

REVIEW

by Professor Dr. Dimitar Zhivkov Stoykov, MD, PhD, DSc

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Regarding the dissertation on the topic: "Pelvic and intestinal abscesses" to obtain a scientific and educational degree of "Doctor" In the specialty of "General Surgery"

Candidate: Dr. Hristo Yuri Nikov

Brief overview of the procedure: Based on Order No. P-109-172 dated 01.03.2023 of the Rector of MU-Varna, Prof. Dr. Valentin Ignatov, I have been appointed to participate as an external member of the scientific jury for the procedure of obtaining an educational and scientific degree of "Doctor" in the specialty of "General Surgery" for Dr. Hristo Yuri Nikov.

Brief personal information: Born on September 17th, 1992, in the town of Kotel. Completed secondary education in 2011 at GPZE in Sliven. Completed higher education in 2017 at MU "Parashkev Stoyanov" in Varna. Has been working as a doctor at the Second Surgical Clinic of UMHAT "St. Marina" in Varna since March 2018. Since November 2020, he has been a regular doctoral student at the Department of Surgical Diseases at MU-Varna. Proficient in English, German, and Russian.

Relevance of the dissertation work:

The dissertation work examines an interesting problem in visceral surgery - "Pelvic and intestinal abscesses." In the past century, abdominal abscesses evolved from a disease with extremely high mortality, even after surgical intervention, to a more insidious condition with a hidden course of development, thanks in part to the widespread use of antibiotics, especially in the postoperative period. However, left untreated, they lead to a fatal outcome in most cases. Late diagnosis and treatment lead to an increase in mortality. This fact primarily determines the relevance of the problem and the need to seek new solutions in surgical practice.

Analyzing the structure of the dissertation work, we gain an idea of a well-balanced scientific development that meets all academic requirements for a dissertation. It is written in a volume of 129 standard pages, of which 10 pages present the literary sources used. The bibliography includes 143 authors - 25 in Cyrillic and 118 in Latin. The main part covers the last ten years.

The material is illustrated with 18 figures, 39 tables, and 4 histograms.

The literature review covers 37 pages, is well-structured, and thoroughly examines the historical development of the problem from the time of Hippocrates to the present day. Different localizations of abscesses are discussed, with emphasis on the main therapeutic approach - i.e., surgical drainage of the purulent collection. The latest revision of the classification of intra-abdominal abscesses by Ansari P., Intra-abdominal abscess; Hofstra Northwell-Lenox Hill Hospital, New York; Last review Sep 2021 is used.

The characteristics of the clinical presentation for different types of abscesses, as well as the most common diagnostic methods, are described. The therapeutic algorithm presented in the literature for treating IAA (intra-abdominal abscess) requires a "step-by-step" approach. After diagnosis, treatment is reduced to two steps: "source control" and effective antimicrobial therapy.

Surgical control is the most important determining factor in the therapeutic algorithm. The main principles of this control are defined by Kishner, namely:

- (1) elimination of septic foci;
- (2) removal of necrotic tissue;
- (3) drainage of purulent exudate.

The rapid identification and elimination of the source of infection is vital to the outcome of treatment, but the subsequent drainage of the septic focus is no less important. The literature review compares the following types of drainage: percutaneous, laparoscopic, extra-abdominal under endoscopic ultrasound control, and conventional. The indications, advantages, and disadvantages of each method are specified.

It is noted that the most important element of conservative treatment is antimicrobial therapy, which begins as empirical therapy with broad-spectrum antibiotic combinations that cover the entire spectrum of presumed flora and is adjusted after the results of the AB-gram become available.

After discussing various therapeutic measures, according to literary sources, it is indicated that the main factor determining the outcome of treatment is the time from the onset of the disease at which therapeutic measures were initiated.

At the end of the literature review, the author provides a brief overview of various types of small abscesses, including their frequency, clinical characteristics, diagnostic methods, and treatment.

The goal is well-formulated and characterized by its multi-component nature, with the desired outcome being optimization of treatment outcomes, reduction of complications and readmissions, and achievement of a better quality of life. The five tasks required to achieve this goal are logically and appropriately directed. This is a clinical study involving 160 patients, 92 of whom are male and 68 are female, ranging in age from 16 to 82 years old. The average age of the 160 patients studied is 52.85 years, approximately 53 years old. The study is retrospective, covering a ten-year period from 2010 to 2020. Correlation analysis was used to process the data. Four of the most common symptoms in patients were analyzed:

- Abdominal pain - 87.5%
- Positive Blumberg sign - 63.8%
- Disturbances in intestinal passage - 46.9%
- Elevated temperature - 40%.

White blood cell counts were examined upon admission and discharge, with a statistically significant reduction in white blood cell count of 2.33 units observed at discharge compared to admission. The most commonly used imaging studies were ultrasound (US) and computed tomography (CT). Ultrasound was the most commonly used diagnostic method in emergency settings, and in the hands of an experienced ultrasound technician, it has a high diagnostic value. CT was used in cases where ultrasound examination was insufficient. In these cases, it had high informativeness and diagnostic value. Magnetic resonance imaging (MRI) was not used in emergency settings.

Preoperative staging of patients was performed according to the American Society of Anesthesiologists (ASA) criteria for those undergoing surgical treatment, with the majority of patients falling into ASA I-IV (98%) and most commonly ASA III (55/42.3%) patients. Preoperative staging is necessary for a more accurate assessment of operative risk.

Treatment:

Surgical control of the source remains the most important determining factor for survival and should be placed at the top of the therapeutic priority list. Conventional access is an absolute indication for multiple abscesses or those where drainage under imaging control is impossible (interstitial abscesses, complicated abscesses with fistulization, disruptions in the integrity of the gastrointestinal tract, etc.). During laparotomy, the surgeon performs direct or digital exploration to ensure that all loculations and septae are eliminated, detritus and exudate are evacuated, after which etiological surgical treatment is performed according to the given pathology, and the procedure is completed with adequate declivous drainage. This is the most commonly used surgical approach in this group of patients (133 out of 81% of the patients).

Percutaneous drainage is used in a limited number of cases (22 out of 14% of the cases) when there is an accurate diagnosis, direct access to single localized abscesses, and when it can eliminate the need for open techniques. The main reason for failure in this approach is the incomplete diagnosis regarding the size, spread, complexity, localization of the abscess, the nature and viscosity of the exudate, as well as the caliber of the placed drain.

As a result of the experience accumulated from the studied group of patients, the author has created a diagnostic-therapeutic algorithm that definitely has a place in clinical practice and represents a contribution to the development.

There are seven conclusions. Conclusions 1, 2, 3, and 7 are of a declarative nature. Conclusions 4, 5, and 6 concern therapeutic approaches and have applications in clinical practice.

The contributions are divided into five points. Points 3, 4, and 5 are definitely relevant to improving the results of treatment for patients with pelvic abscesses.

The author has presented three full-text publications related to the topic of the dissertation, one in Bulgarian and two in English, with Dr. Nikov being the first author in the publication in the Journal of Surgery.

In conclusion, I would say that the presented dissertation work is complete, distinguished by original elements, and applicable in surgical practice. The development meets the criteria for

awarding the educational and scientific degree of "Doctor". I vote **POSITIVELY** and recommend to the members of the Scientific Jury to give their positive vote.

May 4th, 2023

Pleven, Bulgaria

Sincerely,

Professor Dr. Dimitar Zhivkov Stoykov, MD, PhD, DSc