

STATEMENT

prepared by Prof. Rosen Gospodinov Kolarov, DMD, PhD,

Faculty of Medicine, Medical University of Varna, Bulgaria,

according to Order No. R-109-383/19.09.2025 of the Rector of the Medical University of Varna, Bulgaria.

Subject: *procedure for obtaining the degree of Doctor of Sciences,*

Higher education: "7. Health and Sports",

Professional field: "7.1. Medicine",

Specialty "Surgery" at the Department of General and Operative Surgery at the Medical University of Varna, Bulgaria.

On a dissertation on the topic:

"Lymph nodes in maxillofacial surgery - the norm and the most common diseases"

Author: Assoc. Prof. Yanko Georgiev Yankov, MD, PhD

1. General presentation

This statement was prepared on the basis of an order of the Rector of the Medical University of Varna, Bulgaria No. R-109-383/19.09.2025.

The presented set of materials on paper and electronic media are in accordance with Art. 44 (3) of the Regulations for the Development of Academic Staff at the Medical University of Varna, Bulgaria.

2. Biographical information for the doctoral student

Assoc. Prof. Yanko Georgiev Yankov, MD, PhD was born on 17.04.1989 in the city of Shumen, Bulgaria.

In 2014, he graduated from the Faculty of Medicine of the Medical University of Varna, Bulgaria.

In 2016, he obtained a master's degree in Health management.

In 2020, he obtained a specialization in maxillofacial surgery.

From 2021 to 2022, he was a doctoral student in independent training at the Department of General and Operative Surgery at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria.

In 2023, he defended his dissertation on the topic "Values of procalcitonin and the delta neutrophil index in surgery for inflammatory diseases of the head and the neck".

Since 2015, he has been a physician at the Clinic of Maxillofacial Surgery at the University Hospital "St. Marina", Varna, Bulgaria.

From February 2019 to October 2019, he has been a part-time assistant, specialty "Oral and Maxillofacial Surgery", at the Department of General and Operative Surgery and the Department of Oral Surgery at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria.

From October 2019 to July 2023, he is a full-time assistant professor in the specialty "Maxillofacial Surgery" at the Department of General and Operative Surgery at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria.

In 2023, he was elected as Chief Assistant Professor at the Department of General and Operative Surgery at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria.

In 2024, he was elected as Associate Professor.

Assoc. Prof. Yanko Yankov, MD, PhD leads classes in maxillofacial surgery for fourth and fifth year dental students in Bulgarian and English at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria.

He speaks English at a very good level.

3. Research methodology

The realization of the goal was achieved through the implementation of a main goal including 5 directions and 14 main tasks, namely:

Purpose of the study:

1. to perform a modern and detailed cytological, histological, anatomical-topographical and anatomical-oncological description of the regional lymph nodes in the head and neck region, with an emphasis on their importance in maxillofacial surgery;
2. to analyze the diseases of the lymph nodes in the maxillofacial region in patients hospitalized in the Clinic of Maxillofacial Surgery, with distribution by gender, age and clinical diagnosis;
3. to classify the diseases of the lymph nodes into main diagnostic groups and to study their frequency and characteristics in clinical practice;
4. to study the etiological bacterial spectrum in patients with abscesses and phlegmons originating from lymph nodes of the head and neck;
5. to study antibiotic resistance in patients with infectious diseases of the lymph nodes, with analysis of the relationship between gender, age and type of isolated microorganism.

Tasks to be performed:

1. to conduct a systematic review of the modern scientific literature concerning the cytological, histological and anatomical structure of the lymph nodes in the head and neck region;
2. to describe the topographic location of the lymph nodes in the head and neck region and to systematize their distribution by anatomical levels in view of their clinical significance;
3. to analyze the anatomical-oncological role of the lymph nodes as regional structures in malignant neoplasms in the maxillofacial region;
4. to create a retrospective database of patients with lymph node diseases who have passed through the Clinic of Maxillofacial Surgery for a 10-year period;
5. to perform a statistical analysis of the frequency of lymph node diseases in the maxillofacial region depending on the age, sex and clinical diagnosis of the patients;
6. to perform a detailed clinical analysis of representative cases from each main diagnostic group;
7. to prepare a diagnostic classification of diseases of the lymph nodes in the maxillofacial region by etiology - nonspecific, specific, reactive and chronic lymphadenitis, lymphoproliferative and metastatic diseases;
8. to study the distribution of patients according to the formed diagnostic groups and their frequency;
9. to compare the clinical features of each group in terms of gender, age and localization of the involved lymph nodes;
10. to determine and analyze the microbiological spectrum in patients with purulent-inflammatory processes originating from the lymph nodes of the head and neck;
11. to identify the main bacterial causative agents of lymphogenic abscesses and phlegmons and to determine their frequency;
12. to process the results of the antibiograms of patients with infectious diseases of the lymph nodes included in the study, and to assess the degree of antibiotic resistance to the main groups of antimicrobial agents;
13. to analyze the relationships between antibiotic resistance, gender, age of patients and the type of isolated microorganisms;
14. to offer substantiated recommendations for empirical selection of antimicrobial treatment for infectious diseases of the lymph nodes in the maxillofacial region.

The study is a retrospective and descriptive analysis of clinical, microbiological, imaging and histological data from patients with diseases of the lymph nodes of the head and neck.

Covers a ten-year period - from 01.01.2015 to 31.12.2024.

It was conducted at the Clinic of Maxillofacial Surgery at the University Hospital for "St. Marina" for active treatment, Varna, Bulgaria.

Approved by the Research Ethics Committee at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria in 2025.

The total number of patients who passed through the clinic was 8325 - 4756 men and 3569 women.

They were treated surgically and conservatively.

The following research and analysis methods were used in the implementation of the tasks set: the data of all patients included in the study according to the previously defined criteria were collected and structured in spreadsheets using the "Microsoft Excel" software; statistical processing of the information was carried out using the "SPSS" program package, and visualization of the results - using "Microsoft Excel" and "Jamovi software 2.2.0"; the tabular material was formatted in "Microsoft Word", and the graphic elements included column charts with clusters, three-dimensional pie charts with separated sectors, box-plot graphs, bar charts and "SmartArt" type structures; all calculations and visualizations were implemented on the Windows 7.0 operating system (2010).

The following statistical methods were applied: descriptive statistics (calculation of mean values, standard deviation, median, frequencies and percentages), comparative statistical tests (non-parametric Mann-Whitney U Test for comparison of continuous values with asymmetric distribution, two-sided Fisher Exact Test and two-sided Pearson Chi-Square Test for categorical data) and correlation analysis for assessment of the relationships between the individual variables studied.

In the descriptive analysis of the studied groups, frequency tables with absolute and relative values were used, as well as presentation of basic statistical parameters - minimum and maximum values, median, arithmetic mean and standard deviation. The distribution of the mean measurements was illustrated by box-plot graphs, while categorical data were presented with bar graphs.

The differences between the groups in terms of the analyzed indicators were assessed using the "Mann-Whitney U Test", with the visualization of the deviations being performed using "Error bar" type graphs. All results with a significance level of $p < 0.05$ were considered statistically significant.

4. Characteristics and evaluation of the dissertation work

The dissertation work contains a total of 222 pages and is illustrated with 93 tables, 41 figures and 9 images. The bibliography includes 428 literary sources in English.

Discussed, accepted and is directed for defense before a scientific jury by Department Council No. 10, Department of General and Operative Surgery of the Faculty of Medicine at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria on 09.09.2025

5. Contributions and significance of the dissertation work

1. A complete cytological, histological and anatomical-topographic analysis of the regional lymph nodes in the head and neck area was performed, with an emphasis on their importance in maxillofacial surgery.

2. A detailed analysis of the age and gender demographic distribution of patients with lymph node diseases in the maxillofacial region has been performed.

3. For the first time in Bulgaria, a large and detailed comparison between surgical and conservative treatment in patients with lymphadenopathy in the maxillofacial region has been made, which reflects the significant predominance of surgical interventions.

4. The etiological bacterial spectrum of acute purulent lymphadenitis of the head and neck and the abscesses and phlegmons arising from them has been described.

5. An assessment of the antibiotic resistance of the isolated strains in purulent lymphadenitis of the head and neck has been made, which allows for a more precise choice of antibiotic treatment.

6. Recommendations for clinical practice in the treatment of patients with metastatic involvement of the lymph nodes in the neck have been prepared.

7. High antibiotic sensitivity of intestinal bacteria and contrasting partial to high resistance of staphylococci to a number of antibacterial agents in purulent infections of the lymph nodes in the maxillofacial region have been proven, which may support the choice of their empirical antibacterial treatment.

8. Gender-specific antibiotic sensitivity has been proven in acute purulent lymphadenitis of the head and neck, against which the antibiotic piperacillin is three times more effective in men than in women.

9. Recommendations have been formulated for optimizing antibiotic therapy in acute purulent lymphadenitis in the maxillofacial region, based on established patterns in sex-specific resistance - men have higher sensitivity to most antibiotics, while women require more precise selection.

6. Assessment of publications on the dissertation work

Ten publications related to the dissertation work are presented, with Assoc. Prof. Yanko Yankov, MD, PhD being the first author in eight of the publications and second in the remaining two. They have been published in prestigious journals and the results obtained in them satisfy the legal requirements for a dissertation work, both quantitatively and qualitatively.

7. Personal participation of the dissertation candidate

The conducted studies and observations of patients and the resulting conclusions and contributions to the dissertation are the author's personal work.

8. Abstract

The abstract contains 76 pages and is prepared in accordance with the requirements of the the Act on the Development of Academic Staff in the Republic of Bulgaria and the

regulations of the Medical University of Varna, Bulgaria. It reflects the results achieved in the dissertation.

9. Critical remarks and recommendations

The set of materials from the dissertation provided to me is complete and in accordance with the Act on the Development of Academic Staff in the Republic of Bulgaria and the regulations for its implementation, as well as with the Regulations of the Medical University of Varna, Bulgaria. I have no remarks or recommendations.

CONCLUSION

The topic for the dissertation chosen by Assoc. Prof. Yanko Georgiev Yankov, MD, PhD **"Lymph nodes in maxillofacial surgery - the norm and the most common diseases"** treats a current problem in medical and dental science and practice. In this sense, the topic is relevant and very well chosen.

The literature review is comprehensive and gives a clear idea of the current state of the problem under consideration. It ends with a critical analysis, which is a good basis for the research conducted.

The clinical material and the studies conducted are of interest to medical and dental science and practice. The results obtained in the dissertation, their interpretation, as well as the publications presented related to it, I consider to be the personal work of the author.

Based on everything noted here, I consider the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of the Academic Staff in the Republic of Bulgaria and the relevant Regulations of the Medical University of Varna, Bulgaria to be fulfilled.

In conclusion: I confidently give a positive assessment of the dissertation work on the topic **"Lymph nodes in maxillofacial surgery - normal and most common diseases"** and will vote **"YES"** for awarding the scientific and educational degree **"Doctor of Sciences"** in the scientific specialty **"Surgery"** to **Assoc. Prof. Yanko Georgiev Yankov, MD, PhD.**

21.10.2025

Prepared the statement:

Prof. Rosen Gospodinov Kolarov, DMD, PhD

Заличено на основание чл. 5,
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