

STATEMENT

by

Assoc. Prof. .Todor Penchev Shamov, MD, PhD

regarding

Dissertation of Dr. Mladen Evtimov Ovcharov on the subject:

"Lumbar disc herniation: clinical aspects and correlations in surgical treatment"

for awarding the educational and scientific degree of Doctor in scientific specialty

03.01.41. Neurosurgery

according to Order No. P-109-3 / 07/01/2021

Dr. Mladen Ovcharov was born in 1968. In 1994, he graduated Medicine at Medical University - Pleven, and since 2009, he has a Master's degree in Economics. In the period 1995-1996, he started working as an intern, and subsequently, after a successful competition, he was appointed Assistant at the Clinic of Neurosurgery, Medical University - Pleven. He passed basic courses in Neurosurgery at Alexandrovska Hospital (1996, 1998 and 2000). In 2001, Dr. Ovcharov acquired a specialty in Neurosurgery. He conducted short-term specializations in Milan (2006) and Hamburg (2010).

As Assistant at the Department of Neurology and Neurosurgery, Dr. Ovcharov performs active teaching work and takes an active part as a lecturer in university courses in Neurology and Neurosurgery. He has over 40 scientific papers and publications in the field of Neurology and Neurosurgery. He actively participates in the publication of a textbook on Neurosurgery, designed for Bulgarian and English language training students and graduates. He conducts lectures and exercises in Neurology and Neurosurgery for medical students; Bulgarian and English Language Training under the Erasmus+ program and the Student Internships project.

Dr. Ovcharov is an experienced neurosurgeon, mastering the complex diagnosis, conservative and highly specialized surgical treatment of diseases and injuries of the central and peripheral nervous system. He has a set of qualities such as excellent communication, teamwork skills, creativity and ability to make urgent decisions. He handles excellently in critical situations under conditions of professional stress. Thanks to the above-mentioned professional skills and qualities, he positions himself as a leading neurosurgeon in Northern Bulgaria.

The dissertation, presented for review, is composed on 133 standard typewritten pages, including 69 figures and 48 tables. It is written in understandable Bulgarian and is

characterized by good structure and coherence in the presentation of various theses and ideas. The content includes the following sections: Introduction, Literature Review (10 pages), Objective and Tasks, Materials and Methods (14 pages), Results (59 pages), Discussion (22 pages), Conclusions and Contributions, List of Publications related to the subject of the dissertation - 2 chapters in a textbook for English language training medical students, 2 publications in the Journal of Biomedical and Clinical Research and 1 publication at a national scientific forum. The bibliography includes 178 titles.

The subject, examined in the dissertation, is relevant and of great social significance. With the advancement of imaging technologies, knowledge is gained about the nature of this type of pathology, various innovative methods of treatment are introduced and many unclear moments arise. So far, the research, conducted in Bulgaria, is limited and insufficient. In this sense, the dissertation answers many questions about the surgical treatment of disc herniations.

The presented bibliography reviews the etiology, pathogenesis and modern methods of treatment of this disease. Based on the literature data, conclusions are formulated, indicating the unclear points and the questions that need to be answered. The objective and the subject of the research are well-defined. The author defines a working hypothesis, which is answered on the basis of the applied statistical methods for data analysis.

The Materials and Methods section describes in detail the two main surgical techniques applied by the author. To analyze the results, the author has selected metric scales to account for the effect of surgical treatment. The scales, used by the author, have become well-established in world practice. These are the Visual Analogue Scale, the Modified MacNab Scale and the Oswestry Disability Index. To analyze the results of imaging studies and the degree of disc degeneration, the author uses the Pfirrmann Scale, which is sufficiently illustrative and indicative. Comparing the two surgical techniques and reporting the results using metric scales, the author applies a very original design of the research by using the ANOVA analysis. This is what makes the research objective and valuable.

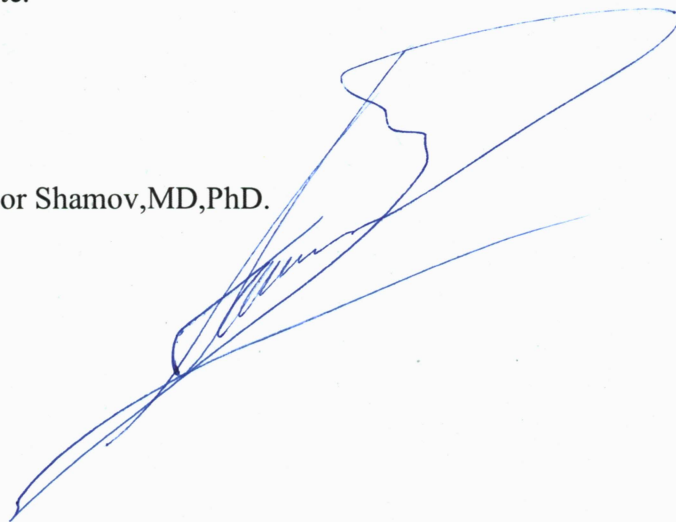
The Results section uses methods from descriptive statistics, which are sufficiently illustrative and give a clear idea of the obtained results. The used bar and pie charts and tables give a clear idea of the obtained results and the advantages and disadvantages of the applied surgical techniques. A significant number of pre- and postoperative imaging studies are enclosed. It should be noted here that the author systematizes the results according to the Carragee Classification System, which conveys the originality of the dissertation work and comparability with the achievements in this field of knowledge.

In the Discussion section, the author compares his own results with the results of other authors mentioned in the literature review. He tries to clarify the reasons for the differences in the results of the applied surgical techniques. At first glance, two elementary and widely used surgical techniques are compared, but at the same time, questions are raised that should be considered and may become a subject for future research.

Despite the good presentation of the surgical techniques and the results, at the end of the Discussion section, the author does not give fresh directions for future research in this area that he could further develop. This is perhaps the only drawback of the dissertation work.

In conclusion, it can be said that the dissertation meets the structure and content of the criteria for awarding a Doctor's degree and I would like to recommend to the members of the scientific jury to give their positive vote.

Prepared by: Assoc. Prof. Todor Shamov,MD,PhD.

A handwritten signature in blue ink, consisting of several overlapping loops and lines, positioned to the right of the text 'Prepared by: Assoc. Prof. Todor Shamov,MD,PhD.'