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Commentary

Alexander Alexandrovich Potapov, MD, PhD, 1948–2021

We are deeply saddened by the passing of Professor Alexander Potapov, one of the most outstanding Soviet and Russian Neurosurgeon, a major world specialist in brain trauma and neuro-oncology, Academician of the Russian Academy of Sciences and leading neurosurgeons in the world. After a courageous hard-fought battle with illness for the past year, Professor Alexander Potapov, MD, PhD, died peacefully on 15th May 2021, at the age of 73. Russian Neurosurgical Society has suffered an irreparable loss.

A visionary leader and loyal friend, Professor Alexander Potapov, left an indelible impression on our specialty. He was a contributing member of many esteemed academic societies. The impact that he made, both through the lives he touched, as well as his commitment to the development of the pioneer and state of the art neurosurgical facilities in Russia, will have an impact for decades to come. There are so many within our society, and beyond, who will consider themselves privileged to be counted among his friends and colleagues. He will always be in our hearts. Our sympathy and prayers go out to his family members, and all those who were close to him [Figure 1].

Biographic Information

Early years

Professor Alexander Alexandrovich Potapov was born on July 5, 1948, in the city of Altyaryk, which is located in the Ferghana region, former Uzbek Soviet Socialist Republic (now Uzbekistan).[1,2]

His father worked as a builder, laying irrigation canals while his mother was a medical doctor by profession, treating patients in the village clinic.[2]

Alexander Potapov grew up from a modest family, but excelled in his academic performance. After his high school (tenth grade) in 1967, he further his study at the prestigious 2nd Moscow State Medical Institute, which was renamed as the Pirogov Russian National Research Medical University in 1956.[2,3] The university is also one of the largest medical institutes in Europe.[3]

His exposure in the retrieval works of traffic accident victims when he was a medical student. He worked part-time as medical personnel with the ambulance service. Since the time he was a medical student he has observed and helped head injured patients. He graduated from the Pirogov Russian National Research Medical University in 1973 with a diploma with honors in general medicine.[4]

Residency Training

When he graduated as a medical doctor in 1973 at the age of 25 years old, he started his medical profession at the famous Burdenko Institute of Neurosurgery [Figure 2]. The National Medical Research Center for Neurosurgery named after Academician N. N. Burdenko is a research institute established on the initiative of N. N. Burdenko and V. V. Kramer in 1932.[5]

He started his research doctorate in 1975 and completed it within 3 years in 1978. Following that, he worked as a researcher at the same institute for 10 years. During that period of time, he enrolled as a candidate of medical sciences and became an intern at the Karolinska University Clinic in Stockholm, Sweden.

Professional Career

He returned to the Burdenko Institute of Neurosurgery as the head and scientific consultant of 33 candidates and doctors of medical sciences in 1987.[4] With much enthusiasm and hard-work, he has gained trust from his superiors within a short period. He was assigned to perform surgeries independently.[2]

Figure 1: Professor Alexander Alexandrovich Potapov, MD, PhD

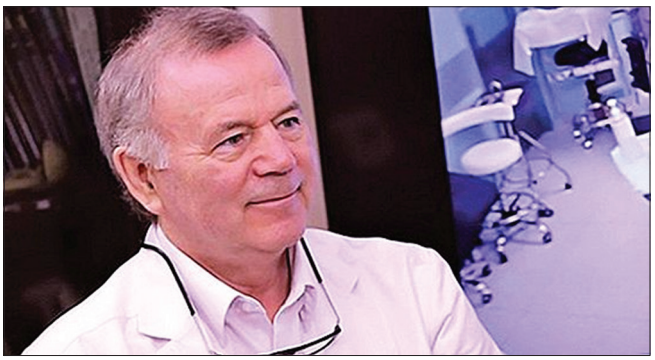

Figure 2: Professor Alexander Alexandrovich Potapov in the operative theatre at the Burdenko Institute of Neurosurgery[2]

He was appointed as the Head of the Department of Neurotraumatology, Research Institute of Neurosurgery. N. N. Burdenko in 1988. One year later, in 1989, He was appointed as the Deputy Director of the Research Institute of Neurosurgery. N. N. Burdenko. He built his career as an exemplary neurosurgeon and also a great administrator. At the distinguished Burdenko Institute of Neurological Surgery in Moscow, Russia, Professor Alexander Potapov was Professor Alexander Konovalov's right hand man. Professor Alexander Konovalov is the Father of Russian Neurosurgery. He carried out more complex neurosurgical procedures with the trust he gained, Professor Alexander Potapov has developed many new surgical techniques in cranial surgeries and new treatment algorithms during his early years as a neurosurgeon.[2] He attained his full Professorship in 1991, at the age of 43 years old.[4] He held both positions till 2014 when he was appointed as the Director of the National Medical Research Center for Neurosurgery, replacing his mentor, Professor Alexander Konovalov.

During his tenure as the director, the center has been developed with 10 clinical departments, 22 professors, 97 researchers, and 166 doctors of various specialties with 300 hospital beds, with 40 beds of neuro-intensive care units. The center has been running 15 neurosurgical surgeries in 20 operative rooms on a daily basis since 2018, with approximately 9000 brain, spine and peripheral nerves surgeries. The center headed by Professor Alexander Potapov also catered for more than 2400 radiotherapy and radiosurgery procedures that were done in that year.[6] He retired from that position in 2019.

During his esteemed career, Professor Alexander Potapov held many prominent positions within the primary professional academic societies in neurosurgery. He was the former President of the Association of Neurosurgeons of Russia, second Vice-President of the World Federation of Neurosurgical Societies (WFNS)(2009-2013), member of the Russian Academy of Medical Sciences (since 2002), International Advisory board member of the Asian Congress of Neurological Surgeons (ACNS), Member of the WFNS, Head of the Committee on Neurotrauma of the WFNS (2006-2009), Committee members on Neurotrauma of the WFNS,[7] Chairman of Publication & Web Committee of WFNS, member of the Liaison Committee WFNS/World Health Organization (WHO),[7] Education and Training Committee member of WFNS,[8] trauma section of the European Association of Neurosurgical societies (EANS) and the executive board members of the International Society on Minimally Invasive Techniques in Neurosurgery (ISMINS).[4] He was appointed as Professor of the Department of Neurosurgery of the Russian Medical Academy of Postgraduate Education since 2000. Other positions include visiting lecturer of the Education Committee of the WFNS (since 1999), Honorary Member of the Austrian Society of Neurosurgeons (since 2009), Corresponding Member of the German Academy of Neurosurgery (since 2010), Member of the Presidium of the Russian Academy of Medical Sciences (since 2010), Member of the Council for Science and Education under the President of the Russian Federation (since 2012), Member of the Bureau of the Russian Foundation for Basic Research (RFBR) Council (since 2012), Member of the Royal Academy of Medicine of Belgium (since 2012) and Honorary Professor of the National Center for Neurosurgery, Astana, Kazakhstan (since 2014).[4]

Neurosurgical Contributions

Research and publications

Professor Alexander Potapov is a neurosurgeon with specialist in the field of neurotraumatology. He was the first person in the world to develop the concept and methodology for plastic and reconstructive neurosurgery involving the restoration of the entirety of the skull and the configuration of hard and soft head tissue with the use of modern laser information technology. He has the world's largest volume of clinical data in this area and established the use of laser information technology in neurosurgical departments nationwide. The main results of his studies can be found in 250 articles, monographs, manuals, and textbooks.[1]

Professor Alexander Potapov has contributed immensely in the neurosurgical academic fields with over 318 journal publications, book chapters and beyond 3,000 citations under his name.[4,9] of most cited manuscripts include "Comprehensive, Integrative Genomic Analysis of Diffuse Lower-Grade Gliomas" with (933 citations),[10] "EFNS guideline on mild traumatic brain injury: report of an EFNS task force" (64 citations),[11] and "Endonasal endoscopic repair of spontaneous cerebrospinal fluid leaks" (33 citations).[12]

Since 1989, he was the member of the editorial boards of a number of scientific journals, namely "Questions of Neurosurgery", "World Neurosurgery", "Acta Neurochirurgica", "International neuroscience journal" , "Clinical and Experimental Surgery", "Neurosurgery and neurology of Kazakhstan" and "Neurosurgery".[4] Professor Alexander Potapov was also the editorial board member of the Chinese Neurosurgical Journal.[13]

International contributions

Professor Alexander Potapov has also participated in countless number of international conferences as the international advisory member and plenary speaker especially in the past International conferences of the ACNS, WFNS and EANS, such as "WFNS International Symposium, 29 Sept-2 Oct, 2010",[14] "2nd Annual Meeting of Serbian Neurosurgical Society SNSS Annual meeting 2016",[15] "The 3rd Congress of Southeast Europe Neurosurgical Society (SEENS) Congress & The 43rd

Romanian Society of Neurosurgery Congress, September 14 - 16, 2017",[16] "The 12th International Conference of the Asian Congress of Neurological Surgeons and 2nd Interim Meeting of World Federation of Skull Base Society (WFSBS), 14-18 March 2018, Dubai, United Arab Emirates",[17] "96th Anniversary of neurosurgery in Serbia and 81st Anniversary of Clinic for Neurosurgery, Belgrade, Serbia, March 21st-24th 2019"[18] and "2019 Annual Meeting of the Congress of Neurological Surgeons: The Age of Reason for Neurosurgery, San Francisco, California, October 19-23, 2019".[19] Professor Alexander Potapov was also one of the invited faculty members of the prestigious Madjid Samii Society of International Neurosurgeons (MASSIN) during its 6th Congress on October 26th-29th 2017, Becici, Budva, Montenegro. He spoke on "Neuroimaging of Traumatic Brain Injury: MRI versus CT" during the neurotrauma plenary session.[20]

He has contributed to the development of many international guidelines and recommendations such as "Report to the Congress of the United States of America (USA)" (1996), "Report on the vegetative state. International working party" (1996), "Guidelines for the management of penetrating brain injury, Journal of Trauma" (2001), "European Federation of Neurological Societies (EFNS) guideline on mild traumatic brain injury: report of an EFNS task force" (2002), "Guidelines for the management of mild head injury, Journal of European Neurology" (2002, 2007, 2012), "Guidelines for the management of Apallic / vegetative state syndrome" (2002) and "Guidelines for the management of penetrating and blast brain injury" (2014-2015).[4]

Professor Alexander Potapov and Igor Yakovenko organized a wonderful congress in Saint Petersburg in 1993, the 18th Euroacademia Multidisciplinaria Neurotraumatologica (EMN). Professor Alexander Potapov, the congress president was introduced by Professor David Mendelow during the prestigious event having held the Klaus-von-wild lecture: "modern concepts and trends in the management in TBI in Russia". Professor Alexander Potapov was also elected the Honorary Member of EMN.[21] Professor Alexander Potapov organised the "International Neurosurgery Forum: WFNS Education Course. Conference "Sport & Neurotrauma" in Sochi, Russia on 26-27 February 2016. He was the chairman of the international programme committee[22] [Figure 3].

When he was the Director of N.N. Burdenko National Scientific and Practical Center for Neurosurgery (NSPCN), with his former boss, Professor Alexander Konovalov who was the Honorary Director of N.N. Burdenko NSPCN, they organised the International Neurosurgical Forum and the WFNS Course on 18-20 May 2017. It was a special event devoted to the opening of a new complex and new Congress Centre of N.N. Burdenko NCPCN.[23]

He was the chairman of the Scientific & Organizing Committee. Many distinguished faculty members attended

Figure 3: International Neurosurgery Forum: WFNS Education Course. Conference "Sport and Neurotrauma" in Sochi, Russia on 26–27 February 2016

the event, namely Prof. Helmut Bertalanffy (Germany), Prof. Concezio Di Rocco (Italy), Prof. Alexander Konovalov (Russia), Prof. Basant Misra (India), Prof. Madjid Samii (Germany), Prof. Yoko Kato (Japan), Prof. Amir Samii (Germany), Prof. Franco Servadei (Italy), Prof. Yong-Kwang TU (Taiwan), and many more [Figure 4]. He also organised the "Joint Meeting of The Association of Neurosurgeons of Russia, Russian Association of Spinal Surgeons and Serbian Neurosurgical Society in conjunction with Croatian Society For Spine Surgery in XXI Century, October 4-7, 2018, Niš, Serbia".[24]

He subsequently organised the WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19-21 April 2018[25] [Figures 5-15]. Professor Alexander Potapov has also contributed to the development of neurosurgery in Kazakhstan with endless support for the Kazakh Association of Neurosurgeons, together with Professor Yoko Kato and Emeritus Professor Tetsuo Kanno, representing the Asian Congress of Neurological Surgeons.[26]

Awards

Professor Alexander Potapov was the recipient of the Laureate of State Prizes of the Russian Federation in 1995 and 2009.[4] The State Prize of the Russian Federation is a prize awarded since 1992 by the President of the Russian Federation for his contribution to the development of science and technology, literature and art, for outstanding production results. He was awarded the 2009 Russian Federation National Award in Science and Technology, together with two other recipients, is conferred to Professor Vladislav Panchenko and Professor Valery Chissov for their studies in developing laser information technology for use in medicine.[1]

He attained the position as academician (full members) of the Russian Academy of Sciences in 2011. It was the highest level of the Russian Academy of Sciences , conferred to the Russian scientists who have contributed in scientific works of paramount importance in various fields of knowledge.

Figure 4: International Neurosurgical Forum and the WFNS Course, Moscow, Russia, on 18–20 May 2017

Figure 5: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

Figure 6: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

Figure 7: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

Figure 8: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

Figure 9: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

According to the charter of the Academy, his role as academician is to enrich science with new achievements.[4]

Professor Alexander Potapov's accomplishments, legacy, and perseverance in the field of neurosurgery inspired many of us. While the field of neurological surgery has lost a giant, Professor Alexander Potapov's life and career have left an indelible mark on the specialty and the broader medical profession. There are so many within our society, and beyond, who will consider themselves privileged to be counted among his friends and colleagues. He will always be in our hearts. Our sympathy and prayers go out to his family members, and all those who were close to him.

Figure 10: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

Figure 11: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

Figure 12: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

Figure 13: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

Figure 14: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018

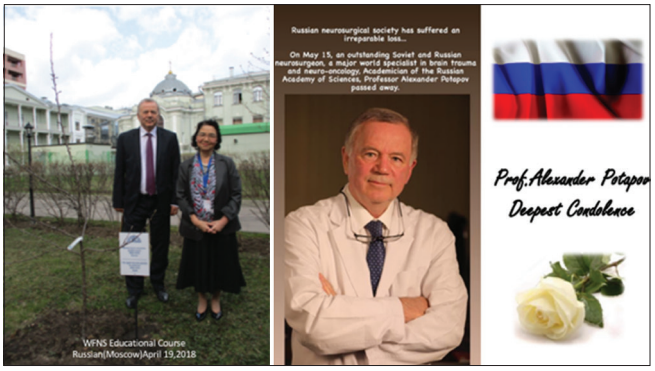

Figure 15: WFNS Educational course in conjunction with the 4th ISMINS Congress in Moscow on 19–21 April 2018 (Left) and obituary message adopted from the https://www.wfns.org/news/230/obituary-professor-alexander-potapov (Right) [27]

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