

REVIEW

by Prof. Dr. Silvia Bogdanova Tsvetkova-Trichkova, MD, PhD

Head of the Department of Diagnostic Imaging

Faculty of Medicine, Medical University-Plovdiv

On a dissertation work for awarding the educational and scientific degree "Doctor".

Field of higher education: 7. Health care and sports

Professional direction: 7.2. Dental Medicine

Doctoral program: Dental Diagnostic Imaging

Author: Dr. Tamara Petrova Petkova

Form of the doctorate: Full-time doctoral student of the FDM at MU - Plovdiv

Department: "Imaging diagnostics, dental allergology and physiotherapy", Faculty of Dental Medicine, MU - Plovdiv

Topic of the dissertation: "Study of the diagnostic possibilities of modern imaging methods in patients with congenital clefts of the lips and palate"

Scientific supervisors: Associate Professor Nikolay Sirakov, MD, PhD

Prof. Dr. Ilian Doikov, MD, PhD

1. General presentation of the procedure and the doctoral student

This review was prepared on the basis of the Order of the Rector of the MU - Plovdiv No. R-476/05.02.2024, by which a Scientific Jury is determined according to the procedure for the public defense of the dissertation work.

The presented set of materials on paper and electronic media are in accordance with Art. 115 (1) of the Procedure for the acquisition of the ESD "Doctor" in MU - Plovdiv and the Regulations of MU - Plovdiv dated 06.11.2014. All documents were provided to me in the legally established term.

The doctoral student has presented 3 full text scientific publications and 3 participations in scientific forums related to the topic of the dissertation.

All documents are properly prepared and submitted.

2. Brief biographical data for the doctoral student

In 2009, Dr. Tamara Petkova graduated from the Faculty of Dentistry, Medical University of Plovdiv as a Master of Dentistry.

From 2010 to 2015, she worked as a dental medicine doctor at AIPPPDM "Blaga Stoicheva", and since 2015 she has been a doctor and manager of her own practice at AIPPPDM "Tamara Petkova".

In 2018, Dr. Petkova was enrolled as a full-time doctoral student at the Department of Diagnostic Imaging, Dental Allergology and Physiotherapy at the Faculty of Dental Medicine, Medical University of Plovdiv, and from March 2022 she is also a resident in the same department .

Dr. Petkova is a member of:

Bulgarian Dental Union (BDU)

Bulgarian Scientific Society of Dental Medicine (BSSDM).

Dr. T. Petkova is fluent in written and spoken English.

3. Relevance of the topic and appropriateness of the set goals and tasks:

Congenital clefts of the lip and palate are the most common craniofacial malformations and account for about 15% of all congenital anomalies. For diagnosis, segmental intraoral, occlusal and panoramic radiographs are often used, which have disadvantages associated with projection deformation, two-dimensionality of the image and superimposition of additional structures in the maxilla region. For correct diagnosis and quality treatment, it is important to choose the most suitable imaging method. Cone-beam computed tomography (CBCT) is an advanced imaging technology, the main advantages of which are related to the provision of 3D volumetric, surface and sectional information of the craniofacial structures, as well as a lower effective dose of ionizing radiation, in short exposure time and lower cost compared to classic CT.

The problems considered in the dissertation work correspond to the modern view on the diagnosis and interpretation of the findings related to the considered anomaly. The presented topic corresponds to scientific interests. In accordance with the topic, a clearly formulated goal and specifically defined 6 tasks are identified. There is relevance of the problem developed in the dissertation in scientific and scientific-applied terms.

4. Knowing the problem

Doctoral student Dr. T. Petkova knows the state of the problem very well and critically evaluates the literary material. This is evidenced by the extensive and thorough literature review and thorough the review of modern imaging methods for the diagnosis of congenital clefts of the lip and palate.

5. Research methodology

The doctoral student has chosen appropriate modern methods that allow achieving the set goal and obtaining an adequate answer to the tasks solved in the dissertation work.

6. Characterization and evaluation of the dissertation work

The dissertation is written on 170 standard pages and is structured in the accepted way in the relevant sections, illustrated with 91 figures, 63 tables and 38 appendices. In the bibliographic list, 168 literary sources are cited, of which 8 are in Cyrillic and 160 are in Latin. The presented dissertation complies with the requirements for structuring and voluminous content.

The introduction is clearly formulated and reflects the directions of the problem under consideration and the need for its development.

The literature review is comprehensive, up-to-date and refers to the goals and objectives of the dissertation work. Imaging methods are described in detail, with an emphasis on cone beam computed tomography, as well as congenital clefts of the lip and palate.

The aim of the dissertation is clearly formulated: "To evaluate the capabilities of cone-beam computed tomography in congenital clefts of the lips and palate as an optimal imaging method for preoperative monitoring and postoperative follow-up.", and the 6 tasks are set in accordance with it.

The Materials and Methods section details the methods used and is presented sequentially. In the first part of the study, 222 patients with abnormalities of the upper lip and palate were included, who were subjected to the cone-beam computed tomography method performed on a Planmeca Pro Max 3D device; slice thickness 0.6 mm. In the second part of the dissertation work on a part /90 patients/ of the whole group sample /222 cases/ a "case-control study" was conducted. The "cases" are those with bone grafting - 54 patients. The "controls" were without bone grafting and were age-matched - 36 patients. A criterion for inclusion in this part of the study is that additional ones have also been performed - measurement with CBCT of the exact volume of the congenital cleft, the presence of osteosclerotic tissue around the cleft, data on hypertrophy of the mucous membrane of the maxillary sinus, etc.

Modern **statistical methods** are applied - descriptive analysis, non-parametric methods - chi-square, hypothesis evaluation, and to determine the magnitude of the risk of developing a given complication/condition depending on the exposure to the researched risk factor by calculating the adjusted Odds ratio/ the risk (adjusted Odds Ratio - OR) and its 95% confidence interval, graphic analysis - to visualize the processes and phenomena.

All statistical analyses were performed using the statistical program SPSS v. 21.0.

The analysis of the results is thorough and demonstrates the PhD student's knowledge of collecting, evaluating information and analyzing the data obtained. The results are correctly described and well-illustrated through tables and figures.

The discussion follows the same sequence as the arrangement of the results - the similarities and differences with the publications presented in the scientific literature are precisely examined and compared.

After each of the tasks there are logically arranged conclusions. The conclusions are specific and reflect in summary the results related to the main and most important aspects of the development and correspond to the set goals and objectives.

7. Contributions and significance of the development for science and practice:

The specified contributions of the dissertation work are objective and derived from the obtained results. They reveal the modern direction of scientific work. They are formulated as follows:

1. An optimally balanced algorithm is offered for diagnosis, tracking the dynamics of the disease, reporting the therapeutic result after bone grafting, analysis and description of patients with congenital clefts of the lips and palate.

2. The level of application of the cone-beam computed tomography method in patients with congenital clefts of the lips and palate is analyzed.

3. The factors influencing the application of the cone-beam computed tomography method in patients with congenital clefts of the lips and palate are analyzed.

4. The level of awareness of the parents of patients with CCLP and their attitude towards the cone-beam computed tomography method are studied.

5. The types of congenital clefts of the lips and palate are systematized, the features and problems in the diagnosis of each of them are described.

The topic of the dissertation work "**Study of the diagnostic possibilities of modern imaging methods in patients with congenital clefts of the lips and palate**" is current. It responds to the scientific interests and research needs in this area of dental imaging.

8. Evaluation of publications on the dissertation work

In connection with the dissertation, 3 full-text publications and 2 participations in scientific forums in Bulgaria and 1 participation in a scientific forum abroad are presented. Dr. T. Petkova is the lead author in 5 of the presented publications. The number of scientific works covers the necessary quantitative criteria.

9. Personal participation of the doctoral student.

The doctoral student was personally involved in conducting the studies related to the dissertation work, summarizing and analyzing them.

10. Abstract:

The abstract is written on 50 pages, summarizing the presented in the dissertation, as well as the achieved results. It is ample in volume and richly illustrated with tables and figures. It has been

prepared in accordance with the requirements of the LDASRB and the regulations of Medical University - Plovdiv.

11. Critical remarks and recommendations:

I recommend Dr. Tamara Petkova to continue her work in the field of diagnosis of patients with congenital cleft lip and palate and to publish the results in refereed journals, including those with an impact factor.


CONCLUSION

The presented dissertation, developed by Dr. Tamara Petrova Petkova, a full-time doctoral student, on the topic: **"Researching the diagnostic possibilities of modern imaging methods in patients with congenital clefts of the lips and palate"** is an in-depth complex study with an up-to-date and well-chosen topic, clearly formulated goal, tasks and results and with original scientific and scientific-applied contributions. The dissertation shows that Dr. Tamara Petkova possesses theoretical knowledge and professional skills, demonstrates qualities for collecting and analyzing scientific information and independently conducting scientific research.

The presented materials comply with the requirements of the LDASRB, the regulations for the implementation of the LDASRB and the relevant Regulations of MU - Plovdiv.

Based on the above, I confidently give my positive assessment of the conducted research, presented by the peer-reviewed dissertation work, abstract, achieved results and contributions, and I propose to the members of the honorable Scientific Jury to vote with a positive vote for awarding the educational and scientific degree "Doctor" in scientific specialty "Dental Diagnostic Imaging" of Dr. Tamara Petrova Petkova.

25.03.2024
Plovdiv

Prepared the opinion: 
(Prof. Dr. Silvia Bogdanova Tsvetkova-Trichkova, MD)

Заличено на основание
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