

REVIEW

The dissertation for obtaining a scientific and educational degree "PhD"

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Topic: "FREE-HAND" TECHNIQUE FOR PLACEMENT OF PEDICULAR SCREWS IN SURGICAL TREATMENT OF IDIOPATHIC SCOLIOSIS IN CHILDHOOD"

The presented topic is of interest due to the discussion of the surgical technique, which is actively used in the modern approach for surgical treatment of scoliotic deformities in childhood.

The aim of the dissertation is to present the advantages of this surgical technique, the principles of its planning, the theoretical and technical requirements of its implementation, as well as a verification protocol in order to minimize the risks.

The presented dissertation is structured correctly and is presented in a volume of 114 standard typewritten pages and is illustrated with 38 tables, 10 graphs and 54 figures.

The first chapter presents the disease idiopathic scoliosis, the most famous theories about the pathogenesis of this disease. Various surgical techniques used over the years for the treatment of pediatric spinal deformities are presented.

Presented are the advantages of vertebrodesis performed with pedicular screws compared to other techniques. The anatomical features of the different levels of the spine, the topographic anatomical dependences in the area are shown. The importance of IONM / intraoperative neuromonitoring / for the safety of surgical treatment has been demonstrated. The advantages of the operative technique due to low levels of X-ray radiation are presented.

The risks and complications of surgical treatment are also presented.

The main goal is clearly presented and corresponds to the title, namely "FREE-HAND" TECHNIQUE FOR PLACEMENT OF PEDICULAR SCREWS IN SURGICAL TREATMENT OF AIDIOPATHIC SCOLIOSIS IN CHILDHOOD"

The aim of the present study is to analyze protocols for planning, implementation and verification by reducing the risk of complications in its application for the surgical treatment of idiopathic scoliosis by analyzing the results of the application of Free-hand surgical technique. There are 6 main tasks, which are clearly defined, feasible and support the proof of the main goal.

The design is a retrospective study involving 68 patients with idiopathic scoliosis who underwent surgical treatment in the period June 2013-December 2019 at the Clinic of Orthopedics and Traumatology of Acibadem City Clinic Tokuda Hospital.

The following are descriptive statistics on the distribution of patients by age, sex, types of scoliosis, as well as the distribution of patients according to Lenke's classification.

The protocols for preoperative assessment and planning of the operative intervention are described. The surgical technique is presented in detail in stages, a verification protocol is demonstrated.

The data for the number of installed screws, levels of synthesis, degree of deformation correction are presented in detail.

The reported malpositions in the screw synthesis are demonstrated. Data on the relative severity of the identified verification methods as well as the identified complications are presented.

When discussing the statistical results, the established correlation of the reported malpositions to the various indicators is shown - type of scoliosis, type of deformation according to Lenke's classification, size of preoperative Cobb angle, size of rotation and levels of synthesis.

Chapter four presents a discussion of the results obtained. A generalized analysis, the author's point of view, comparison of the achieved results with the results of other authors are presented.

Chapter five presents 13 conclusions and recommendations of great practical value. They are a summary of the author's clinical experience and the results of the statistics and their dependencies.

At the end of the dissertation is presented a literature review, which contains 144 sources, 3 of which are by Bulgarian authors. The sources are arranged alphabetically.

Conclusion

The dissertation is written extremely competently and concerns the most modern and current topic related to the treatment of idiopathic scoliosis. I am deeply convinced that the current work is very valuable and useful for national spinal surgery.

I am voting in favor of awarding the scientific degree "PhD" to Dr. Adelin Ivanov. The dissertation meets all the requirements of the regulations for scientific degrees in the Republic of Bulgaria.

(Prof. Dr. Lyuben Stokov, MD, DSc)