

Nadezhda A. Puchkovskaia (110th Birth Anniversary)

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Nadezhda A. Puchkovskaia, an academician of the National Academy of Science and National Academy of Medical Science of Ukraine, Academy of Medical Science of RF, International Academy of Ophthalmology, Honorable member of Ophthalmology Societies and National Medical Academies of many countries, Honored Master of Sciences and Engineering, Professor, Doctor of Medical Science, a prominent scientist, ophthalmologist, and health care organizer, a disciple of V.P. Filatov and Director of the Filatov Institute for many years, was born on the 25th of May, 1908.

We recommend to everyone who wants to find out more about the life of Nadezhda Puchkovskaia to address to her very interesting biographical book called "An epoch and My Life". The book, unfortunately, was published with a limited circulation and became a bibliographic rarity once it was released. I will quote only the first sentence of the book's foreword, 'I am destined to live a long life. I lived in different periods of our era: in monarchical Russia, during the years of war and revolutions, at the time of Soviet power, the Second World War, and in independent Ukraine'.

Ophthalmologic biography of Nadezhda Puchkovskaia began in 1939 when she graduated from Odessa Medical Institute Post-Graduate School. Her dissertation was devoted to the study of the histology of the cornea, and the theme of the dissertation was proposed by Volodymyr Filatov. Since then, her life was connected with Volodymyr P. Filatov.

Having been demobilized from the front, N.A. Puchkovskaia came to Odessa to the institute, to Volodymyr Filatov, and he invited her to head a new department of regenerative ophthalmology, which he organized for the treatment of former war veterans who had lost their sight during the war, when burning in tanks or in a result of explosive or bullet wounds. In those first years after the war, they massively began to apply for help to the Institute, "to Filatov." Who, besides his student, a front-man, Captain of the medical service, Head of the emergency department of the military-field hospital, could have charged Volodymyr Filatov with such a case!

In the first post-war decades, a major direction of work of Nadezhda Puchkovskaia and the department headed by her



was the development and practical application of surgical treatment methods for patients with severe consequences of burns and eye injuries. And those, as a rule, were severe total acute corneal leukoma and cicatricial changes in the anterior eye. At that time, corneal transplantation in the presence of such leukoma were almost undeveloped and were not used; therefore, Nadezhda A. Puchkovskaia had a broad path opened before her, on which she was able to realize herself as a talented scientist and surgeon.

In the 40-50s, N.A. Puchkovskaia developed such methods of keratoplasty as subtotal and total penetrating keratoplasty, total penetrating and lamellar keratoplasty with scleral cross-section for complicated corneal staphyloma, subtotal and total lamellar keratoplasty for post-burn leukoma, peripheral keratoplasty (1951-1960). Nadezhda A. Puchkovskaia and her students (Petrunia M.S., Kuksa V.D., Titarenko Z.D. and others, 1966-1971) studied the effectiveness of keratoplasty methods on huge clinical material since there were hundreds and thousands of patients. And such an operation as peripheral keratoplasty was ahead of time for many years, and it was only in the late twentieth century when it was found to be essentially a surgery for limb stem cell transplantation, and it acquired a new filling and wide application.

In those years, N.A. Puchkovskaia also developed new effective methods for operative treatment of symblepharon as a result of severe eye burns (1951, 1955, 1960). Her disciple Grigori V. Legeza, who replaced her on a position of Department Head in 1956, studied the effectiveness of the methods developed by her. As Grigori Legeza joked later, only he personally "transplanted more than 100 square meters of oral mucus membrane" which was used when removing the symblepharon. These developments were outlined by Nadezhda Puchkovskaia in her monograph "Transplantation of the cornea in complicated cases" (Kiev, 1960). It was the result of huge and hard work made both by her and by the whole staff of the Department. Professor G.V. Legeza said that, in those years, they went to the surgery theater at 9 a.m. and ended up operating at 6-7 p.m. Nadezhda Puchkovskaia was awarded the Order of the Hero of Socialist Labor for her achievements; and the Department became, in fact, the All-Union Center for Surgical Treatment of Patients with Severe Consequences of Eye Burns and Injuries, the place where patients from all Soviet Union Republics came with their hope to Nadezhda Puchkovskaia and a queue for the operation in the Department could reach two or more years. Over time, the Institute began to receive more and more patients with fresh eye burns which they received "on the sites of building communism." This is when the Department got its new title, Department of Eye Burns and Reconstructive Ophthalmology and the direction of scientific research was forwarded to studying the pathogenesis of eye burns and developing more effective treatments. Although Nadezhda Puchkovskaia headed the Institute after the death of her teacher, Volodimir Filatov, he remained an advisor in the Department and went on studying eye burns. In collaboration with professor S.R. Muchnik she developed urgent lamellar keratoplasty for fresh eye burns as well as tectonic and therapeutic keratoplasty, tectonic keratoplasty using two corneal transplants (1967, 1968, 1971). All this made it possible to significantly increase the treatment efficacy for severe eye burns and to prevent their severe complications. Guided by N.A. Puchkovskaia (1959-1968), Professor Nina S. Shulgina performed fundamental study on determining the role of immune

status of a patient with eye burn and revealed that, in eye burns, auto-intoxication and auto-sensibilization of the body by necrotic products of eye tissue necrosis and allergy of the whole organism resulted in 'a burn disease'; so, eye burn treatment requires drugs of not only local but general action, aimed at desensitization and de-allergy of the whole organism. Thus, burn convalescent serum was suggested to use. Its efficacy in patients was studied by V.M. Nepomiashchaia, Candidate of Medical Science, (1964-1970).

N.A. Puchkovskaia and colleagues (Prof. N.S. Shulgina, Prof. G.V. Legeza, and Cand. Med. Sc. V.M. Nepomiashchaia) were awarded the State Prize of Ukraine in 1978 for studying pathogenesis and developing new treatments for eye burns and their consequences.

In the years that followed, studying pathogenesis of eye burns and developing new treatments became one of the main directions for work of Prof. S.A. Iakimenko, N.A. Puchkovskaia's disciple who has headed the Department since 1988.

N.A. Puchkovskaia was one of the first worldwide who started the development of keratoprosthesis which was a logical extension of her keratoplasty studies since keratoplasty was found to be not always effective for the most severe leucomas, among which post-burn leucoma was on the first place. First results already showed that keratoprosthesis could recover the sight in so-called 'hopeless leucoma' as they were called by Filatov. However, a great number of severe complications, which occurred in those first years of keratoprosthesis and which led again to vision loss, indicated that a lot of work had to be done to make keratoprosthesis an effective treatment for such patients. When I started working, after the postgraduate school, at the Eye Burn Department, Nadezhda Puchkovskaia asked me which scientific problem I would like to study I named keratoprosthesis. It was the closest problem to me since my dissertation for a Cand. Med. Sc. degree was on diagnostics in eyes with leucoma in patients to be performed keratoprosthesis. In addition, I assisted Nadezhda Puchkovskaia in most surgeries. She agreed but warned that it could take many years and even the whole life to solve such a difficult problem. So it happened. But now I could tell Nadezhda Puchkovskaia that I met her expectations. I gave fifty years of my ophthalmic life to the development and application of keratoprosthesis.

Apart from keratoplasty, like all ophthalmic surgeons, Nadezhda Puchkovskaia was keen on operating cataract but she always kept up with the times. When Prof. Krvavich from Poland suggested doing cataract cryoextraction, she went on this method; when cataract facemulsification started to be used, she made everything so that the Institute adopted this technique.

Also I want to touch the work of N.A. Puchkovskaia as Director of the Institute which she headed for 29 years until her retirement. Having headed the Institute after V.P. Filatov's death, she rallied the collective of the Institute, and this was mostly V.P. Filatov's pupils,

and carried her torch with dignity, raised her disciples, who became Heads of the Institute Department and continue to work until now. The authority of the institute continued to be on to the same height as it had reached by V.P. Filatov. Moreover, new laboratories were created in the Institute including Laboratory of Laser and Ultrasound Application in Ophthalmology, Laboratory of Glaucoma and Ophthalmic Endocrinology, Immunology and Electron Microscopy Laboratories, Laboratory for Electrophysiology Diagnostics and Treatment Methods, Physiotherapy Department, and Laboratory for Contact Correction of Vision and Prosthetics. New scientific and clinical research areas were launched: implantation of artificial lens, treatment of dystrophic and viral diseases of the cornea, keratoconus surgery, vitrectomy, treatment of congenital pathology and oncology in children, and others. Due to this, the institute became a leader in almost all areas of ophthalmology science and practice not only in Ukraine, but throughout the Soviet Union and in the world.

Incidentally, the use of artificial lenses at the Institute began with my apparently easy hand because I was the first doctor of the institute who performed this surgery. In 1974 Nadezhda Puchkovskaia sent me to S.M. Fedorov to Moscow to master the method of implantation of his lens "Sputnik", which he developed, actively used and promoted. During the month, I had the opportunity to assist his leading surgeons in such operations and independently performed several cataract extractions with the implantation of this lens. Before I left, Svyatoslav Fedorov gave me 5 lenses and a special toolkit, and I gave them to Nadezhda Puchkovskaia. She said, though, that the Burn Department was inappropriate for performing such surgeries and it was better to me to continue my work on keratoprosthesis.

N.A. Puchkovskaia initiated and organized the trauma caresystem in Ukraine, working up to-date, and interregional scientific and practical ophthalmic conferences which she believed to be of a great importance. For many years, she was an Editor-in-Chief of *Oftalmologicheskii Zhurnal* (Ophthalmology Journal of Ukraine).

Nadezhda Puchkovskaia paid much attention to training researchers. Under her personal guidance, 26 Candidate and 27 Doctoral dissertations were performed. Specialized Scientific Council was created in 1976 and Nadezhda Puchkovskaia as Head and myself as Scientific Secretary worked together for 20 years. We accepted applications for Candidate and Application dissertations from all over the Soviet Union and most prominent professors came to

perform as official opponents. Nadezhda Puchkovskaia always got acquainted with candidates for a degree and dissertations and she reviewed all doctoral dissertations by herself.

It would also be interesting to tell how we worked on our monographs: 'Optical Keratoprosthesis', published in Kiev in 1986 and for which we were awarded the first prize of the Soviet Union Academy of Medical Science, and 'Eye Burns', published in Moscow in 2001. She looked forward to its being published. At that time, she was already retired and she often telephoned me for the publishing house not to delay the publication. Unfortunately, she died only one month before her monograph was released. It was the tenth monograph of hers.

I collaborated with Nadezhda Puchkovskaia for almost 40 years; she was my consultant when I was working on my doctoral dissertation in keratoprosthesis. I was her permanent assistant in not only keratoprosthesis surgeries but in most corneal transplantations and a supervisor of the patients operated on by her. It was easy-going and pleasant to talk and to work with. She was not a mentor, did not moralize, did not read lectures but her advice and appraisal were always wise and useful. It was a true sign of faith for us, young scientists, to be beside her. This was the value of our work with her, of her students, colleagues and followers, as well as for her, apparently. In general, believe that it is not clear yet who is more important to whom, a teacher to students or students to a teacher, in order to realize the ideas in life, which is of great importance for creating new scientific schools, their inheriting and preserving.

N.A. Puchkovskaia was a deputy and Assistant Head of the Supreme Council of Ukraine for 17 years, did social work in the city of Odessa and, thus, was elected Freeman of Odessa. She was awarded with orders and medals. She participated in many international forums of ophthalmologists. Nadezhda Puchkovskaia's many-sided scientific and practical work brought her a well-deserved glory and respect. And at the same time, she was an attentive doctor, always accessible and responsive to patients, and a simple and wonderful person. There were a lot of articles in the press and books about her published during her lifetime, but it seems to me that Nadezhda Puchkovskaia is not fully appreciated by her contemporaries, students and colleagues. Therefore, as her disciple, I want, even partially, to correct this shortcoming and to express our deep respect and love to Nadezhda Puchkovskaia in her 110th birthday.