

Statement

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of the dissertation

**"Role of Virtual Colonoscopy in Minimally Invasive and Robotic
Oncological Colorectal Surgery"**

by: **Dr. Mehmed Behchet Hadzhiveli**

for the acquisition of a scientific and educational degree "PhD" in the
scientific specialty "General Surgery"

Scientific supervisor: Prof. Dr. Nikola Yordanov Kolev, PhD, BSc

The dissertation thesis has been discussed and approved for public official defense by the Departmental Council of the Department of General and Operative Surgery, Medical University - Varna with a departmental council report with entry №102-55/11.01.2023 and according to Order P-109-100/02.02.2023 of the Rector of the Medical University - Varna.

The topic of the dissertation work is contemporary and dissertable. Currently, colorectal cancer remains the third most frequently diagnosed malignancy worldwide among men and the second among women. One of the diagnostic methods is virtual colonoscopy. Its application has been analyzed in a number of publications, but only some aspects of its application in the context of oncological surgery and colorectal neoplasms have been discussed. This gives grounds for conducting the present complex study in order to highlight the importance of virtual colonoscopy in comparison with fibrocolonoscopy in the preoperative diagnosis of colorectal oncological diseases and to contribute to the popularization of this relatively new method in Bulgarian clinical practice.

The dissertation is presented in a volume of 164 pages and contains 29 tables and 59 figures.

The presentation of the **literature review** has a very good cognitive value in an optimal volume and is focused on the following topics: Social epidemiology of oncological colorectal patients; Modern minimally invasive surgical methods of treatment of oncological colorectal diseases; Novelties in imaging diagnostics of oncological colorectal diseases; Satisfaction and quality of life of patients with oncological colorectal diseases undergoing endoscopic examinations; Economic analyzes of imaging in colorectal cancer screening; A critical evaluation of the literature on the problem circle.

The dissertation sets a clearly formulated **Aim**, namely: To study the role of virtual colonoscopy in minimally invasive and robotic oncological colorectal surgery. To accomplish this goal, the following tasks must be accomplished:

1. To investigate the diagnostic role of virtual colonoscopy in patients with colorectal cancer.
2. To investigate the diagnostic role of virtual colonoscopy in patients with colorectal polyps.
3. To analyze the additional diagnostic role of virtual colonoscopy in colonic and extracolonic diseases.
4. To analyze the application of virtual colonoscopy in the staging of patients with colorectal cancer.
5. To analyze the role of virtual colonoscopy in the choice of surgical method.

Dr. Hadzhiveli's study was retrospective, monocentric. It was implemented in the structures of "St. Marina" Hospital - Varna and covers the period from 01.01.2012 to 31.12.2021. The patient population includes 1695 patients.

To solve the set tasks, Dr. Hadzhiveli applies a number of **methods** to the patients included in his study, which emphasizes the scientific merits of the work. He uses imaging, endoscopic, statistical methods.

The results are presented comprehensively, illustrated in detail and presented with graphics, tables and figures. Dr. Hadzhiveli investigated the diagnostic value of virtual colonoscopy in patients with colorectal cancer, colorectal polyps, in the detection of various colonic and extra-colonic diseases and in the staging of patients with colorectal carcinoma. Of great importance is the analysis of the influence of virtual colonoscopy data on the operative method in patients with colorectal carcinoma.

The discussion shows the author's approach to the research problem and Dr. Hadzhiveli's ability to analyze his own results. It is logical to conclude that the correct selection of patients, the improvement of surgical techniques and adequate preoperative staging and postoperative treatment and care are the main

methods for reducing postoperative complications and primary factors for improving the results of the treatment of patients with colorectal carcinoma.

The conclusions are 7 in number and derive from the own obtained results - they reliably summarize the results of the research.

As **contributions** of the dissertation I can recognize:

- For the first time in Bulgaria, the role of virtual colonoscopy in minimally invasive colorectal surgeries has been analysed.
- A ten-year period with a large number of diagnosed, operated and followed-up patients was analyzed.
- Literature and clinical data on the advantage of virtual colonoscopy in the preoperative diagnosis of colorectal neoplasms are presented.
- A retrospective clinical-epidemiological single-center study was performed and contemporary data on the incidence and clinical characteristics of patients with colorectal carcinoma were presented.
- A detailed imaging and clinical study was performed on the impact of virtual colonoscopy on operative methods.
- A comparative analysis was made between a non-invasive imaging method and optical endoscopy, which is the gold standard in colorectal diseases.
- An increase in minimally invasive and robotic surgery in the treatment of colorectal diseases is confirmed.

Dr. Mehmed Hadzhiveli is an experienced and promising surgeon. His dissertation work is of high scientific and practical value, which contributes to proving the role of virtual colonoscopy in the diagnosis and minimally invasive surgical treatment of colorectal carcinoma. This gives me the right to propose to the highly respected Scientific Jury to award Dr. Mehmed Hadzhiveli the educational and scientific degree "PhD".

Varna
21.02.2023

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