STATEMENT
by Prof. Dr. Ivan Poromanski

dissertation for the award of the educational and scientific degree "PhD"

professional field - 7.1. "Medicine"

scientific specialty - "Pediatric Surgery"

Author. D-r Nikola Kostadinov Kartulev

form of the doctoral studies: free doctoral student

Topic: 'Bronchoscopic obturation for persistent air leak after video-assisted thoracoscopic abscessotomy in childhood'

Scientific supervisor: prof. dr. Hristo Ivanov Shivachev, PhD

Biographical data:

Dr. Nikola Kostadinov Kartulev obtained his professional qualification of Master of Medicine at Medical University - Sofia in 2014. He started his professional career at the Pediatric Surgery Clinic of the University Hospital "N.I. Pirogov" as a resident doctor in 2015. From 06.2015 he was enrolled as a specialist in the same clinic. He acquired his specialty "Pediatric Surgery" - 2021. He underwent specialized courses in the field of laparoscopic surgery. Currently he is a specialist in "Thoracic Surgery". He holds a certificatec: 2021- Conventional Gastrointestinal Endoscopy, 2022. - Interventional Gastrointestinal Endoscopy, 2023. - Bronchology Level I, 2024 - Bronchology Level II. He is a member of the Society of Paediatric Surgery and SCIOP EUROPE.

Dissertation:

The topic of the dissertation of Dr. Nikola Kartulev is "Bronchoscopic obturation in persistent air leak after video-assisted thoracoscopic abscessotomy in childhood". The dissertation contains 118 pages and 10 pages Bibliography. It is illustrated with 62 figures and 19 tables. The bibliography contains 124 references.

The literature review discusses the definitions and classifications of pneumonia and its complications. A separate chapter discusses air leak and various minimally invasive methods of its treatment. The historical background of bronchoscopic obturation, its phases of action, and the emerging results are described in detail.

The doctoral student presents and analyzes the use of VATS and bronchoscopic obturation for persistent air leak in the postoperative period. The work demonstrates how by improving the technical characteristics of minimally

invasive technical devices and their mastery by surgeons, significant progress in the treatment of this nosological entity is achieved.

The aim of this dissertation is clearly defined: to develop and implement a comprehensive approach to persistent air leak after VATS abscessotomy in childhood.

The five tasks are clearly formulated:

1. To evaluate the efficacy of minimally invasive bronchoscopic obturation with a synthetic blocker.
2. To determine the indications and to develop a diagnostic and therapeutic algorithm for the application of the method.
3. To evaluate early and late results.
4. To compare the results of the method with others used in practice.
5. To introduce the methodology as a routine procedure in practice.

The clinical material covers 120 patients aged up to 18 years with PPPC treated in the Pediatric Surgery Clinic at the University Hospital "N.I. Pirogov" for the period 2015-2023. The children included in the thesis were divided into three groups according to the course of the disease:

Group A - patients after VATS abscessotomy and spontaneously resolved air leak.

Group B - patients after VATS absessotomy and lung resection due to PAL.

Group C - patients after VATS absessotomy and bronchoscopic obturation due to PAL

Various diagnostic and therapeutic methods and indications for their performance are described in detail. The technique of VATS in children with PPPC was introduced as routine in the pediatric surgery clinic of N.I. Pirogov University Hospital in 2004. In 2016, bronchoscopic obturation with a synthetic obturator or synthetic sponge, which is pre-modelled according to the size of the bronchus in which it will be placed, was introduced for the first time in the same study.

The author demonstrates his results on 38 pages, comparing the different patient groups by means of pictorial tables, figures and clinical examples.

In discussing the results, Dr. Kartulev found a statistically significant difference in hospital stay, prolonged drainage time, and lung parenchyma loss. These values were lowest in patients in whom airflow was discontinued spontaneously (group A). In the other two groups, prolonged air leak was recorded, which did not cease spontaneously. Hospital stay and time of prolonged drainage were shorter in patients with bronchoscopic obturation compared with those in whom lung resection was performed.

In relation to the results, 9 conclusions are drawn, which

meet the stated aim and objectives. The treatment algorithm is upgraded in children with PPPC and the indications for performing

interventions.

The dissertation has 5 contributions. The doctoral candidate has attached to his work 4 publications related to the thesis.

In conclusion, I believe that:

The dissertation of Dr. Nikola Kostadinov Kartulev "Bronchoscopic obturation in persistent air leak after video-assisted thoracoscopic abscessotomy in childhood" shows a serious approach to the study of this surgical problem and manages to derive a treatment management algorithm that is based on meaningful information and is useful for the professional setting, the those working in this field.

The PhD student shows a strong scientific background that gives the this study of high value. For these reasons and because of that the thesis fully meets the requirements of the Act for the development of academic staff in the Republic of Bulgaria and the Regulations for the development of the academic staff at the University Hospital "N. I. Pirogov" EAD -Sofia I confidently recommend the members of the esteemed Scientific Jury to award the degree of Doctor of Education and Science to Dr. Nikola Kostadinov Kartulev in the scientific specialty "Pediatric Surgery", in professional field 7.1.Medicine7. Health and Sport.

Prof. Dr. Ivan Poromanski, MD