



REVIEW

by

Prof. Mario Petrov Milkov, MD, PhD

Head of the Department "Dental Materials Science and Prosthetic Dental medicine", Faculty of Dental Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna, habilitated in the Professional domain 7.1 Medicine, Medical University - Varna, member of a Scientific Jury, for awarding the educational and scientific degree - "PhD", according to an order of the Rector of MU-Varna № P-109-414/25.11.2024.

Subject:

Defence of a PhD-thesis of **Dr. Polina Petrova Ivanova**, a full-time PhD student, according to an order of the Rector of Medical University – Varna, №P-109-514/05.11.2020, on the topic: „**Postoperative period in rhinosurgery – packings, splints, postoperative care – types, necessity, effectiveness**“ for the award of the educational and scientific degree „Doctor (PhD)“, Field of Higher education: 7. Health care and sports, Professional domain 7.1. Medicine, PhD Programme „Otorhinolaryngology“.

Scientific Advisor: Assoc. Prof. Georgi Petkov Iliev, MD, PhD;

Scientific Consultant: Prof. Nikolay Rumenov Sapundzhiev, MD, PhD

Brief biographical data of the doctoral student:

Dr. Polina Petrova Ivanova was born on 28.09.1994 in the city of Dobrich, Republic of Bulgaria. In 2019, she graduated as a Master of Medicine at the Faculty of Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna. In the period November 2020 - November 2024, she was a full-time PhD-student at the Department of Neurosurgery and ENT Diseases, Faculty of Medicine, Medical University – Varna. In the period 2017-2018, Dr. Ivanova was a student-demonstrator at the Department of Neurosurgery and ENT Diseases, Educational sector of ENT Diseases, Faculty of Medicine, Medical University – Varna.

Dr. Ivanova presents an extensive record of participation in congresses in Bulgaria and abroad, as well as courses attended and additional internships and trainings in the period 2017 – 2024.

Dr. Polina Ivanova speaks fluently 2 languages – English and Spanish.

Relevance and structure of the dissertation

In my opinion the dissertation is structured correctly, written on 125 pages, of which: Content – 2 pages, Abbreviations used – 1 page, Introduction – 3 pages, Literature review – 39 pages, Aim and objectives – 2 pages, Materials and methods – 9 pages, Results – 39 pages, Discussion – 10 pages, Conclusions from the PhD work – 1 page, Concluding remarks – 2 pages, Contributions – 1 page, List of publications on the dissertation and Participations in congresses related to the dissertation – 1 page, Bibliography – 14 pages. The work is illustrated with 10 tables and 56 figures. There are 6 contributions. The literature review includes 185 bibliographic sources in Latin. The text is presented clearly and concisely in a very good scientific style.

The analysis of the literature review in the provided PhD-thesis is up-to-date and includes a sufficient number of contemporary authors who treat the problems related to the tasks.

My conclusion is that Dr. Ivanova is well acquainted with the issues.

The aim is formulated precisely and clearly, namely: to investigate the effects of various intranasal packings and splints following (rhino)septoplasty, thereby developing guidelines for their use and the management of the postoperative period.

The fulfillment of the aim was achieved through six (6) main tasks; modern diagnostic, clinical, sociological and statistical methods were used.

1. To study and classify the types of postoperative intranasal packings and splints described in the literature.

2. To evaluate the role of postoperative intranasal packings and splints on early and late complications following rhinological surgeries.

3. To conduct surveys among patients undergoing rhinological surgeries regarding the effects of postoperative intranasal packings and splints on pain and comfort during the postoperative period.

4. To assess the effects of postoperative intranasal packings and splints on mucociliary clearance using the saccharin test.

5. To evaluate the effects of postoperative intranasal packings and splints on bacterial colonization and the risk of infection.

6. To develop guidelines for the use of intranasal packings and splints following septoplasty.

I believe that the set tasks **fully correspond** to the topic and **are sufficient to achieve the scientific aim** of the research.

Dr. Ivanova hypothesized that:

- Intranasal tamponades would produce negative results, regardless of whether they were gauze or PVA, and in particular, they were expected to cause more significant discomfort to the patient both during the stay and during removal.
- Splints would perform a better role in preventing complications than tamponades.
- Regarding mucociliary clearance, the expectations were in favor of an improvement, namely a shortening of the saccharin test time after the surgical intervention, regardless of the type of intranasal packing used.
- No clinically significant nasal infection was expected to develop as a result of intranasal splints and tamponades, but positive pathogen carriage was expected with both types of intranasal packing.

The materials and methods are sufficient to derive reliable and representative results.

The study was approved by the Commission on Ethics of Research of MU-Varna – Protocol № 103/27.05.2021.

The PhD-work includes data obtained from 98 patients in the postoperative period after surgical interventions on the nose – (rhino)septoplasty, in which intranasal tamponades and splints were placed, who underwent the ENT Clinic at the University multiprofile hospital for active treatment "St. Marina".

The study was a prospective, randomized, controlled trial for a period of 3 years, and was carried out on the territory of the University Hospital "St. Marina", ENT Clinic. Dr. Ivanova described in detail the criteria for inclusion and exclusion of patients in and from the study. A protocol was described that each examined and treated patient underwent, namely: taking anamnesis and ENT examination (rhinoscopy, pharyngoscopy, otoscopy) with filling out a form. The forms for the Patient Examination Form and the Patient Feedback Survey are presented. The research methods used are described in sufficient detail: questionnaire method, microbiological examination of nasal secretions with a sterile swab, saccharin test, statistical methods. Dr. Ivanova describes the division of patients into 4 groups, based on the methods of intranasal packing, namely according to what was placed at the end of the surgical intervention:

transmucoseptal absorbable sutures, silicone plates with or without air channels, stitched in the anterior part, gauze tamponade, PVA tamponade.

- Group 1 – Transseptal sutures + silicone splints (without air channels) + gauze packing.
- Group 2 – Transseptal sutures + silicone splints (with air channels).
- Group 3 – Transseptal sutures + silicone splints (without air channels) + PVA packing.
- Group 4 – No transseptal sutures + silicone splints (without air channels) + gauze packing.

Dr. Ivanova has richly illustrated her PhD-thesis with photos of the splints and tamponades used.

The methods used are adequately directed to each of the tasks set. The data obtained are subjected to detailed statistical analysis – descriptive and analytical methods, based on parametric tests, analysis of variance (One Way - ANOVA), variational, regression, comparative (hypothesis evaluation - χ^2 , t-test, Student's tests) and correlation analysis (Pearson coefficient (r) and Spearman (p)), analysis for assessing the risk of a given event occurring. Data processing was carried out with the statistical software package - IBM SPSS for Windows, v.20.0, and for all analyses performed, an acceptable level of significance of $p < 0.05$ at a confidence interval of 95% is assumed. There is rich visualization with histograms, tables and figures. They respond to the assigned tasks by applying the necessary research methods.

The analysis of the results is accurate and critical. The results obtained are sufficiently illustrated with figures and tables. **Nine (9) conclusions** have been made.

In the Discussion chapter of the presented thesis, Dr. Ivanova skillfully compared her results with the accumulated literature data from clinicians in the field. I believe that this would be useful for other authors and clinicians who express the same interests.

The **publications** on the topic, presented in relation to the thesis, are sufficient in number – **two (2)** and well present the experience of the author in the field.

The presented **Conclusion** of the PhD-work is logical and justifies the conclusions of the PhD-thesis.

Contributions of the PhD-thesis are **six (6)**, divided into two groups: of a theoretical and of a practical origin:

Contributions of a theoretical origin:

1. A comprehensive literature review was conducted on the application, types, benefits, and drawbacks of postoperative intranasal packings and splints, as well as their effectiveness and impact on patient outcomes.
2. A detailed comparative analysis was performed on the effectiveness and influence of treatments involving packings and splints on the postoperative condition of patients.

Contributions of a practical origin:

1. The advantages and disadvantages of treatments with packings versus splints were presented in detail.
2. The impact of harmful habits, such as smoking, on mucociliary clearance in the context of various surgical interventions was demonstrated.
3. The effectiveness of intranasal packings and splints as a safe treatment method with minimal risk of complications for patients was confirmed.
4. Guidelines for the use of intranasal packings and splints after septoplasty were developed.

The dissertation was carried out solely by the PhD-student under the guidance of her academic supervisor: Assoc. prof. Georgi Petkov Iliev, MD, PhD, and summarizes thoroughly, reliably and adequately the results reached. Theoretical knowledge of Dr. Ivanova on the research topic and her abilities to participate in and conduct independent research are demonstrated.

The abstract of the dissertation, written over 56 pages and very well illustrated with 10 tables and 56 figures, summarized its content in a concise form and meets the requirements and regulations of Medical University – Varna. The results of the research were popularized by the PhD-student in two (2) full-text scientific publications – in a Bulgarian and in an international journal and two (2) participations in international congresses.

CONCLUSION

My experience as a clinician and instructor in the field of Otorhinolaryngology gives me the reason to highly assess the presented PhD-thesis. Modern requirements of science are met. I believe that the topic of the dissertation of **Dr. Polina Petrova Ivanova** is of significant

interest for the development of Medicine as a professional domain, and Otorhinolaryngology as a specialty.

The PhD-thesis „**Postoperative period in rhinosurgery – packings, splints, postoperative care – types, necessity, effectiveness**“ covers all scientific requirements of the law of academic growth and the regulations, regarding it, in Medical University – Varna for the award of the educational and scientific degree "PhD".

The scientific work, personal qualities and professional experience of the PhD-student let me give a **POSITIVE** assessment in front of the Scientific Jury for the award of the educational and scientific degree - "PhD" to **Dr. Polina Petrova Ivanova**.

07.01.2025

Varna

Reviewer

/Prof. Mario Petrov Milkov, MD, PhD/

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