

Statement

from:

Prof. Dr. Vladimir Nakov MD,
Neurosurgery Clinic, "Acibadem City Clinic MBAL Tokuda" EAD Sofia

Regarding: Competition for the academic position "associated professor" in scientific specialty 03.01.41. "Neurosurgery" in the field of higher education 7. "Healthcare and sports" in professional field 7.1. "Medicine" for the needs of the Neurosurgery Clinic at "Acibadem City Clinic UMBAL Tokuda" EAD. The competition was announced in State Journal no. 47/04.06.2024. The scientific jury was appointed by Order No. 15-05-99/05.08.2024 of the Executive Director of UMBAL Tokuda EAD and the Procurator of UMBAL Tokuda EAD on the proposal of the Director of the Directorate "Scientific and Educational activity" based on a decision of the Scientific Council - Minutes No. 53/26.06.2024

The only candidate in the competition is Dr. Toma Yuriev Spiriev MD, PhD.

The documents presented by Dr. Spiriev comply with the regulatory framework. The deadlines for holding the competition and the procedure for it are respected according to the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations on the Terms and Conditions for the Acquisition of Scientific Degrees and the Occupancy of Academic Positions at the Sofia University.

I. BRIEF BIOGRAPHICAL REFERENCE AND CAREER DEVELOPMENT

Education and Training:

Dr. Toma Yuriev Spiriev completed the full course of the Medical University - Sofia, majoring in "Medicine" (Diploma No. 18949/ 17.12.2009). In January 2016, he acquired the board certification as a specialist in neurosurgery (Diploma No. AS 015162 / 02.03.2016). In 2015, he successfully completed a professional qualification course "Health Management". In June 2019, he defended his dissertation on the topic "Preoperative 3D planning and 3D simulation of neurosurgical access during cranial surgical interventions" and obtained the educational and scientific degree "Doctor" (Diploma No. 8 / 2019). During the period 2006 - 2024, Dr. Spiriev conducted 9 clinical internships in Germany, Denmark, Italy, France, the Netherlands, Switzerland and participated in 7 scientific projects in Germany, Denmark, Spain, Japan. During the period 2007 - 2022, Dr. Spiriev participated in 35 specialized courses held in Austria, England, Bulgaria, Germany, Denmark, Spain, Italy, Romania, Serbia, USA, France, Switzerland, Czech Republic, as well as online and holds dozens of acquired certificates in the field of neurosurgical anatomy, spinal surgery, endoscopic surgery, surgical treatment of brain tumors and cerebrovascular diseases, minimally invasive pain treatment, surgical treatment of basal tumors, etc.

Work experience:

Dr. Spiriev has been working from 2009 until now as a resident physician, neurosurgery specialist and neurosurgeon at the Neurosurgery Clinic of "Acibadem City Clinic UMBAL Tokuda" EAD.

Teaching activity:

Dr. Spiriev is a chief assistant in neurosurgery at the "Department of Surgery" and a part-time assistant in anatomy at the "Department of Anatomy, Histology, Pathoanatomy and Forensic Medicine" of the Faculty of Medicine at Sofia University, Lozenets Hospital.

Membership in organizations:

Dr. Spiriev is a member of the Board of the Bulgarian Society of Neurosurgery, of EANS and the Committee of Young Neurosurgeons of EANS, of the Bulgarian Anatomical Society and of the Bulgarian Medical Union.

II. SCIENTIFIC PRODUCTION

1. Pursuant to the Regulations for the Implementation of the Law on the Development of the Scientific Staff in the Republic of Bulgaria, Appendix for Area 7: Health Care and Sports, Direction 7.1: Medicine, Table 1 - Group of Indicators "A", Indicator 1: Dissertation: Dr. Spiriev there are 50 points when 50 points are needed.

ONS "Doctor" - Diploma No. 33978 / 19.04.2010

Dr. Spiriev obtained the ONS "Doctor" after defending a dissertation on "Preoperative 3D planning and 3D simulation of neurosurgical approaches in cranial surgical interventions". The dissertation work is dedicated to an innovative method for its time for correct, based on CT or MRI images, preoperative planning through computer simulation of different surgical approaches and selection of the most suitable one. Based on open-access software, this method has established itself in the following years as a routine method in daily neurosurgical practice, which is the best assessment of the value of the dissertation work.

2. According to the Regulations for the implementation of the law on the development of scientific staff in the Republic of Bulgaria, Appendix for area 7: Health care and sports, Direction 7.1: Medicine, table 1 - group of indicators "B", indicator 3 and 4: monograph or at least 10 scientific publications in publications, referenced and indexed in world-indexed databases with scientific information: Dr. Spiriev has 123.13 points out of the required 100 points.

Dr. Spiriev presents 14 publications in refereed and indexed publications (references 1 - 14 from the list of publications).

Eight of these 14 articles are devoted to the application of photogrammetry and videogrammetry in neuroanatomy and neurosurgery. One article is an overview (#9), one article shows the utility of combining photogrammetry with virtual reality to obtain realistic 3D anatomical models (#2), one article describes the technical details of creating realistic neurosurgical intraoperative 3D models using videogrammetry and photogrammetry, based on the use of the operating microscope as a camera (#5), and five articles present a detailed depiction and description of various anatomical structures and regions as realistic 3D images with the possibility of visualization from different angles and at desired magnification. In this way, the trochlear nerve (#4), the facial nerve (#10), V2, V3 and V4 segments of the vertebral artery (#11), the superficial and deep muscles of the neck (#13) and the sellar region are represented. from two perspectives: endonasal and transcranial (#6).

One of the above 14 publications (No 12) presents the indications, application and methodology of building 3D printed models in neurosurgical practice to achieve precise preoperative planning.

Two publications are devoted to the importance of miRNAs and related genetic biomarkers for the diagnosis, prognosis and determination of therapeutic options in glial tumors (No 8) and in metastatic tumors (No 14) of the brain.

Two articles are detailed descriptions of neurosurgical technique in various operations: article No7 published in the section "How I do it?" of Acta Neurochirurgica, describes in detail the surgical technique in excision of hemangioblastoma of the cervical myelin, and article No3 presents the anatomical markers and operative technique based on a case demonstration of extended open-door endoscopic transorbital access to the anterior and middle cranial fossae.

One publication is a case-report of a rare case of traumatic CCA occlusion with subsequent interdisciplinary surgical revascularization (No1).

3. According to the Regulations for the implementation of the law on the development of the scientific staff in the Republic of Bulgaria, Appendix for area 7: Health care and sports, Direction 7.1: Medicine, table 1 - group of indicators "D" Dr. Spiriev has 218.49 points at required 200 t.

3.1. Group of indicators "D", indicator 7: Publications in publications, referenced and indexed in world-famous databases with scientific information - Dr. Spiriev has 188.49 points.

Dr. Spiriev presents 16 publications in refereed and indexed publications (references 15 - 30 from the list of publications).

Five publications are anatomical studies focusing on specific anatomical details of various basal surgical approaches to the anterior and middle cranial fossae and to the retrosellar and retroclival regions. Two of these publications (No21 and No23) present the anatomy of the frontotemporal branch of the facial nerve and relevant surgical techniques for its preservation. Article #17 describes in detail the anatomy of an endoscopic approach through a lateral orbitotomy, and article #20 demonstrates the utility of an endoscopic endonasal posterior clinoidectomy as an adjunct to the standard frontolateral approach in operations targeting the retrosellar space and specifically the interpeduncular cistern. Article No22 is a detailed anatomical study of the location and anatomical significance of McCarty's point as a marker for keyhole.

Five publications are case-reports on rare and neurosurgically challenging cases. Two articles are devoted to tumors involving the suprasellar region and the III ventricle. Article No23 is a case report describing a case of advanced craniopharyngioma of the III ventricle excised transcranial transcallosal transventricular transforaminal access. I would highlight article No24 describing a combination of endoscopic transsphenoidal with endoscopic transventricular access for resection of a giant pituitary adenoma. Article No16 demonstrates the stepwise management strategy of a patient with a large carotid body tumor compressing the jugular vein with subsequent venous stasis and thrombosis of the dural venous sinuses and intracranial hypertension. Article No15 is a case report of transistor contrast-induced cortical blindness as a complication following intravenous contrast administration during endovascular coil embolization of a basilar apex aneurysm. Article No27 is devoted to a rare case of recurrent manifestations of the central trigeminocardial reflex induced by surgical stimuli during resection of a temporoparietal meningioma in an 18-month-old child.

An article (No19) was published in the "How I do it" section of Acta neurochirurgica and is an interesting demonstration of a classic technique for clipping a vertebro-basilar aneurysm, supported by a respectable video.

Two articles are devoted to technological innovations in neurosurgery. Paper No25 describes the combination of neuronavigation with transcranial magnetic stimulation for preoperative speech area mapping in a patient with opercular glioma in the dominant hemisphere, and paper No26 demonstrates that neuronavigation cannot replace anatomical and surgical knowledge, skill, and experience, but is reliable addition to them in surgery of the orbit.

Article No. 29 presents a surgical series of patients with a cardiovascular complication after administration of hydrogen peroxide during neurosurgical interventions.

Article No30 presents an algorithm for diagnosis and surgical treatment of patients with the rare Bow-hunter syndrome. It is particularly valuable that the algorithm was prepared based on our own series of 5 patients.

Article No28 is more neurological and is devoted to the occurrence of tics and their relationship to the autonomic nervous system.

3.2. Group of indicators "D", indicator 8: Publications in non-refereed publications with scientific review - Dr. Spiriev has 30 points.

According to this indicator, Dr. Spiriev presents two articles that discuss the indications of using corticosteroids in neurosurgery. Article No31 is a systematic review of the literature and after analysis concludes that corticosteroids are effective only in vasogenic cerebral edema at an initial dose of 10 mg IV. followed by 4mg every 6 hours. Article No32 does a systematic literature review on the issue of the use of high-dose methylprednisolone in spinal cord injury, and the data from the review show that there is no definitive confirmation of the benefit of corticosteroids in acute spinal cord injury.

4. *According to the Regulations for the implementation of the law on the development of the scientific staff in the Republic of Bulgaria, Appendix for area 7: Health care and sports, Direction 7.1: Medicine, table 1 - group of indicators "D" Dr. Spiriev has 218.49 points at required 200 t.*

Dr. Spiriev's publications have been cited 480 times in international databases and 7 times in non-refereed and non-indexed publications. The impressive number of citations reflects the wide range of different neurosurgical fields on which his publications are focused. Dr. Spiriev's overall impact factor is 56.364 and his HI-index is 14.

5. *According to the Regulations for the implementation of the law on the development of the scientific staff in the Republic of Bulgaria, Appendix for area 7: Health care and sports, Direction 7.1: Medicine, table 1 - indicator group "and E Dr. Spiriev has won one international scientific project and two national scientific projects.*

The international project "Three-Dimensional Photorealistic atlas of Neurological surgery" 2022 was funded by the EANS Scientific Research Fund after winning a competition among 90 other applicants.

There are two national projects and they were won after a competition for the Scientific Research Fund of SU "Kl. Ohridski":

- "Neurovascular Layered Anatomy of Suboccipital Fossa in Posterior Cerebral Revascularization" 2022

- "Teaching Anatomy Students with 3D Photorealistic Dissection Models Presented Through Virtual and Augmented Reality" 2023.

III. SCIENTIFIC CONTRIBUTIONS

According to the presented publications, Dr. Spiriev's scientific contributions are in the following areas:

1. Development of an original methodology based on photogrammetry and videogrammetry for 3D imaging of neurological structures and surgical 3D images based on creation of own dissection specimens and based on imaging of own surgical material. Dr. Spiriev is one of the pioneers in this field worldwide. He is the ideologist, founder and driving force behind the world-famous 3D Atlas of Neurological Surgery (publications No2, 4, 5, 6, 9, 10, 11, 13).
2. Introduction into the routine neurosurgical practice of accessible software for preoperative 3D planning and 3D simulation of different variants of surgical accesses to determine the optimal approaches for each individual case. Dr. Spiriev's dissertation is dedicated to this topic, and after its defense, he continued to develop and improve this activity in daily neurosurgical practice (Dissertation).
3. Introduction into routine neurosurgical practice of 3D printed models based on CT or MRI images. This activity has proven to be particularly useful in operations where normal anatomy is missing or deformed to the point where it cannot serve as a guide during operations. Such cases are craniosynostosis in children, congenital or acquired deformations of the cranial base and/or craniovertebral joint, in the degenerative spine in the advanced stages, fractures with significant dislocations of vertebrae, etc. (Publication No. 12)

4. Building a comprehensive approach for surgical treatment of complex neurosurgical cases based on detailed planning, improvement of neurosurgical technique and reduction of operative risk by optimizing surgical accesses and intracranial microsurgical manipulations based on defining certain anatomical structures as navigational landmarks and as boundary zones for the surgeon's actions (Publications No. 1, 3, 7, 16, 19, 23, 24).
5. Study of the importance of mitochondrial RNA for the appearance, progression and progressive malignancy of glial tumors with a view to determining prognosis and optimizing their chemotherapeutic treatment. (Publications No. 8, 14).
6. Introduction into neurosurgical practice of technological innovations (neuronavigation and transcranial magnetic stimulation) for preoperative planning and intraoperative control (publications No. 25, 26).

IV. EDUCATIONAL AND TEACHING ACTIVITY

1. Dr. Spiriev has submitted certificates of study load in a total of 261 hours for the academic years 2021/20202, 2022/2023 and 2023/2024.
2. Dr. Spiriev has submitted documents certifying that he has held the position of "Chief Assistant" for the past two years (from 01.08.2022 to the present), which corresponds to the requirements of PPZRNSRB (Regulations for the Implementation of the Law on the Development of Scientific Composition in the Republic of Bulgaria).
3. Dr. Spiriev was a lecturer in two sessions of UpSurgeOn, Cadaver Free Training Course: Skull Base Surgery (Aneurismal), July 2022, Sofia, Bulgaria and Glioma Surgery Course, September 2023, Sofia Bulgaria.

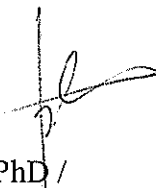
V. DIAGNOSTIC AND THERAPEUTIC ACTIVITY

According to my direct personal observations, over the past 7 years, Dr. Spiriev has participated in the performance of hundreds of neurosurgical operations, in a large number of which he was the operator, including those with a high volume of complexity: intraaxial brain tumors, skull base tumors, brain aneurysms, tumors of the spine and spinal cord, degenerative spinal diseases.

VI. CONCLUSION

The presented documents and materials demonstrate that the scientific, teaching and diagnostic-treatment workload of Dr. Spiriev significantly exceeds, in quantitative and qualitative terms, the volumes required according to PPZRNSRB for holding the academic position of "associate professor". Therefore, I am convinced to vote "FOR" awarding Dr. Spiriev the academic title of "associate professor" and call on the other members of the jury to vote in the same way.

09/24/2024 Prepared the review:



/ Prof. Dr. Vladimir Nakov MD, PhD /