OPINION

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Regarding the dissertation for the award of the scientific-educational degree "Doctor," in the scientific specialty Obstetrics and Gynecology, Department of Obstetrics and Gynecology at Medical University - Varna.

Dissertation topic: **"Intrapartum Pelvic Floor and Perineal Injuries – Risk Factors and Prevention"**

Author: Dr. Dimitar Lyubchov Cvetkov

The submitted dissertation consists of 116 pages, including 28 figures, 5 tables, and 4 appendices. A total of 215 sources is cited, of which 5 are Bulgarian authors and 210 are foreign authors.

Relevance of the Problem

In his dissertation, Dr. Dimitar Cvetkov has developed an issue of undeniable relevance. Injuries of the perineum during childbirth affect millions of women worldwide each year. In the UK, approximately 85% of women sustain some form of perineal trauma during vaginal delivery, of which 69% require suturing. The frequency of perineal injuries depends on differences in obstetric practice. In the Netherlands, the rate of episiotomies is about 8%, compared to 14% in the United Kingdom, 50% in the USA, and up to 99% in some Eastern European countries. These levels also vary between hospitals within the same country. For example, in the USA, the rate of episiotomy ranges between 20% and 70% across different clinics. The overall risk of intrapartum injury to the anal sphincter (IIAS) is approximately 1% of all vaginal deliveries.

Brief Biographical Data and Teaching Activity

Dr. Dimitar Lyubchov Cvetkov was born in 1978. He graduated from Medical University – Pleven, specializing in Medicine, in 2003. He obtained his specialization in Obstetrics and Gynecology in 2011. From 2012 to 2024, he worked as an obstetrician-gynecologist and reproductive medicine specialist at "Nadezhda" Women's Health Hospital – Sofia. Since 2024, he has been working at In Vitro Vita at "Vita" Hospital – Sofia, as the head of the In Vitro Center. He completed a specialization at the University Clinical Center Ljubljana, Slovenia, under the guidance of Prof. Adolf Lukanovic, M.D., PhD

Dr. Cvetkov is fluent in written and spoken English, Slovenian, and Serbian. He is a member of the Bulgarian Medical Union, ESHRE, ESGE, GCH, and FIAPAC.

The review of the literature thoroughly covers intrapartum pelvic floor tears, risk factors, diagnosis, treatment, and prevention.

Objective of the Dissertation

The goal of the dissertation is to determine the actual frequency and severity of intrapartum pelvic floor injuries, their risk factors, as well as methods for prevention and treatment.

Main Tasks:

I. To establish the real frequency of anal sphincter injuries through imaging methods for early diagnosis (endoanal ultrasound).

II. To formulate the problem of intrapartum injuries to the pelvic floor as a cause of the common fecal incontinence among women in older age.

III. To assess the impact of the most common risk factors and their severity on the development of occult intrapartum anal sphincter injuries.

IV. To identify changes in the duration of the second stage of labor as an independent risk factor for pelvic floor rupture in clinical practice, following the application of a medical device – obstetric gel.

V. To develop an algorithm for the prevention, diagnosis, timely treatment, and monitoring of intrapartum pelvic floor injuries.

Materials and Methods

A retrospective study was conducted on 203 patients treated at UMHAT "Dr. Georgi Stransky" – Pleven, Bulgaria; "Nadezhda" Women's Health Hospital – Sofia, Bulgaria; University Clinical Center, Delivery Department – Ljubljana, Slovenia; and Gynecological-Obstetric Department, General Hospital – Trbovlje, Slovenia. The study period covered five years (2009–2014).

Patients were divided into groups with clearly defined inclusion and exclusion criteria. Various statistical methods were used for data analysis.

Own Results and Discussion

In the conducted study, after performing endoanal ultrasound, the frequency of IAS injury was found to be 25.4%, or in 16 out of 63 patients. All of these tears were classified as IIIA or less than 50% of the total thickness of the external anal sphincter.

In five of the patients with identified IAS injuries (5/16), the delivery was assisted with operative obstetric intervention – vacuum extraction, which emerged as an independent risk factor for pelvic floor tears.

No internal anal sphincter (IAS) injuries were detected in any of the study participants.

Clinically, 79.4% (50/63) of patients had no symptoms, while 13 (20.6%) reported subjective issues with gas retention of a transient nature.

Among the 13 patients with significant clinical symptoms of anal incontinence, concomitant IAS injury was also established.

Dr. Cvetkov concluded that the most common clinical symptom of difficulty in gas retention in the early days post-delivery is often accompanied by anatomical damage to the anal sphincter complex – in 76.9% (10/13).

Logistic regression analysis showed that the examined independent variables are risk factors for IAS injury: primiparas (OR 6.00; CI 4.23–15.35), gestational age >41 weeks (OR 8.50; CI 5.32–19.73), and fetal weight >4000g (OR 11.34; CI 6.54–22.37).

The study found no side effects from the application of Dianatal® in the newborns or the mothers.

An extended second stage of labor is a major risk factor for IAS injury. Reducing the pushing phase via the use of the obstetric gel could significantly decrease the incidence of these birth injuries, reduce patient fear and discomfort during labor, and minimize late complications such as anal and urinary incontinence, pelvic organ prolapses, sexual dysfunction, and overall quality of life deterioration.

The study demonstrated a marked tendency toward a significant reduction in the length of the second stage after application of Dianatal® obstetric gel.

Conclusions and Contributions

Eleven conclusions and six practical contributions were formulated, with three being of scientific-theoretical nature and three of scientific-practical, original character.

Scientific-Theoretical Contributions:

1) The actual frequency of intrapartum pelvic floor and perineal injuries in primiparas (25.4%) was established, confirming previously reported international data.

2) Key risk factors for intrapartum injuries were identified, along with their impact on the relative risk of severe perineal tears – primiparity (OR 6.00; CI 4.23–15.35), gestational age >41 weeks (OR 8.50; CI 5.32–19.73), and fetal weight >4000g (OR 11.34; CI 6.54–22.37).
3) For the first time in Bulgarian obstetric practice, a clinical study utilized the ICS and IUGA classification of intrapartum perineal injuries, based on the principles of the Integral Theory of Ulmsten and Papapetros for the functional unity of the pelvic floor.

Scientific-Practical Contributions:

1) Endoanal ultrasound was applied in Bulgaria for the first time—a quick, non-invasive, highly specific, and reliable method for early diagnosis of intrapartum pelvic floor injuries in obstetrics. The methodology is objective, comparable, and standardized.
2) The positive impact of using a medical device (obstetric gel) to prevent pelvic floor injuries was demonstrated through a significant shortening of the second stage, offering a new opportunity to reduce their incidence and severity, and consequently, late complications.
3) The practical algorithm developed for prevention, diagnosis, treatment, and follow-up of patients with intrapartum pelvic floor trauma (IPFT) is applicable for practitioners and residents, based on the latest research and clinical practices aligned with evidence-based medicine.

Conclusion

The dissertation work of Dr. Dimitar Tsvetkov "Intrapartum injuries of the pelvic floor and perineum - risk factors and prevention" is up-to-date and meets the scientometric criteria, as well as the regulations for academic development of MU - Varna for awarding the scientific and educational degree "Doctor".

I recommend to the esteemed members of the Scientific Jury to vote positively for awarding the scientific and educational degree "Doctor" in the scientific specialty "Obstetrics and Gynecology" to Dr. Dimitar Lyubchov Cvetkov.

03.09.2025

Prepa

Assoc. Prof. Zhivko Zhekov, MD,PhD