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New technique for additional support point to improve the stability of Pedicle Screw Systems

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Pedicle screw fixation for spine arthrodesis is a useful procedure for the treatment of spinal disorders. However, instrument failure often occurs, and pedicle screw loosening is the initial step of range of complications. In order to prevent pedicle screw loosening, the author offers to open a hole in the middle of the spinous process of vertebra and pass Cross link Shaft that connects rods with each other through that hole. The paper provides explanation of an operating technique, clinical impressions in the early and late postoperative period and any tecnhical problems that may occur. The technique we propose has been applied for two years to 24 patients with idiopathic scoliosis, 4 patients with vertebral fracture and 4 patients with lumbar stenosis, all aged 13 - 65. The modification we propose can be easily conducted technically and takes no more than 2 - 5 minutes. None of the patients have had any unusual pains or pronounced pains in the shaft zone in the early postoperative period and no restraints of movement or any other clinical symptoms can be observed. None of the patients have had Looser's zones or displacements of screws for two years. We developed physical-mathematical model of the proposed method in the frame of Solidworks program and carried out static analysis. At the results, we have proved the efficiency of the method.

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Biography

Togrul Calilov was born in Baku city, on May 30, 1981. He finished higher school in 1988 with distinguished certificate and at the same year, he admitted to the Faculty of "Treatment and Prevention" of Azerbaijan Medical Institute. He graduated the Institute in 2004 with distinguished diploma and passed the internship at the Scientific Research Institute of Orthopedics and Traumatology of Azerbaijan in 2005. He defended dissertation of PhD on the topic of "Surgical treatment of scoliosis with distracting and frontal extending endocorrectors" on March 18, 2015. Togrul Calilov showed himself as skillful and careful doctor during his activity. Several times, he participated at the scientific conferences and courses in foreign countries. He is the author of 59 scientific articles, 5 effective proposal, 5 invention patents. He continues his research in innovation in operative treatment of adolescent idiopathic scoliosis to achieve a Doctor of Science degree. He made over 100 operations in patients with severe form of adolescent idiopathic scoliosis.

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