

REVIEW

by Prof. Dr. Ognyan Georgiev BRANKOV, MD, pediatric surgeon

of the scientific works of Assoc. Prof. Dr. Hristo Ivanov Shivachev, Ph.D.
in connection with a competition for the election of the academic position PROFESSOR at
The Clinic of Pediatric Surgery of MHAT "NI Pirogov EAD

I have been appointed Chairman of the Scientific Jury, appointed by Order № RD-26-2481 / 13.10.2021 of the Executive Director of UMHAT "NI Pirogov" regarding the Competition for the academic position "Professor" in the field of higher education 7. Healthcare and sports in Professional field 7.1 Medicine and scientific specialty "Pediatric Surgery", announced in SG, issue 61 of 23.07. 2021

Assoc. Prof. Dr. Hristo Ivanov Shivachev is the only candidate in the announced competition. He fulfills all the necessary requirements for participation in the competition for the academic position of "professor", listed in the Regulations for academic development of MHAT "NI Pirogov". The presented documents on electronic and paper media are in order and in full, certified by the Scientific Department of the hospital.

I. BIOGRAPHY AND PROFESSIONAL DEVELOPMENT

Assoc. Prof. Dr. Hristo Shivachev was born on September 8, 1969 in Stara Zagora. He graduated from the Medical University in Sofia in 1995. He started working in 26 polyclinics in Sofia as a therapist on duty. Since 1997 he has been appointed as an intern at the Department of Pediatric Thoracic Surgery, Second Pediatric Surgical Clinic of NI Pirogov Hospital. In 2011 he defended the scientific degree "Doctor" in Pediatric Surgery, and in 2012 the academic position "Associate Professor". From 2014 to 2017 he was Head of the Department of Pediatric Thoracic Surgery. From 2017 until now he has been the Head of the Pediatric Surgery Clinic.

In 2004 he acquired a specialty in "Surgery", in 2012 a specialty in "Pediatric Surgery", in 2021 a specialty in "Thoracic Surgery". Additional qualifications: "Videothoracoscopic surgery", "Laparoscopic surgery", "Bronchology" 1 and 2 level, "Conventional gastrointestinal endoscopy" 1 level. Specialist in Vienna, Naples, Genoa. The applicant has submitted the relevant documents.

II. SCIENTIFIC ACTIVITY

Assoc. Prof. Dr. Hristo Shivachev participated in the current competition with a monograph and 136 scientific papers, of which 50 publications in local and foreign medical journals and 86 scientific papers presented at national and international congresses. The peer-reviewed papers are published or reported after the acquisition of the scientific-educational degree ASSOCIATE PROFESSOR.

The topic is mainly in the field of thoracic surgery, with a prevalence of congenital and acquired lung diseases in childhood. On this topic and the monograph DIAGNOSIS AND TREATMENT OF PARAPNEUMONIC PLEURO-PULMONAL COMPLICATIONS IN CHILDHOOD. The second significant scientific burden is the problems of esophageal diseases. The presented 50 publications are distributed as follows: 20 articles in journals referenced in world databases Scopus and Web of Science; 30 articles published in journals referenced in the National Reference List; 86 reports in scientific forums;

The candidate is an independent author in 1 monograph and 6 reports, first author in 9 publications and 22 reports, second author in 19 publications and 22 reports, in the others he is a third and next author.

The peer-reviewed publications have been published in a number of leading scientific journals such as: Surgery, Bulgarian Medical Journal, Bulgarian Medicine, Pulmonology Science, Emergency Medicine, Pediatrics, Obstetrics and Gynecology, European respiratory journal, Journal of Cardio-Thoracic surgery, Pediatric Pulmonology, Transplantation, Pediatriya, Children, Infection and immunity, etc.

According to a report from the CMB of MU - Sofia, Assoc. Prof. Shivachev has an Impact factor of 30,512 for publications in foreign journals. Regarding the bibliographic citations, the candidate has 10 Bulgarian and 15 foreign (according to SCOPUS data), but with Impact factor - 1.9045 there are 4 foreign citations.

III. TEACHING AND TEACHING ACTIVITY

Assoc. Prof. Shivachev has a serious classroom and extracurricular employment with graduates, students and PhD students, as well as the head of individual training - modules of the specialization program in "Surgery" and "Pediatric Surgery" and extensive teaching and research activities / data are reflected in the provided reference for the scientific-teaching activity of the candidate /. He actively participates in the semester exams in general and pediatric surgery. He is a co-author of the draft standard for Pediatric Surgery, as well as the national consensus for the treatment of peritonitis.

Assoc. Prof. Dr. Hristo Shivachev, MD presents a reference for teaching hours, which shows that for the last three years there are 138 teaching hours, teaching hours 420 hours, extracurricular activities 150 modules, work as a member of committees, including as chairman of the commission for the state exam in the specialty "Pediatric Surgery", the author has six doctoral students. Two of them defended their dissertations, the first in 2018 and the second in 2020. One doctoral student was expelled with the right to defense, which is forthcoming in May 2022, and the other three are about to complete their dissertations.

IV ANALYSIS OF SCIENTIFIC ACTIVITY

The scientific works of Assoc. Prof. Hristo Shivachev can be systematized in several sections:

1. Inflammatory diseases of the lungs

The long-term experience of the candidate is synthesized in the monograph, which is a habilitation thesis. The monograph covers an important area of pediatric surgery, namely inflammatory diseases of the lungs and pleura. They are still a problem of great theoretical and practical importance and their relevance and significance are determined by the frequency of the disease, prevalence and severity. It affects the diagnosis and treatment of parapneumonic pleural complications in childhood, known in the past as purulent-destructive processes of the lungs and pleura. It is written on 186 pages and examines the development of complications of community-acquired pneumonia in childhood. The basic element is the introduction for the first time in our country in childhood of video-assisted thoracoscopic surgery (VATH). The minimally invasive surgical techniques and interventional bronchoscopy used by the author for the treatment of parapneumonic complications are presented. An developed algorithm for diagnosis and treatment of pulmonary and pleural complications is presented. The results of the application of the algorithm are presented and compared with the previous period, taking into account the reduction of the need for lung resection from 100 to 8%, reduction of surgical procedures, reduction of hospital stay and faster recovery of patients.

The work is a large-scale study of one of the significant problems in pediatric surgery, which is carried out for the first time in our country and is the result of extensive own clinical experience and creative research. It is a very serious and in-depth scientific development of extremely important scientific and practical value. Its valuable advantage is the systematic approach, which consistently presents all aspects of the topic. The presentation of the problem of inflammatory diseases of the lungs occupies a large part of the publications and scientific communications (2, 5, 8, 25, 27, 34, 35, 37, 38). Video-assisted thoracoscopic surgery (VATH) for parapneumonic pleural complications in childhood was introduced for the first time in Bulgaria. The thoracoscopic rehabilitation of pleural complications developed and introduced by the author, as well as an algorithm of behavior in pulmonary complications, the introduction of interventional bronchoscopy in postoperative broncho-pleural fistulas, as well as the methodology of videothoracoscopic abscessomy as a major scientific organoscopy in the treatment of these diseases in children.

2. Congenital and acquired diseases of the lungs and chest wall

The pathogenesis, clinical picture and terms for surgical treatment of congenital anomalies of the lungs, as well as the application of BATH in them have been thoroughly studied. The important place of antenatal diagnosis in congenital lung malformations is emphasized. Due to the close collaboration between pediatric surgeons and anesthesiologists, very good treatment results have been achieved in children with respiratory distress syndrome caused by neonatal pathology requiring surgical treatment. The approach to the treatment of spontaneous pneumothorax in children and the application of BATH in its surgical treatment is innovative.

For the first time in Bulgaria the endoscopic treatment of congenital and acquired stenoses of the trachea and bronchi in children was introduced. The results of the operative and endoscopic treatment of this pathology are presented.

For the first time in Bulgaria, Assoc. Prof. Shivachev developed and implemented the mini-invasive Nuss technique in children with pectus excavatum, performing the manipulation to correct the defect by placing special plates under videoscopic control. A protocol of behavior for various chest wall deformities has also been introduced.

Of scientific interest are cases of aspiration of multiple foreign bodies in the bronchi, manifestation of pulmonary aspergillosis, a case of spontaneous pneumomediastinum and bronchial asthma.

3. Diseases of the esophagus

Associate Professor Shivachev and the clinic run by him are leaders in Bulgaria in the problems of diagnosis and treatment of congenital and acquired diseases of the esophagus in childhood. The candidate discusses the main problems in the diagnosis and treatment of gastro-oesophageal reflux disease (GERD). The diagnostic-treatment algorithm introduced in the Pediatric Surgery Clinic is presented, including imaging, fibroesophago-gastroscopy with targeted biopsies, probe impedance pH-metry and indications for surgical treatment. The laparoscopic fundoplication introduced for the first time in pediatric surgery in our country is also presented.

The Department of Pediatric Thoracic Surgery is a leader in Bulgaria in the problems of corrosive burns of the esophagus, and their diagnosis and treatment have been developed since 1970. The algorithm of behavior in corrosive esophagitis in the acute and chronic period is introduced, the applied methods and the achieved results are analyzed. The very large experience of cynicism with plastic and reconstructive operations with colon and stomach, as well as their late results are analyzed.

Behavior and outcomes in congenital and acquired esophageal strictures are discussed. The aspects of congenital tracheo-oesophageal fistulas and esophageal atresia are considered, the applied treatment methods and the achieved results are presented, as well as the approach of the acquired tracheo-oesophageal fistulas and the achieved results.

4. Congenital and acquired diseases of the diaphragm

A protocol of conduct in congenital diaphragmatic hernias is presented, covering prenatal diagnosis, fetal surgery, preparation and surgical treatment of these patients. The obtained results and survival are discussed. For the first time in Bulgaria, thoracoscopic plification of the diaphragm during relaxation was introduced in children. The indications for surgical treatment and the application of the methodology, as well as the early and late results are considered.

5. Diseases of the mediastinum

Assoc. Prof. Shivachev discusses the use of BATH in the treatment of benign and malignant diseases of the mediastinum. He introduced thoracoscopic biopsy for the first time in children to assess primary neoplasms and discussed the early and late results of this method. The protocol of behavior and staging of tumors in childhood developed and introduced by the author allows to determine the treatment tactics.

6. Abdominal surgery

Cases of theotagal ileus and peritonitis are discussed, and the surgical methods used and the results obtained are considered. Assoc. Prof. Shivachev introduces for the first time in children the

laparoscopic operative technique for acute appendicitis and presents the obtained results and the proposed algorithm of behavior. Cases with neonatal ileus and peritonitis are discussed, and the surgical methods used and the results obtained are considered. A methodology for parenteral nutrition at home in children with congenital intestinal pathology has been studied. A diagnostic and treatment approach to intussusception has been developed. A case of trichobezoar has been reported as a cause of gastrointestinal obstruction.

Modern laparoscopic methods for diagnosis and surgical manipulation of the abdominal neoplasm testis have been introduced as part of the general surgical methodology for cryptorchidism.

The laparoscopic assessment and biopsy of primary tumor lesions introduced by the author are presented. A protocol of behavior and staging of abdominal tumors in childhood and determination of treatment tactics has been developed and introduced.

7. Varia

The great experience in the treatment of permagnetic lymphohemangiomas of the neck and mediastinum in neonates and children is presented. The challenges in the diagnosis and treatment of these congenital anomalies are considered. The experience of the clinic in the treatment of children with pulmonary and intestinal forms of COVID-19 infection is also presented.

V CONCLUSION

The scientific production of Assoc. Prof. Shivachev is sufficient in volume and quality to participate in the competition. It even exceeds the required and set points both in the National Minimum Criteria and in those adopted by the Scientific Council of the Hospital (Appendix 1) From the analysis of the scientific production of Assoc. Prof. Shivachev it can be concluded that his practical and scientific activity is of great contribution and is essential for the development of pediatric surgery in Bulgaria. The works in the field of pediatric breast surgery have the main predominance. Associate Professor Shivachev is an innovator in a number of areas of theory and practice, especially in terms of diagnostic and surgical methods of treatment. The main contributing algorithms for the diseases of the lungs and pleura, esophageal surgery, abdominal surgery and surgical oncology. They define the rules and clinical behaviors on which future generations of surgeons will be based.

The scientific activity of Assoc. Prof. Dr. Hristo Shivachev MD meets the requirements and covers the academic and scientometric criteria for holding the academic position "Professor", adopted by the Scientific Council of UMHAT "NI Pirogov" EAD - Sofia and reflected in Regulations for the development of the academic staff. I accept his scientific contributions, emphasizing her leadership in the field of minimally invasive surgery in childhood.

Associate Professor Shivachev has 35 years of surgical experience, has specialized in leading European clinics and has participated in many international congresses. He is a member of the Union of Scientists, the BCD, the Bulgarian Association of Pediatric Surgeons and its Board of Directors, Deputy Chairman of the BMA. He is a member of EUPSA, UEMS and WOFAPS. Fluent in English and Russian. Associate Professor Shivachev did not provide a report on his operative activity, but I have personal impressions of his work and I believe that he is a built surgeon with versatile experience, performing planned and emergency operations in infancy and early and late childhood.

All the above facts from the professional biography and scientific production of Assoc. Prof. Dr. Hristo Ivanov Shivachev, MD, give me a definite reason to recommend to the Scientific Jury to be awarded the scientific title "Professor".

Sofia

15.11.2021

Prof. Ognyan Brankov, MD, MSc

