REVIEW

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REGARDING

Awarding the PhD degree to Dr. Boyan Hristov Georgiev, Higher Education Field 7: Health and Sports, Professional Field 7.1 Medicine, Scientific Specialty "Obstetrics and Gynecology"

Dissertation title: "Comparative Analysis of Techniques for Opening the Anterior Abdominal Wall in Cesarean Section: Misgav-Ladach and Pfannenstiel"

Dissertation author: Dr. Boyan Hristov Georgiev

Scientific supervisor: Prof. Emil Georgiev Kovachev, MD, PhD, DSc

The dissertation submitted for defense consists of a total of 110 standard pages and is illustrated with 26 tables, 14 figures, and 21 graphs. The bibliography includes 204 literature sources, of which 16 are in Cyrillic and 188 in Latin script.

Relevance of the topic

In his dissertation, Dr. Boyan Georgiev addresses a topic of undeniable relevance. Cesarean section remains one of the most widely performed surgical interventions in childbirth worldwide, with its frequency having increased significantly in recent decades. Despite its widespread use, techniques for opening the anterior abdominal wall continue to evolve in order to optimize operative time, minimize blood loss and complications, and improve maternal recovery. Two main techniques for opening the anterior abdominal wall in cesarean section are the Misgav-Ladach technique and the classical Pfannenstiel–Kerr technique. The Misgav-Ladach method was developed as a tissue-sparing, minimally invasive approach emphasizing minimal trauma, shorter operative time, and reduced blood loss. On the other hand, the Pfannenstiel–Kerr technique remains the standard and widely used approach, known for its reliability and safety; however, in patients with high body mass index (BMI) or in complicated cases, it may demonstrate disadvantages in terms of operative time and bleeding. Although both techniques have their advantages, there is a need for a systematic comparative analysis of their outcomes, particularly regarding operative parameters, blood loss, and delivery time.

The literature review clearly demonstrates that the doctoral candidate has conducted an in-depth study of a wide range of contemporary sources—188 in Latin script and 16 in Cyrillic—published within the last 10 years. The review has substantial informative value, is logically structured, and provides a solid foundation for the dissertation. It covers the anatomy of the anterior abdominal wall, Langer's lines, types of cesarean section, indications for cesarean section, preoperative preparation, postoperative follow-up, abdominal access techniques, uterine incision techniques, hysterotomy repair, uterine compression sutures, and closure of the peritoneum and rectus abdominis muscles.

The aim of the dissertation is to perform a comparative analysis of techniques for opening the anterior abdominal wall in cesarean section—Misgav-Ladach and Pfannenstiel–Kerr—and to identify the advantages of the Misgav-Ladach method over the classical Pfannenstiel technique.

The objectives of the dissertation are clearly formulated and include the following six tasks:

1. To assess the duration of cesarean section using both techniques.
2. To determine the time interval from the start of the operation to fetal extraction for both methods.
3. To identify intraoperative complications (blood loss, injury to other organs and tissues).

4. To evaluate the intensity of postoperative pain syndrome.
5. To compare the amount of medications required during surgery and the postoperative period.
6. To assess the economic efficiency of both methods for the hospital.

Materials and Methods

The subject of this retrospective and prospective study includes 327 patients who delivered at the Department of Obstetrics of the Specialized Hospital for Obstetrics and Gynecology “Prof. Dr. D. Stamatov”, Varna, during the period 2019–2023. Patients were selected based on having undergone operative delivery and according to the surgical technique used—Misgav-Ladach or Pfannenstiel cesarean section. Two groups were formed: an experimental group consisting of patients delivered via modified Misgav-Ladach cesarean section, and a control group consisting of patients delivered via Pfannenstiel cesarean section. Data sources included digital medical records, discharge summaries, medical histories, and operative logs.

Statistical methods included hypothesis testing for comparison of means and proportions using z-tests, as well as correlation analysis.

Results and Discussion

The Results and Discussion section is structured according to the objectives of the study, ensuring clarity and consistency. The findings are presented in tables, figures, and graphs. A strong correlation between BMI and operative time was established, with higher BMI associated with longer surgical duration.

The mean time for fetal extraction in the Misgav-Ladach group was 2.0 minutes, compared to 3.0 minutes in the Pfannenstiel group. In patients with BMI ≥ 30 kg/m^2, Misgav-Ladach was on average 7.5 minutes faster than Pfannenstiel. Blood loss was lower in obese patients delivered via Misgav-Ladach. The time from skin incision to delivery was longer in repeat cesarean sections compared to primary procedures.

Conclusion

In conclusion, Dr. Georgiev emphasizes that in Bulgaria cesarean sections account for approximately 30–35% of all deliveries, exceeding global averages. National obstetric guidelines emphasize the importance of modern, minimally invasive surgical techniques and individualized patient care. Currently, there is no standardized protocol for selecting the most appropriate cesarean technique in Bulgaria. Given increasing cesarean rates, obesity, and advanced maternal age, the development of such a protocol is of great clinical importance.

Overall, the dissertation meets all criteria for awarding the PhD degree in Obstetrics and Gynecology. I strongly recommend that the members of the Scientific Jury vote in favor of awarding the educational and scientific degree "Doctor" to Dr. Boyan Hristov Georgiev.

Заличено на основание чл. 5, §1, б. „В" от Регламент (ЕС) 2016/679

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