

**TO THE CHAIRMAN  
OF THE SCIENTIFIC JURY,  
DETERMINED BY ORDER № P-109-100/02.02.2023 r  
OF PROF. VALENTIN IGNATOV, MD, PhD  
RECTOR OF MEDICAL UNIVERSITY  
"PROF. DR. PARASKEV STOYANOV"-VARNA**

## **REVIEW**

From prof. Dimitar Ivanov Bulanov, MD, PhD  
Dean of the Faculty of Medicine, Medical University – Sofia  
Clinic of General and Hepato-pancreatic Surgery, University Hospital  
"Alexandrovska"  
Department of General and Operative Surgery, Medical Faculty, MU-Sofia  
of a dissertation work for awarding the scientific degree "PhD"

**Field of higher education** 7. Health care and sports

**Direction** 7.1. Medicine

**Scientific specialty** "Surgery"

**Author:** Mehmed Behchet Hadzhiveli, MD

**Form of doctoral studies:** voluntary

**Institution:** First Clinic of Surgery, "St. Marina" University Hospital, Varna

Department of General and Operative Surgery, MU-Varna

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

**Scientific supervisor:** Prof. Nikola Yordanov Kolev, MD, PhD, BSc. First Clinic  
of Surgery, "St. Marina" University Hospital, Varna, Department of General and  
Operative Surgery, MU-Varna

### **1. General presentation of the doctoral student's procedure**

By order No. R-109-100 dated 02.02.2023 of Prof. Valentin Lyubomirov Ignatov, MD, PhD, Rector of the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, I have been appointed as a member of the scientific jury for the defense of Dr. med. Mehmed Hadzhiveli's dissertation work on the topic "Role of virtual colonoscopy in minimally invasive and robotic oncological colorectal surgery".

The presented set of materials on paper and electronic media is in accordance with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB) and the Regulations for the Development of the

Academic Staff at the Medical University "Prof. Dr. Paraskev Stoyanov"-Varna, and includes the following documents:

- Application to the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna for disclosure of the procedure for the defense of a dissertation work;
- curriculum vitae in European format with the doctoral student's signature;
- a copy of the higher education diploma;
- orders for enrollment in doctoral studies and for deduction with the right of defense;
- an order for conducting an exam from the individual plan and a corresponding protocol for passing the doctoral minimum in the specialty;
- protocol of a sitting of an extended scientific collegium for the preliminary discussion of the dissertation work and the decisions taken for the disclosure of the procedure and for the composition of a scientific jury;
- dissertation work;
- abstract for the dissertation work;
- a list of scientific publications on the topic of the dissertation;
- copies of scientific publications on the topic of the dissertation;
- declaration of originality and authenticity of the attached documents. The PhD student has attached two full-text articles, where he is the only author. The articles are thematically related to the dissertation work.

## **2. Notes and comments on the documents**

The procedure for the defense of the dissertation work, as well as the related documents, fully comply with the legal framework in force in the country, indicated above.

## **3. Brief biographical data**

Dr. med. Mehmed Behchet Hadzhiveli graduated from the Faculty of Medicine at the Medical University of Sofia in 2007. He specialized in General Surgery from 2008-2013 at N.I. Pirogov Hospital. In 2014, he received a recognized specialization in General Surgery. From 2016 to 2019 he specialized in Thoracic surgery, and in 2019 has a recognized second specialty Thoracic surgery. He is currently working as a surgeon in the First Clinic of Surgery at the "St. Marina" University Hospital, Varna. In 2021, after successfully passing the exam, he was enrolled as a full-time doctoral student at the same institution. From May 2017 Dr. med. Hadzhiveli is an assistant at the Department of General and Operative Surgery,

MU-Varna. In his capacity as an assistant, he leads the practical exercises of medical students III year ("General and operative surgery") and IV and V year ("Special surgery") from the Bulgarian and Foreign Language Courses.

After successful internal defense on 09.01.2023. Dr. med. Mehmed Hadzhiveli was dismissed with the right to official defense (based on Order No. R-109-100 of 02.02.2023 of prof. Valentin Lyubomirov Ignatov, MD, PhD, Rector of MU-Varna.

#### **4. Relevance of the topic**

The topic of the dissertation work is extremely relevant both in a purely scientific and in a scientific-applied aspect. There are many reasons for this. They are well known and as such have been repeatedly researched and analyzed. Because of all this, I will not dwell on details, but only on some facts related to the study of Dr. med. M. Hadzhiveli.

Colorectal carcinoma is a socially significant disease representing a growing public health problem worldwide. Radical surgical resection is considered the gold standard and, in the complex of multi-modal therapy, offers the most realistic chance of a cure. The introduction of minimally invasive surgery is a major evolution that enables radical resection of the colon and rectum with minimal trauma.

Imaging methods for detection, localization, staging, preoperative plan, presence or absence of accompanying pathology and follow-up play a key role in preoperative diagnostics. Virtual colonoscopy is the method of choice, meeting the requirements of preoperative preparation.

These, as well as a number of other facts, unequivocally prove the relevance of Dr. med. Hadzhiveli's dissertation topic.

#### **5. General characteristics of the dissertation work**

The dissertation contains 164 standard pages. The structure of the dissertation is fully compliant with the requirements accepted in our country for this type of scientific production, namely: Title page, Table of Contents (2 pages), Abbreviations used (2 pages), Introduction (1 page), Literature review (52 p.), Aim and tasks (1 p.), Material and methods (12 p.), Results of own studies (38 p.), Analysis and discussion of own results (24 p.). Conclusion and conclusions (2 pages), Bibliography (18 pages).

Overall, the dissertation is well illustrated with 29 tables and 59 figures.

The bibliography includes 233 titles in Latin.

## **6. Knowing the problem**

The literature review is detailed, analytical and of high scientific value, with a wealthy factology and current studies and meta-analyses related to the topic. Much of the current information regarding the main indications for the diagnosis of colorectal carcinoma is presented in detail, with an emphasis on virtual colonoscopy, its diagnostic value in colonic and extra-colonic lesions, as well as its role in choosing a surgical method.

Dr. med. M. Hadzhiveli brings the long-standing analysis and comparison between optical and virtual colonoscopy to the reader's attention.

In a volume of 3 pages (53-56 incl.) the satisfaction and quality of life of the patients and the economic analysis in the diagnosis of colorectal carcinoma are presented.

As one of the most valuable moments of the dissertation and of the whole literature review in particular, I consider the points made on pages 57-58 incl. conclusions from the review of the specialized literature. This is a good enough motivation and justification for the doctoral student to start the present research.

All the information presented illustrates the latest achievements in the field of colorectal carcinoma diagnostics and their impact on minimally invasive operative methods, which also proves Dr. med. Hadzhiveli's excellent theoretical training.

## **7. Research methodology**

The purpose and tasks of the dissertation (all 5 of them) are logically and accurately formulated, and most importantly - with a clear practical orientation.

I highly appreciate the logical connection between the goal and the tasks on which the whole study rests.

The material and methods are presented in sufficient detail, both with a textual description and with figures and tables.

Over a 10-year period, 1,695 virtual colonoscopies were performed, analyzed, and compared with 812 optical colonoscopies, as well as 715 operative interventions in colorectal cancer, 112 minimally invasive of varying volume and complexity, were performed in the doctor's clinic.

The study design is single-centered, retrospective.

Statistical methods of analysis are appropriate for this type of study and ensure that reasonable conclusions and conclusions are reached.

## **8. Evaluation of the results and contributions of the dissertation work**

The own results, their analysis and discussion are presented descriptively, in tabular and graphical form in chapters numbered V and VI (pp. 72-134 incl.).

The PhD student has made a very reasonable interpretation of the demographic data in the series. The methods of optical and virtual colonoscopy, modern minimally invasive surgical interventions, in different volume and complexity, divided into laparoscopic and robotic methods, are described in detail.

Extracolonic benign or malignant pathology is discussed in detail, as well as the role of virtual colonoscopy in choosing a non-surgical method.

The seven implications are a logical conclusion of the study and have a definite scientific and applied value. The established T-stage and the presence or absence of synchronous colorectal carcinoma has a leading role in changing the operative plan.

### **9. Evaluation of the publications and personal contribution of the doctoral student**

The publication activity of Dr. med. Mehmed Hadzhiveli on the topic of the dissertation meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB).

### **10. Abstract**

The abstract to the dissertation work of Dr. med. Mehmed Hadzhiveli meets the requirements in terms of volume and content and gives a sufficiently clear idea of the essence of the development, reflects in sufficient detail the results achieved and the formulated conclusions.

### **11. Critical remarks and recommendations**

I have no critical remarks about the thesis.

## **CONCLUSION**

After a detailed review of the dissertation work, I give a positive assessment of Dr. med. Mehmed Behcet Hadzhiveli's work on the problems of virtual colonoscopy and its role in minimally invasive colorectal surgery.

The dissertation is a completed scientific study with a high practical focus. The content of the dissertation corresponds to the set topic, goal, and tasks. The clinical material is well and professionally analyzed in a clinical and statistical aspect and concludes with well-founded conclusions useful for clinical practice.

The efforts made by the doctoral student, the number and volume of the studied parameters and indicators, the obtained results, their analysis, conclusions, and contributions are reasons for my positive assessment.

There are no violations of the procedure and all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, as well as the Regulations for the Development of the Academic Staff at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna, for his application.

The dissertation work for the acquisition of the PhD developed by Dr. med. Mehmed Behchet Hadzhiveli on the topic "Role of virtual colonoscopy in minimally invasive and robotic oncological colorectal surgery" contains scientific and applied achievements of a confirmatory and original nature. It is written in a good style, the transition between individual sections is smooth and logical, which makes it easy and enjoyable to read.

The presented materials and dissertation results show that the doctoral student has an in-depth theoretical knowledge and professional skills in the scientific specialty "General Surgery", demonstrating qualities and skills for conducting independent scientific research.

Due to the abovesaid, I give my undoubted **positive vote** of the conducted research, presented by the above-reviewed dissertation work, achieved results and contributions, and I propose to the honorable scientific jury to award the fully deserved educational and scientific degree "PhD" to Dr. med. Mehmed Behchet Hadzhiveli in doctoral program in "General Surgery", for which I confidently vote "YES"

**With respect:**

  
Prof. Dimitar Ivanov Bulanov, MD, PhD

Sofia

27.02.2023