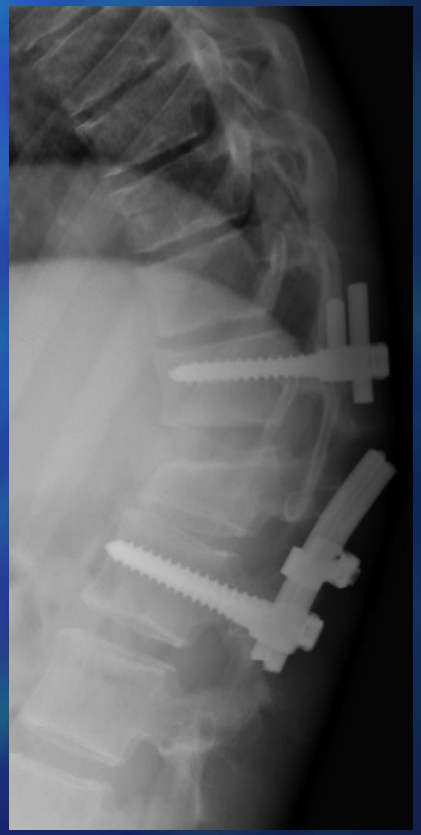
Results

1 group – patients with gross rigid kyphotic deformities

Before the first operation



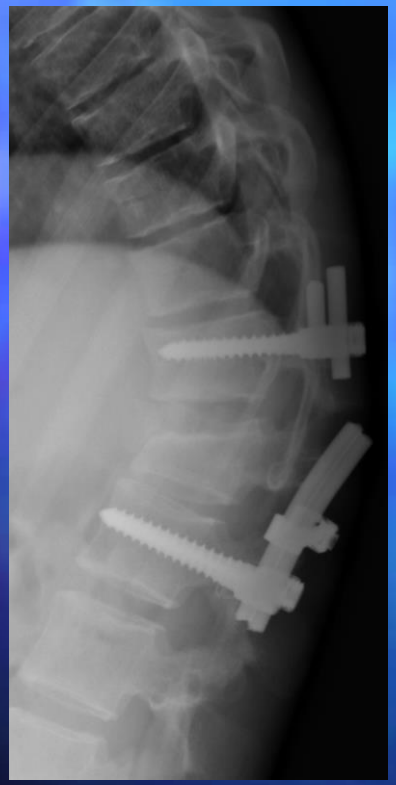
After the first operation



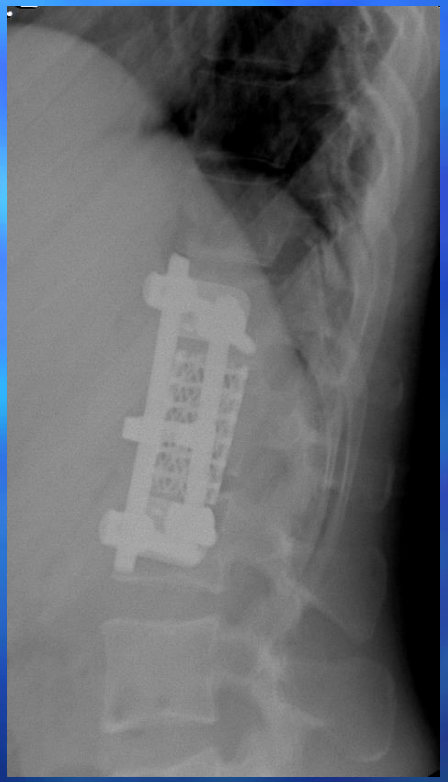
The formed rigid kyphotic deformity

Results

An example of two-stage surgical treatment in a 1 group patient. Posterior-Anterior (PA).

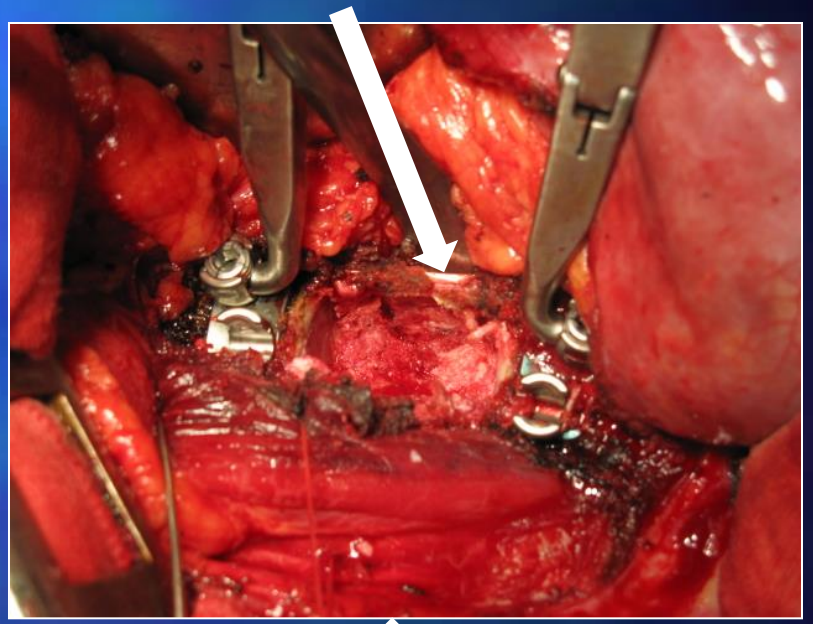


Rigid kyphotic deformity



After the revisionary treatment

Anterior longitudinal ligament

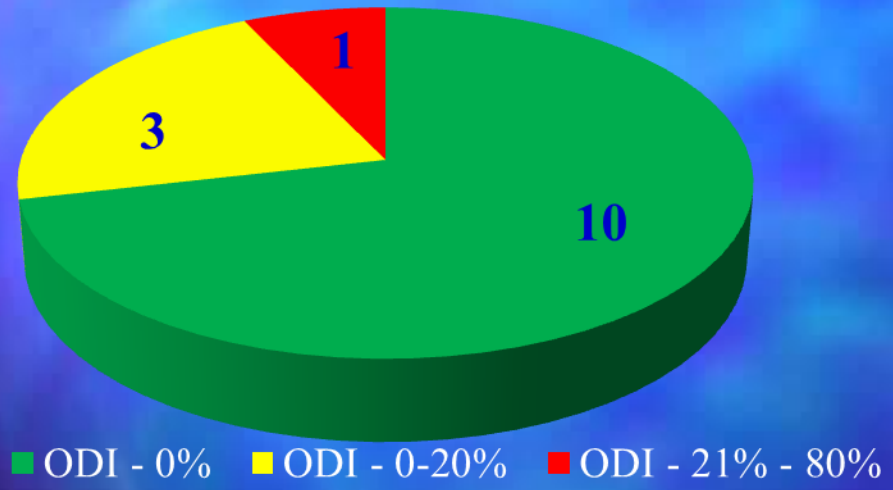


Ventral mobilization – injured vertebra resection with the dissection of anterior longitudinal ligament

Results

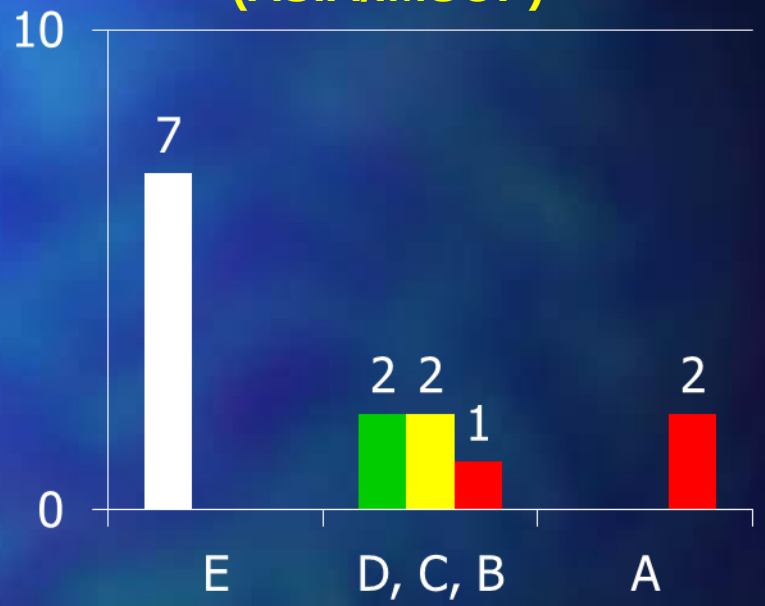
Quality of Life Score in the 1 group patients a year after operation (n – 14).

Oswestry Disability Index (ODI)



- Patients are fully rehabilitated
- Minimal influence on living (occasional moderate pain)
- Patient has significant pain Everyday activities are severely limited or absent

Long-term neurological status assessment after the operation (ASIA/IMSOP)



- Patients with no neurological deficit
- Full range of symptoms regression after the operation
- Partial symptom regression
- No neurological status dynamics

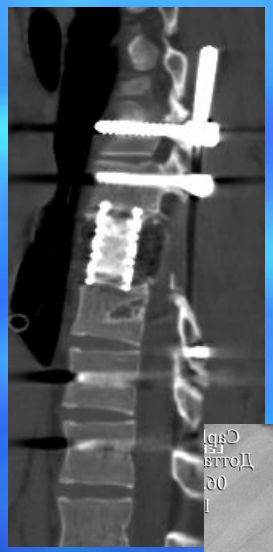
Results

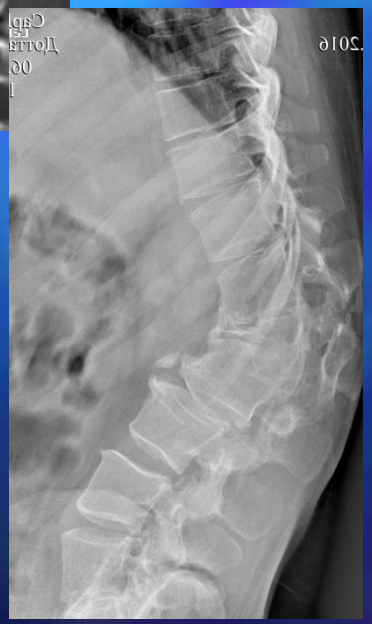
2 group – patients with gross rigid multiplanar deformities.

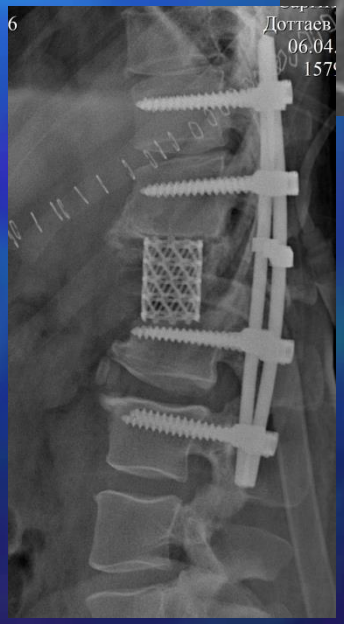
Deformity types

Results

Examples of three-stage surgical treatment of 2 group patients Anterior-Posterior-Anterior (APA).



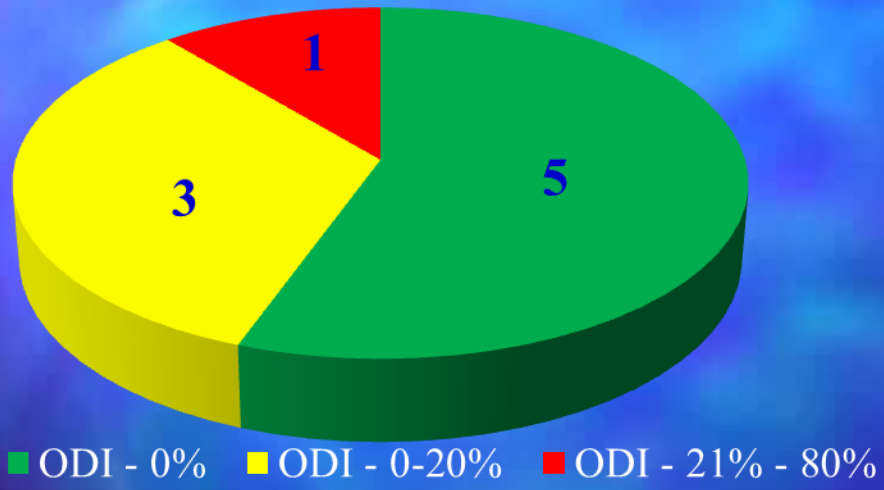




Results

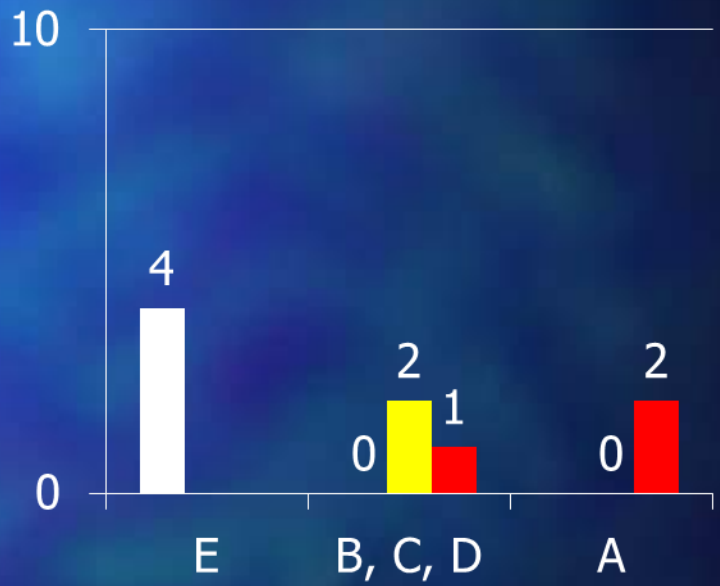
Quality of Life Score in the 2 group patients a year after operation (n – 9).

Oswestry Disability Index (ODI)



- Patients are fully rehabilitated
- Minimal influence on living (occasional moderate pain
- Patient has significant pain Everyday activities are severely limited or absent.

Long-term neurological status assessment after the operation (ASIA/IMSOP)



- Patients with no neurological deficit
- Full range of symptoms regression after the operation
- Partial symptom regression
- No neurological status dynamics

Conclusion

- Surgical treatment of rigid posttraumatic deformities of spinal column is laborious and traumatic.
- Positive result is determined by adequate mobilization of the damaged segment, vast spinal cord decompression, deformity correction with the respect to anatomic and biomechanical features of thoracic and lumbar spine.
- Following these rules it is possible to restore sagittal balance of spinal column without the risk of neurological symptoms in patients.

Conclusion

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Authors Disclosure Information

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