

To: The Chairman of the Scientific Jury  
Medical University - Varna  
According to the Rector's Order R-109-452/06.11.23

**REVIEW**

of Dissertation

***POSTCHOLECYSTECTOMY SYNDROME-  
AN UPDATE OF AN "OLD" PROBLEM.  
DIAGNOSTIC AND ADVANCED THERAPEUTIC STRATEGY.***

To Assoc. Prof. Dr. Vasil Markov Bozhkov, MD, PhD.

for the award of scientific degree **"Doctor of Science"** in the field of higher education 7. "Health and Sport" in the professional field **7.1. "Medicine"** and scientific specialty **"Surgery"** .

by Prof. Dr Rosen Evgeniev Madjov, MD, PhD, DSc  
Head of Department of Department of Surgery Medical University - Varna

**1. Information for the procedure:**

The dissertation was discussed, accepted and recommended for defense by the Departmental Council of the Department of Surgical Diseases, Faculty of Medicine, Medical University - Varna.

By the decision of the Faculty Council of Faculty of Medicine and the Rector's Order R-109-452/06.11.23 I am elected as an internal member of the Scientific Jury for MU-Varna.

By protocol № 1 from 13.11.2023 from the first session of Scientific Jury I am elected as a chairman and to make an official review.

I received all necessary documents to prepare the review.

My review is tailored to the The Law on the Development of the Academic Staff in the Republic of Bulgaria, the regulations for its application and the rules of Medical University - Varna.

## **2. Professional data of the applicant:**

Assist. Prof. Dr. Vasil Markov Bozhkov was born on 13.07.1973.

Graduate in medicine in MU - Varna in 1998 – Diploma № 6851/1998 г.

**2002** – resident surgeon in Second Department of Surgery – UMHAT “Saint Marina.

**1999 – 2004** – specialization in Surgery in Second Department of Surgery

**2007** - elected as an assistant, **2011** – senior assistant and **2013** – chief assistant in the Department of Surgery, MU – Varna.

**2004** - acquires specialty in *surgery*.

**2013** - defends dissertation „*Diagnostic and therapeutic strategy in patients with cholangitis*“, MU – Varna, for which he was awarded a Diploma for „*Doctor*“ (№ 039/17.05.2013), in scientific specialty **03.01.37** – „*General surgery*“.

**2015** - loan academic post "*Associate Professor*" in surgery, in the Department of Surgery, MU-Varna(№82/18.12.2015)

**2016** – Head of Educational Center in Abdominal Surgery in the Department of Surgery, MU – Varna.

Assoc. Prof. Vasil Bozhkov, MD, PhD is a member of:

- Bulgarian Surgical Society– member of the Management Board
- Union of Scientists in Bulgaria – Варна
- BDU

Assoc. Prof. Vasil Bozhkov, MD, PhD made many postgraduate qualifications and courses in leading European centers – Bruxelles /2001/, Verona, Italy /2017/, Budapest, Hungary /2017/, Paris, France /2020/, IASGO (Pre-Congress course IOUS), Verona Italy /2023/ etc.

Assoc. Prof. Vasil Bozhkov, MD, PhD proficient in written and spoken languages – French, English and Russian.

## **3. Relevance of the topic:**

In recent years, biliary tract diseases have been increased, mainly due to complications of gall bladder disease (obstructive jaundice, cholangitis, residual calculosis, fistulas, stenosing papillitis).

The number of patients with increased surgical risk (advanced and elderly, severe concomitant pathology) is also increasing. Since the beginning of the

21st. GBD and its complications are the most common cause of hospitalization in developed countries. It affects between 10-20% of the adult population, and in about 75% - 80% of cases is asymptomatic.

Minimally invasive procedures (diagnostic and therapeutic) have revolutionized the treatment of patients with gallbladder and biliary tract disease and changed the profile of cholecystectomy.

More and more patients with GBD and its complications are undergoing laparoscopic cholecystectomy (LC).

The indications of cholecystectomy are also expanding, which is evident by the significant increase in number of operations performed for acalculous cholecystitis.

Cholecystectomy (OC or LC) is considered successful when complete relief of preoperative symptomatology is achieved in >90% of patients. However, about 15-20% of cholecystectomized patients reported various complaints such as: Intolerance to fatty foods; nausea and/or vomiting; pyrosis; flatulence; poor digestion; diarrhoea; periodic to acute abdominal pain in the right upper quadrant.

Decreased criteria for cholecystectomy during the laparoscopic era led to an increase in the number of rare and forgotten complications, such as BDI, scattered stones in the abdominal cavity, residual choledocholithiasis, cholangitis etc.

Postcholecystectomy syndrome (PCS) was first described by Womack and Crider in 1947<sup>1</sup>, and in 1950 Pribram was the first who gave the name postcholecystectomy syndrome. /PCS/.

A number of authors believe that the female sex, younger age, prolonged preoperative period with pronounced symptoms, lack of inflammatory process in the gallbladder and acalculous cholecystitis are associated with a higher incidence of PCS.

Essential for PCS are also the exact preoperative diagnosis, as well as the experience of the surgical team (much lower is the percentage when the interventions are performed in biliary surgery centers).

#### **4. Structure of the dissertation**

The dissertation of Assoc. Prof. Dr. Vasil Bozhkov is in a form and volume that meets the requirements of LDASRB, the regulations for its application and the rules of Medical University - Varna.

The dissertation is written in **250** standard pages and contains:

- Introduction - 3 pp.
- Literature review - 48 pp.
- Aim and Tasks - 2 pp.
- Clinical material and methods - 27 pp.
- Own Results and Discussion - 95 pp.
- Conclusions and contributions - 2 pp.
- Bibliography - 60 pp.

The illustration is done with tables **12**, figures **45** and **29** images.

**The Literature Review** is well pointed, clearly structured and includes the necessary information allowing the separation of the scientific problem. It carried out an analysis of:

- Historical data on the development of the problem over the years;
- The classifications of postcholecystectomy syndrome;
- Diagnostic criteria for PCS and the diseases that included it;
- The iatrogenic lesions of the biliary tract;
- Diagnostic methods for exacta diagnosis in PCS;
- The development of therapeutic methods for optimization of treatment and results;

In general, the dissertant knows the problem very well – many authors and centers working on diseases of the gallbladder, biliary tract and postoperative problems are cited.

The bibliographical reference cites **510** sources, **17** of them in cirillic and **493** in latin, most of them in the last 10 years, but there are also some with a longer period of time. In my opinion, several more Bulgarian authors and centers can find a place in the bibliographic reference, working on the pathology of the gallbladder and biliary tract and its optimal treatment.

The author sets a **aim**:

*" To survey, analyze and apply in clinical practice modern diagnostic and therapeutic strategy and treatment methods in patients with PCS in order to optimize outcomes, reduce complications and mortality in operated patients".*

The overall aim is well formulated in general point of view of the overall dissertation.

To achieve the main aim, the author sets the following **5 tasks**:

1. Retrospective and prospective analysis of patients with postcholecystectomy syndrome for the period 2011-2022 of patients treated at the Second Department of Surgery of Saint Marina University Hospital.
2. To analyze the current causes for appearance of postcholecystectomy syndrome.
3. To define the indications for surgical treatment.
4. To evaluate the applied endoscopic, interventional surgical treatment of postcholecystectomy syndrome.
5. Based on the accumulated experience to propose and implement a diagnostic and therapeutic algorithm for the treatment of postcholecystectomy syndrome.

In the dissertation, a retro- and prospective analysis of **1 532** patients with GBD and it's complications, for the period 2011 – 2022 operated in Second Department of Surgery of Saint Marina University Hospital.

Complications of diseases of the hepatobiliary tract are a serious problem of modern surgery, and this is especially true for patients in whom the performed surgical intervention has somehow aggravated and / or complicated the existing disease.

Very often the causes for this are rooted in the incorrect assessment of the indications to carry out and the choice of one or another intervention; carrying out additional, technically complex and sometimes risky operational interventions; imprecise surgical technique, insufficient experience, etc.

LC represents the highest percentage of all operations – 48,8%, followed by OC + ChDA – 19%; OC – 18% и OC with Kehr drainage – 14,2%. Dilated common bile duct is "*condition sine qua non*" for the performance of ChDA. ChDA is a safe and effective procedure of considerable value to achieve effective biliary tract drainage.

The exact diagnosis of the cause for PCS in the clinic are applied all modern imaging methods – US, CT, MRI, MRCP.

The dissertation is very well illustrated with images from the conducted research.

The causes for surgical intervention in patients with PCS are: iatrogenic bile duct injuries – 39,5%; choledocholithiasis – 33,7%; stenosing papillitis – 22,1%; liver abscess – 2,65%; d. cysticus remnat – 2,1%.

Iatrogenic lesions are a complex and very serious complication with increasing frequency rate over the past decade and are of great importance – medical and socio-economic. Despite the high percentage of very good objective early postoperative results after reconstructive operations on the occasion of BDI, the quality of life in both physical and mental scales is significantly deteriorated compared to groups with uncomplicated cholecystectomies and explorations of CBD. A good knowledge of the problem and anatomical variations protects the operating team from iatrogenic bile duct lesions and contributes to the optimization of the operative results.

The analysis of publications from leading centers in Europe and the rest of the world, as well as of our own results, leads to the development and application in practice of a modern diagnostic and therapeutic algorithm in patients with PSC.

**Conclusions** – A total of six are well formulated and they respond to the solution of the main objective and tasks set by the dissertant.

**Contributions** deduced from Assoc. Prof. Dr. Bozhkov is a total of five. They are well formulated and reflect an essential part of the analysed sections. They have a scientific, applicable-practical value and confirmatory nature and are the result of the activity personally of the dissertant, as well as the team of the Clinic of Surgery.

**The Autoreferat** – well structured in 52 pp., illustrated with figures and tables and reflects in a systematized form the theme and essence of the dissertation.

**4. Academic transcript of the scientific indicators for holding the scientific degree "Doctor of Science":**

- **A1** / Dissertation /2013 г./ - **50 p.**
- **B 2** / Dissertation /2023 г./ - **100 p.**
- **G 5 – 9** / Publications - **101,66 p.**
- **D 10** / Citations - **7 p.**
- Total D10-12** - **105 p.**

**Assoc. Prof. Dr. Vasil Bozhkov MD PhD** has submitted a list of **10** /ten/ real publications related with the topic of the dissertation.

The results of the applicant's research activities are reported on **8** scientific forums in Bulgaria and abroad.

Assoc. Prof. Dr. Vasil Bozhkov MD PhD is a supervisor and consultant of two PhD specialists – who have successfully defended ESD "**Doctor**".

### **5. Conclusion:**

The presented dissertation is complete, thorough, problematic, outlines the modern opinions for diagnosis, indications, methods and treatment in patients with pathology of the gallbladder and biliary tract and especially in complications after surgical interventions in connection with GBD and it's complications. There are results of a contributing nature and publicational events. It fully meets the criteria of of LDASRB, the regulations for its application and the rules of Medical University - Varna.

Assoc. Prof. Dr. Vasil Bozhkov MD PhD, with experience in elective and emergency surgery. Important practical and scientific contributions are derived from his scientific works on the basis of researched long-term material of patients diagnosed and treated personally by him, introduced surgical methods, developed algorithms for diagnosis and therapeutic management.

He has experience in medical management. He organizes and controls the conduct of educational activities in educational center in abdominal surgery, The Department and the discipline. He monitors and actively supports the professional development of academic staff and all medical staff. There are trainees, postgraduates and PhD students under his leadership.

All this gives me the right and reason to recommend to the members of the Scientific Jury to give their **affirmative vote** and to award the scientific degree "**doctor of science**" to Assoc. Prof. Dr. Vasil Bozhkov MD PhD

06.12.2023 г.

Varna

Reviewer:

Prof. Dr R. Madjov, MD, PhD, DSc

