

Personal Statement

From: Prof. Dr. Hristo Tsekov Tsekov, MD, Department of Neurosurgery at Achibadem City Clinic UMBAL Tokuda EAD – Sofia

Regarding: the conduction of a competition for the nomination of the academic position "professor" / area of higher education 7. Health care and sports, professional direction 7.1 Medicine - scientific specialty Neurosurgery for the needs of the Neurosurgery Clinic at Achibadem City Clinic, UMBAL "Tokuda Hospital" EAD, Sofia

The competition was announced in National Newspaper no. 98 of 24.11.2023. The Scientific Jury was appointed on the basis of the Law on the Development of the Academic Staff of Republic Bulgaria regarding paragraph 4, paragraph 2 and 29a and paragraph 61 of the Regulations for the development of the academic staff of Acibadem City Clinic UMBAL Tokuda EAD and decision of the Scientific Council with Protocol No. 49 of 01.11. 2023. Candidate: one, associate professor Vladimir St. Nakov, MD, Head of Neurosurgery Clinic, Acibadem City Clinic, UMBAL "Tokuda" EAD.

All the requirements for holding a competition have been met, and the candidate's submission has been verified.

Dr. Vladimir Stefanov Nakov was born in 1966 in the city of Sofia, completed his education in his hometown. In 1992, he graduated a Master Degree at the Medical Academy, Sofia. As a student, he worked as a sanitarium and a nurse. After receiving his master's degree in medicine, he worked for several years as a resident physician and senior resident physician in the department of neurosurgery at the "St. Anna" AD, Sofia. From 2012 to 2016, he held the position of Head of Department at the Clinic for Neurosurgery at the Military Medical Academy Sofia, and from 2016 until now he is a neurosurgeon at Acibadem City Clinic Tokuda UMBAL Sofia. Since 2000, he acquired specialty in neurosurgery, and in 2010 he completed a course in Health Management. In March 2015, he successfully defended his PhD thesis on: "Results of the early surgical treatment of ruptured cerebral aneurysms" and acquired the title of MD. Since 2017, after holding a competition, Dr. Vladimir Nakov has been appointed as an associate professor at the Clinic for neurosurgery, and since the beginning of this year, again by competition, he holds the position of Head of Neurosurgery Clinic. He is known in the medical community for his ability to be an extremely precise and productive neurosurgeon, treating his patients and colleagues with responsibility and ethics.

He completed a number of prestigious courses for highly specialized activities: Spinal cord injury, 2008 AO spine; Degenerative diseases of the spine, 2008; Injuries of the spine, AO spin, 2008; Treatment of vertebral fractures by minimally invasive techniques EASSME, London 2011; Cranial Base Microsurgery, 2015, Copenhagen Medical University, Denmark/. He has conducted and conducts neurosurgical training for specialists, interns, doctoral students and young specialists in neurosurgery outside Acibadem City Clinic, UMBAL "Tokuda" EAD in UMBAL "St. Georgi" EAD, Plovdiv and in UMBAL Burgas, EAD. He was repeatedly selected as a reviewer for habilitations in various universities of the country, as well as participating in state commissions for taking board exams for neurosurgical specialists. During the period 2010-2015, he gave lectures, conducted exercises and seminars, participated in scientific councils and in the research activities of the Military Medical Academy, conducted courses on surgery of the skull base and operative treatment of brain aneurysms, both at the Military Medical Academy and at Acibadem City Clinic UMBAL

Tokuda EAD. In confirmation for these courses he submitted the necessary certificates and certificates. He conducted the first "live surgery" course in Bulgaria with a theoretical and subsequent attractive part with the participation of the trainees in a real operative intervention /2015, Military Medical Academy/. He developed films with an educational purpose of basic operative techniques applied by the author during operative interventions performed by himself. He is co-author of the three-volume textbook on neurosurgery, edited by Prof. N. Gabrovski. He is the supervisor of the doctoral studies of two successful doctoral students. He is a co-author in the creation of the site www.3Datlasofneurologicalsurgery.org, which is an online platform containing three-dimensional photorealistic anatomical dissection models and three-dimensional models of brain lesions and operative approaches.

He is a member of the Bulgarian Society of Neurosurgery, BLS, associate member of EANS. For participation in the competition, apart from the competition for docent held in 2017, he has presented one collective monograph, 39 submitted publications, with him being the first author in 3 of them, and being the second author in 36. 37 summaries of participation in scientific forums, that were also presented in the country /23/, in English /6/ and abroad/8/. After the review of his dissertation in 2015, there were 9 real publications, / of which 4 in English in journals outside the country/, as well as 7 abstracts from scientific forums /4 in Bulgaria and 3 abroad/. He has been cited 50 times in a number of reputable English-language publications, with an impact factor of 1.331.

The scientific and practical contributions of Dr. V. Nakov are in several main directions:

Cerebrovascular disease

The operative treatment of cerebrovascular disease is the main direction in the scientific and practical activity of Dr. V. Nakov. He is currently one of the leading neurosurgeons in the field. The main scientific work in this field is the monograph "Intracranial aneurysms" - 2014, which filled a big gap in the Bulgarian literature - the second monograph by a Bulgarian author after the one published more than 30 years ago by Prof. L. Karagyozov "Surgical treatment of vascular diseases of the brain". In it, he analyzes the modern surgical treatment of brain aneurysms, compares the timing of the operation and the results of the surgical treatment, develops prognostic factors, applicable to the surgical treatment, compares the indications, the treatment periods and the results of the different methods of treatment / endovascular, transcranial and hybrid/ applied in the acute period of rupture in aneurysms, an actual and currently solving problem. Regarding the medical behavior in the first hours after aneurysm rupture is the dissertation work and the publications presented with it - a study on 92 patients operated by the author himself in the first 72 hours after the aneurysm rupture, with confirmation of the need for early surgical treatment, in which he come into consideration endovascular techniques as well as classic methods of excluding the aneurysm from the cerebral circulation. He develops an algorithm of behavior depending on the severity of the hemorrhage, localization, and morphological characteristics of the aneurysmal sac. He discusses the intraoperative application of a puncture /according to Payne/ of the lateral ventricle to control cerebral edema and protect the brain from further damage. He makes a number of theoretical developments regarding the pathogenesis and pathomorphology of brain aneurysms and shares his experience of their surgical treatment. He applied for the first time in Bulgaria and perfected an applied technique for the removal of a migrated coil after failures in coiling the aneurysmal sac. He performs clipping of residual aneurysmal sac after coiling, describes clipping technique and behavior of ruptured aneurysmal sac during coiling.

All these are parts of the modern hybrid surgery of vascular diseases of the brain, which is the dream of all modern neurosurgical facilities in the world. He developed a classification of vascular complications after aneurysm clipping, analyzed their frequency, pathogenesis, techniques for prevention, as well as techniques for their control. His collaboration with Dr. M. Lilov in the field of endovascular surgery and in particular the treatment of complex aneurysms was extremely productive, as two new techniques were described to overcome the difficulties associated with an unfavorable ratio between the sizes of the aneurysmal neck and that of the sac. He describes for the first time in Bulgarian literature a case of intramural hematoma in the basilar artery as a cause of subarachnoid hemorrhage. In cooperation and co-authorship with Dr. M. Lilov he published a paper regarding the so-called "jail" technique, characterized by the simultaneous use of microcatheters and a stand for coiling aneurysms. Dr. Nakov has considerable experience in the surgical treatment of aneurysms in the area of the basilar artery, a pathology that causes technical difficulties, regardless of the experience of the neurosurgeon. The results are compared in terms of resources, technical problems and the final results of the application of open and endovascular neurosurgery, emphasizing the advantages of the latter. Of interest is the improvement of the operative technique in aneurysms of the bifurcation of the basilar aneurysm and the application of subtemporal access. It is characteristic for Dr. Nakov that sharing and discussing assumed and presumed technical errors during one or another operative intervention, he immediately develops a system of measures to prevent or control them. The first describes transcranial interventions in our country, subsequent failures in endovascular procedures, actions emphasizing good organization of surgical treatment, synchronicity in the work of operating rooms - something that has been introduced and functions adequately in Acibadem City Clinic UMBAL Tokuda EAD.

He is one of the few neurosurgeons -that restorers of the technique for creating additional blood flow to the brain blood supply, the so-called extra - intracranial bypass. This technique is recommended when medical and intravascular treatment options have not been effective in the case of compromised blood flow through the main brain arterial supply. The author's contribution here is in the formulation and introduction into practice of a safe, reliable and proven practice of Color coded Duplex Sonography for selecting the suitable candidates for cerebrovascular bypass in patients with chronic insufficiency of the cerebral blood supply / in Moya Moya disease , thrombosis of carotid, basilar and vertebral arteries, during surgery of richly blood-supplied tumors, etc./. Introduces an innovative technique with the use of a vein graft

Skull base surgery

Skull base surgery is primarily based on the surgical treatment of extraaxial tumors and is characterized by highly limited spatial operating corridors, complex anatomy of the skull base, the intersection of vital vessels and cranial-cerebral nerves, close proximity to brain stem structures that are vulnerable as from direct trauma, as well as indirectly from disruption of cerebral blood flow. The requirements for the surgeon are extremely high - physical and mental endurance, excellent orientation in the structures of the cranial base, technical equipment with micro-instruments, CUZA, neuronavigation, mastery of complex operative techniques. He developed and put into practice the extradural transpetrosal access according to Kawase for tumors of the skull base and especially when applied to petroclival meningiomas, a pathology that represents a challenge even for the most experienced neurosurgeons. Applies an extended transfacial approach to the clivus with radical extirpation of advanced chordoma. He makes a good anatomical description, points out possible sources of error, shares his difficulties with this type of surgery. He studied a practical aspect the

supraorbital approach. He contributes with his personal experience to the improvement of the operative tactics for the transformation of the craniobasal pathology into a convexity one.

Neurooncology

The main pathology in neurosurgical oncology is mesenchymal tumors - a heterogeneous group, with each representative in the group having its own peculiarities of biology, blood supply, sensitivity to one or another method of treatment. Emphasising the affinity of tumors involving the cranial base, which are a major and constant challenge to the neurosurgeon over the years and are widely represented in the scientific developments of Associate Professor Nakov. In their majority, these tumors are benign, but with an extremely unfavorable location and in which surgical treatment is the main method of treatment. In his publications, Associate Professor Nakov presents 14 cases of basal chordomas and meningiomas, treated with very good effect with different approaches: craniofacial, subfrontal, subtemporal - extra and subdural, retrosigmoidal, which is an exceptional experience not only for Bulgarian neurosurgery. Moreover, Associate Professor Nakov makes a detailed analysis of each access, according to the anatomical features and points out the advantages and disadvantages of each of them. He also analyzes the opportunities and the possible errors and complications in this type of surgery, indicates technical solutions for their prevention. He develops the technique of transcondylar access and the possibilities of preserving the stability of the craniospinal segment, a serious problem for modern neurosurgery. For the first time in our country, the transpetrosal access by Kavaze was introduced in patients with petroclival meningiomas and meningiomas involving Meckel's cavum. He performed an extended access to the area around the clivus applying a medial maxillotomy and a partial rhinotomy successfully removing an advanced chordoma of the clivus. The implementation of the idea of transforming basal tumors into convex tumors by means of removing of a part of the skull base is particularly effective. He achieves radical extirpation of two schwannomas of the vagus nerve with a good clinical effect, which is an extreme rarity - a total of 95 similar cases are described in the literature. He emphasizes the efficacy of one-stage tumor extirpation, without prior biopsy and without adjuvant therapy.

Functional neurophysiological control

Since 2017, all operations in the Neurosurgery Clinic, related to functionally significant areas, are, as a rule, carried out under neurophysiological control, and Associate Professor Nakov actively participates in this process, as he has also successfully has a PhD student, that defended his dissertation in this area. It is particularly valuable to analyze the possibilities for eliminating the causes of suboptimal performance of neuromonitoring. He also analyzes in two publications the results of surgical treatment before and after the introduction of neuromonitoring including with direct stimulation, and the conclusion is the undeniable benefit of neuromonitoring, especially in the reduction of postoperative morbidity.

Three-dimensional visualization of normal anatomical structures and pathological processes in neurosurgical practice

In the recent years, the three-dimensional visualization of anatomical objects in neurosurgery has become an extremely useful method in planning and conducting operative interventions. This includes both standard screen rendering and 3D mockup modeling. This technique is extremely useful in teaching students and interns.

Spinal neurosurgery

Associate Professor Nakov conducted a major study in this field on spontaneous spinal pyogenic infections requiring neurosurgical treatment/16/. This is a rare pathology / the frequency of which has been progressively increasing in recent years/, with a high rate (up to 30-40%) and disability. He introduces principles of behavior related to antibiotic treatment in the pre- and post-operative period, the removal of external drainage, the implementation of stabilization. He attempts to improve the behavioral algorithm for malignant spinal cord tumors.

Traumatology

He contributes to the development of the problem of early decompressive trepanation in acute trauma with volume-occupying lesions in the intracranial space.

Operative technique and accesses

He applies ultrasound-based neuronavigation to more than 250 patients, and Associate Professor Nakov is part of the team that implemented its introduction into practice. Based on rich clinical material, it confirms the effectiveness of intraoperative ultrasound diagnostics in providingng and preventing the risks of the so-called brain shift in axial tumors. As an experienced neurosurgeon, Associate Professor Nakov masters all operative accesses to the intracranial space, modifies some of them, introduces others for the first time in our country - petroclival access according to Kawase, the transformation of difficult-to-access basal meningiomas into convex ones, introduces a behavior algorithm with a view to prevention of complications in craniobasal accesses, introduces the principles of hybrid neurosurgery, removing intraoperatively occurring complications in endovasal cerebrovascular surgery with classic accesses and operative techniques. He is a co-author in the development of a computed tomography-based simulation of craniotomy and planning of operative accesses with Osirix software.

I can also share my personal impressions of Associate Professor VI. Nakov, whom I have known for many years. He has extremely active operative activity, performing operative interventions with a very high technical and technological level and has the reputation and authority of a leading neurosurgeon in some areas. He has exceptional work ability and dedication to the cause of Neurosurgery. He has a strong interest in: vascular neurosurgery, skull base surgery, neuro-oncology, pain surgery and degenerative diseases. He has mphasized interest in scientific and teaching activities.

In conclusion: Associate Professor Nakov has proven qualities as a diagnostician-clinician, surgeon-operator, scientist and a teacher. With these qualities, Dr. Nakov fully meets the requirements set by the Regulations for the Development of the Academic Staff and the Regulations for the Terms and Conditions for Acquiring Scientific Degrees and Holding Academic Positions in Achibadem City Clinic UMBAL "Tokuda" EAD, for occupying the the academic position "Professor ". I vote with a definite "Yes" for his election as a "Professor" at the Neurosurgery Clinic at Achibadem City Clinic UMBAL "Tokuda" EAD.

03/05/2024
Sofia

Reviewer:
