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Academician Korzh O.O. is an outstanding scientist of the XX century, founder of a new stage of development of orthopedics and traumatology in Ukraine (to the 100th anniversary of his birth)

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*«Science is a mystery, an unknown field,
This is also the fate of talents, chosen ones»*

Academician O. O. Korzh

April 2024 marked the 100th anniversary of the birth of an outstanding scientist of the 20th century, orthopedic traumatologist academician Oleksii Oleksandrovych Korzh, one of the founders of the National Academy of Medical Sciences of Ukraine.

Academician O. O. Korzh is a follower of the older generation of outstanding scientists, the founders of the formation and development of domestic orthopedics-traumatology: K. V. Wegner, M. I. Sitenko, M. P. Novachenko, etc.

Oleksii Oleksandrovych Korzh was born on 23 April 1924 in the village of Obolon in Poltava region, in the family of a civil servant. Soon, the family moved to Kharkiv, where in 1941 Oleksii Oleksandrovich graduated with honors from secondary school No. 137 and entered Kharkiv Medical Institute, but he was not destined to study at that time. Korzh's youth fell on the stormy years of the Second World War. After the severe trials of wartime and the end of the war, Oleksii Oleksandrovych returned to Kharkiv and continued his studies at Kharkiv Medical Institute, which he graduated with honors in 1951. The head

of the state examination board at the medical institute, Professor M. P. Novachenko drew attention to the young capable doctor and offered him a job at Professor M. I. Sytenko Ukrainian Research Institute of Orthopedics and Traumatology (Institute).

Oleksii Oleksandrovych Korzh was an employee of the Institute since September 1951 (Fig. 1), he went through a long fruitful path from an orthopedic traumatologist to a director and an academician.

The direct scientific supervisor of Oleksii Oleksandrovych was a talented orthopedist-traumatologist, corresponding member of the AMS of the USSR, Professor Mykola Petrovych Novachenko, from whom the young scientist inherited all the best traits of a clinician, surgeon, scientist, and organizer. In 1956, the fruitful result of O. O. Korzh's first scientific research was his candidate's thesis on the topic: "Some morphological changes in chronic dislocations of the forearm in the experiment and in the clinical practice".

Since December 1956, Korzh successfully combined scientific work at the Institute with pedagogical work at the Department of Orthopedics and Traumatology of Kharkiv Institute for the Advanced Training of Doctors, where he worked first as an assistant, associate professor, and then as the head.

In 1962, the young scientist defended his doctoral thesis on the then innovative topic: "Heterotopic post-traumatic ossifications", in 1964 he was awarded the academic title of professor, and in 1967, at the age of 43, O. O. Korzh was elected Corresponding member of the Academy of Medical Sciences.

Since 1965, Oleksii Oleksandrovych was appointed director of the Institute (Fig. 2).

In 1991, he became an academician of the National Academy of Sciences of Ukraine. O. O. Korzh entered the history of national medicine as one of the founders of the Academy of Medical Sciences of Ukraine.

Main trends and achievements in scientific and clinical activity of O. O. Korzh

In our Institute, there is probably not a single department in which Oleksii Oleksandrovych did not work as a creative researcher, scientist, clinician, organizer, inventor, etc.

In the 50s and 60s of the post-war years of the 20th century the problem of treatment of patients with the consequences of combat trauma and limb amputations was urgent. For the first time in Ukraine, Korzh initiated and led important scientific research at the time on improving the organization of prosthetic and orthopedic care for the disabled.



Fig. 1. Start of work at Professor M. I. Sytenko Ukrainian Research Institute of Orthopedics and Traumatology (1951)



Fig. 2. Director of Professor M. I. Sytenko Ukrainian Research Institute of Orthopedics and Traumatology (1965)

By order of the Ministry of Health of Ukraine, the Institute becomes the main organization in the republic for this problem (Fig. 3).

Oleksii Oleksandrovych created a scientific and clinical department of prosthetic repair and prosthetic manufacturing at the Institute, which over the years has grown into Professor M. I. Sytenko Kharkiv Research Institute of Prosthetics, Orthopedics and Traumatology. In the same period, he developed and implemented unique methods of express prosthetic interventions on the operating table after amputation of limbs, they have remained relevant even now.

An important step in the development of orthopedics and traumatology was the creation of a laboratory of transplantology at the Institute in 1965 on the initiative of O. O. Korzh. During this period, the academician lead scientific research on the study of structural reconstruction of bone tissue under the conditions of bone graft implantation. Operations for the transplantation of large bone allografts in case of replacement of large bone and joint defects were developed and implemented. In 1965, a group of scientists who were actively engaged in this problem were awarded the State Prize for the effectiveness and widespread implementation of these methods.

In the same 1965, O. O. Korzh created Professor M. I. Sytenko Ukrainian Research Institute of Orthopedics and Traumatology, the first research laboratory of new materials for the development of orthopedic means for the treatment and rehabilitation of patients in Ukraine (Fig. 4). In the future, these scientific studies led to the creation of ceramic and sapphire implants for surgical treatment of patients with spine and joint disorders, various orthoses and methods of their use in the rehabilitation process.



Fig. 3. The academician consults a patient with amputation of the left upper limb

In the same period, on the initiative of Oleksii Oleksandrovykh, on the basis of the Institute and in 7 regions of Ukraine, traumatological medical labor expert commissions (MLEC) were created for the first time, which contributed to the development of state social programs.

Korzh was elected president of Kharkiv Society of Orthopedic Traumatologists, which he headed for many years, at the same time, during his tenure, the fruitful communication of Kharkiv specialists significantly expanded through close cooperation with doctors from other regions of Ukraine, as well as Georgia, Armenia, Uzbekistan, Kazakhstan, Poland, Bulgaria, the Czech Republic, Germany, etc.

In the 1960-1970s O. O. Korzh develops new directions in orthopedic surgery, in particular, of large joints, which significantly expanded knowledge about joint dysplasia. He proposed several original methods of operations for the reconstruction of the supraclavicular part of the joint in children and adults using both bone allografts and ceramic ones (Fig. 5).

Significant progress in the development of joint and pelvic surgery was achieved at the Institute thanks to the many years of fruitful cooperation between Korzh and his talented student, M. I. Kulish.

Oleksii Oleksandrovykh paid considerable attention to the study of the problem of spine disorders. Back in 1965, for the first time in the world, he performed an anterior cantilever, like a supporting structure, LV-SI spondylodesis with allografts in a patient with a severe form of spondylolisthesis.

At the initiative of Korzh, research was conducted on the development of surgical approaches to the vertebral bodies (O. O. Korzh, R. R. Talyshynskiy, M. I. Khvysyuk, V. M. Kazytskyi), which led

to the initiation of a new stage in the development of Kharkiv school of vertebratology. In 1976, the first department of vertebratology in Ukraine was organized at the Institute, which was the beginning of deep and thorough fundamental, theoretical and clinical research on the problems of diseases and injuries of the spine, including in children.

In the future, these developments were continued and developed by students-followers: M. I. Khvysyuk, S. D. Shevchenko, G. Kh. Gruntovsky and many others. Later, under the supervision of the Institute, centers for the surgical treatment of spine injuries and diseases were created in 10 regions of Ukraine. According to the decision of the Ministry of Health of Ukraine Professor M.I. Sytenko Research Institute of Orthopedics and Traumatology was granted the status of "Republican Center for Spinal Trauma".

In 1968, for the first time in Ukraine, at the Institute Oleksii Oleksandrovykh together with Professor K. M. Sivash and Professor M. I. Kulish and G. Kh. Gruntovsky performed an endoprosthetic operation of the hip joint with the original construction designed by Sivash.

Since then, the method of endoprosthesis of joints has gained further development and wide implementation in the clinical practice of Ukraine.

Korzh made great efforts to develop the Institute's international cooperation. On his initiative (1968), creative cooperation was established with scientific and medical institutions of European countries: Debrecen University (Hungary) (Fig. 6), Humboldt University of Berlin (Germany), Warsaw Traumatology Hospital (Poland). During this period, Oleksii Oleksandrovykh decently represented national science abroad while participating in international forums



Fig. 4. O. O. Korzh and employees of the laboratory of new materials. From left to right: H. Kh. Gruntovsky, E.M. Makovoz, I. B. Tymchenko, A. G.Golukhova, O.O. Korzh, Y.I. Boyko, S.D.Shevchenko

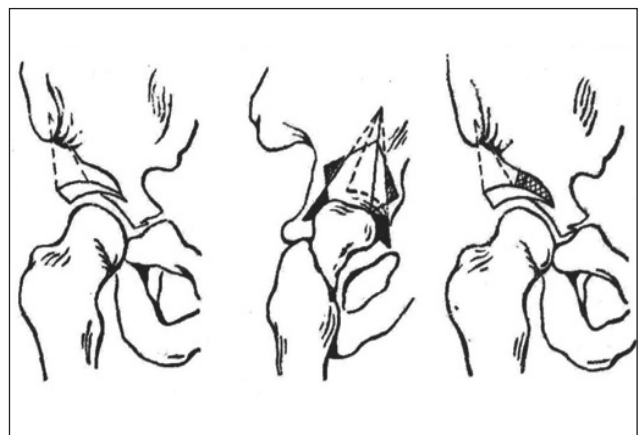


Fig. 5. Scheme of the supraacetabular reconstruction of the "roof" of the supratrochanteric part of the joint according to Korzh - Miteleva in the case of dysplastic coxarthrosis



Fig. 6. Professors O. O. Korzh and S. D. Shevchenko (in medical gowns) with professors of Debrecen University (Hungary)



Fig. 7. The editorial board of the journal “Orthopaedics, Traumatology and Prosthetics” in Kyiv in 1968. From left to right: famous orthopedist professors V. D. Chaklin, M. P. Novachenko, D. O. Novozhilov, F. R. Bogdanov, S. M. Shagaev, O. O. Korzh, I. L. Krupko, and A. G. Yeletsky

(Denmark, Hungary, Poland, Czechoslovakia, Yugoslavia, etc.).

He was elected an Honorary Member of the Serbian Medical Academy, an Honorary Member of the International Society of Orthopedic Surgery and Traumatology (SOTT), medical associations and societies of orthopedic traumatologists of Poland, Uzbekistan, Georgia, and Moldova.

In the period 1980–1996, O. O. Korzh founded and headed theoretical, fundamental and clinical research on the problems of bone tissue regeneration after traumatic injuries. The study of the influence of stress factors on the locomotor system as a cause of the development of structural and metabolic damage to bone and cartilage tissue (on the basis of biochemical and clinical and radiological studies) began. At the same time, he substantiated and introduced

into wide clinical practice the method of functional treatment of long bone fractures.

Starting from 1980 to 1985, on the initiative and under the chairmanship of O. O. Korzh, a state scientific program for combating traffic injuries was launched in Ukraine, the implementation of which made it possible to improve the system of providing medical assistance to victims, reduce mortality and disability.

In 1990, for the first time in Ukraine, scientific research of a new direction in orthopedics was started, namely the study of the problems of joint impairments caused by diseases with a hereditary predisposition, which was headed by O. O. Korzh. Leading scientists of the Institute, Professors B. I. Simenach, M. I. Kulish, S. D. Shevchenko, N. V. Dedukh and others took an active part in this fundamental work. Scientific developments were awarded the State Prize of Ukraine (1996).

During the years 1967–2004, Korzh held the position of editor-in-chief of the leading specialist magazine “Orthopaedics, Traumatology and Prosthetics”, which was founded in Kharkiv by M.I. Sytenko in 1927 (Fig. 7).

Academician O. O. Korzh was a devoted patriot of Ukraine, he met with great enthusiasm the news of its independence, worked on the translation of Ukrainian terms in orthopedics and traumatology, and published several dictionaries.

Academician Oleksii Oleksandrovykh Korzh's life ended on 1 November 2010. Employees of the Institute, his numerous students remember their mentor, teacher and continue his noble work.

Paying tribute to the great Teacher, an exposition about his life and creative path was organized in the Museum of the Institute, the monographs “Our hero” and “Heritage” were published, which emphasized his great contribution to our specialty, and a memorial plaque was installed on the facade of the institution.

The life and creative path of Oleksii Oleksandrovykh, will certainly be the heritage of the next generations of specialists and a worthy example, a reliable foundation and basis for the further development of orthopedics and traumatology.

The bright and kind memory of the outstanding scientist, surgeon, teacher and friend O. O. Korzh is carefully passed down from generation to generation.

Conflict of interest. The authors declare no conflict of interest.

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