Professor Oleg V. Beydik: marking the 55th birth anniversary
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The article is devoted to the memory of Professor Oleg V. Beydik. His career and professional development described.

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Oleg Viktorovich was born on June 5, 1964 in Saratov, Russia into a family of a leading engineer at the defence enterprise, Viktor Alexeevich Beydik, and a general practitioner, Irina Il’inichna Beydik. He completed secondary education at school № 72 and became a student at the department of general medicine at Saratovsky Medical Institute and graduated from the institute in 1987.

It happened so that he sustained an injury in his early childhood and the event predestined the choice of the profession and the specialty.

While in medical school O.V. Beydik showed a lot of interest to research and developed particular interest in trauma and orthopaedics at the pre-graduate internship. At the time the department under the guidance of Professor Ariadna Evgenievna Abolina was housed at the 2nd Soviet Hospital (now V.I. Razumovsky GUZ SGBK № 2). The legendary institution was the first clinical hospital of the medical school of the last Imperial Saratovsky University (now, Saratov State Medical University named after V.I. Razumovsky) where such outstanding scientists of the world medicine as V.I. Razumovsky, S.R. Mirovtsev, S.I. Spasokukotsky were practicing at the beginning of the 20th century. Oleg Viktorovich attended the students’ research circle where he first met his consultants and lecturers Professor Mark L’vovich Abramov at the trauma and orthopaedic Department and Vladimir Nikolaevich Elistratov, Assistant Professor who helped him translate his innovation proposals into medical products. As undergraduate, Oleg Viktorovich appeared to be fully aware of his wish to get involved in trauma and orthopaedics but there were no training places available with the orthopaedic residency training program at the time. There was a practice of graduates’ assignment in the Soviet Union to help with their first job and, in the year of 1987, it was the only time in history of Saratovsky medical school that several assignments were made available with the Kurgansky Scientific Institute for Experimental and Clinical Orthopaedics and Trauma (KNIIEKOT) named after G.A. Ilizarov, now it is the world famous Russian Ilizarov Scientific Center for Restorative Traumatology and Orthopaedics, Kurgan, Russia. Four graduates of the Saratovsky Medical Institute – among them notable scientists Yury Petrovich Soldatov and Andrey Nikolaevich Reshetnikov – were assigned to KNIIEKOT. It was a very important life altering event in life of Oleg Viktorovich. He often remembered that he felt something like regret at leaving his hometown Saratov, his teachers and he thanked his lucky stars for the 3 years he worked in Kurgan that appeared to be very specific and important for his career.
Academician G.A. Ilizarov was one of internationally recognized leaders in orthopaedic and trauma surgery in the 80-es of the 20th century. The research institute that was fronted by Ilizarov had unofficial status of ‘Mecca of Trauma and Orthopaedics’. Oleg Viktorovich recollected he could not fully appreciate the honor conferred upon him but finally he presumed he succeeded in passing the exam with the Ilizarov School. There was another interesting defining moment in his time at Kurgan. He was assigned to the outpatient and rehabilitation department (ORD) of the Ilizarov Center whereas his former classmates were assigned to specialized clinical department. At the time inpatient substitution technologies were introduced into practice of the ORD headed by Vladimir Ivanovich Shevtsov. Specific economic conditions and specific features of the Ilizarov frame necessitated a need for inpatient substitution technologies. Ilizarov in-patients received 24 hour supervised treatment and stayed at the hospital for many months from the date of admission until the frame came off. Accumulated experience with the Ilizarov method showed that in-patients did not need 24 hour supervised treatment and out-patient treatment was considered an option. Patients with musculoskeletal injuries and orthopaedic pathologies were admitted to the ORD for emergency and elective procedures. Oleg Viktorovich admitted that a variety of trauma and orthopaedic conditions treated at the ORD demonstrated unique and remarkable possibilities with the Ilizarov method that could provide a wide range of clinical solutions. Vladimir Aleksandrovich Shestakov, Gennady Petrovich Ivanov, Igor Arkad’evich Kataev were his consultants at the ORD.

O.V. Beydik showed deep respect and gratitude to Ilizarov School over his lifetime and used to tell to his students, “If you know how to handle the Ilizarov apparatus all roads in orthopaedics and trauma will be open in front of you”. He continued to exhibit it in his own works and the works of his students.

In 1990 O.V. Beydik returned to his hometown Saratov to receive residence training at the trauma and orthopaedic department of the Saratovsky Medical Institute at the 2nd Soviet hospital. Head of the department, Professor A.E. Abolina, and the faculty were well acquainted with the Ilizarov method and applied the techniques, however, they encountered some problems that promoted the search of new solutions on improved practice that were reported in scientific papers of the staff. Nevertheless, O.V. Beydik recognized the importance of more extensive applications of the Ilizarov method and his skills to do so.

Early 90-es of the 20th century saw eventful changes in the social system. Private medical services were made available in the country. In 1992 O.V. Beydik established the first private hospital in Saratov and DINODA foundation for treatment of children with musculoskeletal disabilities. He directed both organizations up to 1996. The hospital was supported by V.I. Shevtsov, Director of the Kurgan Ilizarov Center and M.L. Abramov, Professor of the trauma and orthopaedic department of the Saratovsky Medical Institute. Principles of in-patient substitution technology were applied with the Ilizarov method at the O.V. Beydik’s hospital. Treatment was performed for in-patients using beds rented at the rehabilitation department of municipal hospital № 7 (now Regional Center for Thermal Injuries), and Surgeon-in-Chief of the hospital, Gennady Stepanovich Yakunin, supported and appreciated the method as unique. Oleg Viktorovich contributed to introduction of the method into emergency care and at a stage of rehabilitation of different thermal injuries. Many patients with severe congenital malformations, injuries and posttraumatic conditions received high quality trauma and orthopaedic assistance performed by Oleg Viktorovich at his hospital.

His own experience with the Ilizarov method stimulated the search of new solutions. A major problem he encountered with classical Ilizarov frame and fine wires was stability of fixation decreasing over the course of time. A thorough control of wire tensioning during bone fixation with the construct required frequent patients’ visits to the hospital to have dressings changed and stability related complications treated. Oleg Viktorovich found the solution to the problem with use of cantilever transosseous half-pins to improve stability throughout the whole period of Ilizarov fixation. It should be noted that a variety of transosseous half-pin fixators were used in trauma and orthopaedics in the last century and employed by many specialists in the USSR for external fixation but those were not the Ilizarov method with its versatile possibilities. O.V. Beydik could realize his ideas with the help of Konstantin Georgievich Butovsky, Assistant Professor at the Saratovsky Polytechnical Institute analyzing the existing half-pin fixators and developing his own design. O.V. Beydik was a person who was passionate about his work. Theoretical studies were supported by experimental and biomechanical research with the findings being patented. Thus, the resultant engineering solutions included metaphyseal and diaphyseal fixators having particular screw shape; fixators with particular size and diameter to be used for short and cancellous bone; finely cut tip of the half-pin to be placed in the bone without pre-reaming to reduce trauma and time for placement. Half-pins were shown to improve frame stability and reduce operating time making frame assembly and frame adjustment and pin care easier that resulted in less complication rate and development of various assembly designs to address different clinical conditions. O.V. Beydik demonstrated successful outcomes of complicated deformity correction with use of Ilizarov method employing half-pins of author’s design. He
introduced his innovations into clinical practice. More than 1000 patients from different parts of Russia and from foreign countries received surgical treatment at the private hospital over 5 years.

His PhD thesis on ‘Wire-and-half-pin external transosseous osteosynthesis in treatment of limb deformities’ was a consistent continuation of scientific and practical investigations performed between 1992 and 1995 [2]. Professor Mark L’vovich Abramov was the first thesis consultant of O.V. Beydik and Professor Nikolay Vladimirovich Ostrovsky took over after the death of Prof. Abramov. Oleg Viktorovich was inconsolable for the loss and was very thankful to N.V. Ostrovsky for his support in dissertation consulting. The thesis was successfully defended with Dissertation Committee at the Samarsky State Medical University (SSMU). Oleg Viktorovich was affiliated with the Samarsky State Medical University. In 1996 he joined the trauma and orthopaedic department of the SSMU as a research fellow with Professors G.P. Kotelnikov and N.V. Ostrovsky being his consultants between 1996 to his tragic death. Three years later, he successfully defended his doctorate dissertation on ‘Ways to optimize treatment of patients with injuries and limb deformities using external transosseous osteosynthesis’ [3] and presented mathematically and biomechanically substantiated constructs of author’s cantilever and through half-pin bone fixators and biomechanically substantiated frame assemblies for osteosynthesis of different limb segments in injuries and deformity correction. Half-pins had titanium and hydroxyapatite plasma coating to promote osteointegration and were successfully used in treatment of trauma and orthopaedic patients. Higher qualification category of trauma and orthopaedic surgeon was conferred to Oleg Viktorovich in 2000. Professor V.P. Morozov, Head of trauma and orthopaedic department at the SSMU assigned research fellow O.V. Beydik to a 100-bed clinical department of the municipal hospital № 9 as director in December 2000. He undertook to introduce modern technologies and brand new techniques for treatment of trauma and orthopaedic patients at the hospital № 9 including arthroscopy, joint replacement, specialized pediatric surgical treatment of congenital and acquired musculoskeletal diseases and cerebral palsy with the Ilizarov method, interlocking nailing for bone injuries. O.V. Beydik was a highly qualified specialist and could perform any of the above procedures producing 3 to 10 surgeries every day. We, his followers and colleagues, remember the time when we started practicing interlocking intramedullary nailing. Being a faithful follower and recognized representative of the Ilizarov School, an ingenious and creative person, Oleg Viktorovich admitted that current tendencies necessitated a need for interlocking IM nailing. Nailing was inconsistent with his clinical visualization of diaphyseal fracture repair but he also identified the advantages keeping up with the times. He succeeded in integrating nailing techniques in clinical practice at municipal hospital № 9.

O.V. Beydik was Professor at the trauma and orthopaedic department of the SSMU since 2002. His talent as a researcher complemented his educational talents. He had strong interpersonal skills that succeeded in an organizational environment. His high-level educational activities included lecture course in trauma and orthopaedics delivered for students of pediatric department and sawbone workshops. O.V. Beydik was chairman of the Society of young researchers and students at the SSMU from 2002 to 2009. He was awarded with multiple Appreciation Letters and Diplomas of Merit featuring his advances in scientific, educational and public activities recognized by the SSMU and Saratov health care committee. The Honorary title ‘Merited Inventor of RF’ was awarded to Dr. Beydik by RF Presidential edict in August 2003. The book ‘Osteosynthesis with half-pin and wire-and-half-pin external fixation’ by O.V. Beydik, G.P. Kotelnikov, N.V. Ostrovsky [4] was recognized by Ilizarov Foundation and the authors were awarded with Laureate Diploma in 2005. In 2004 Professor O.V. Beydik and his colleagues performed a unique surgery of skull defect substitution produced for a post-insult patient with techniques developed at the Kurgan Ilizarov Center. Professor’s title approved by the Higher Attestation Commission of RF was awarded to Dr.Beydik in June 2007. He was a winner of the 2007 National Mission Award granted to the best doctors of the Russian Federation. The award was established by Ministry of Health of the Russian Federation, TV channel 1 and the Mission Foundation. O.V. Beydik was nominated a laureate title “For creation of new method of diagnosis”. Professor Beydik was named a “Modern Russian Levsha” by Award Organizing Committee [5]. The work awarded was based on the method of transosseous osteosynthesis. Professor Beydik was a member of the editorial board of ‘Genius of Orthopaedics’ journal from 2006 to 2008. In 2008 the title Academician of the Russian Academy for Natural Sciences was granted to Professor O.V. Beydik. He was consultant to 1 doctorate and 16 PhD dissertations including 3 theses on Biomechanics specialty. Two doctorate and 1 PhD dissertations were defended by his students after his death. Dissertations of his followers were dedicated to further development of transosseous osteosynthesis techniques.

O.V. Beydik and his followers developed techniques of transosseous osteosynthesis to be used for treatment of clavicle fractures (Natalia Aleksandrovna Romakina, Cand. Sci (Med)), injuries to acromioclavicular joint (Yuri Vasilievich Goloburdin, Cand. Sci (Med)), injuries

O.V. Beydik is the author of more than 250 publications, 3 books, 48 innovations with the majority of them being dedicated to advanced applications of transosseous osteosynthesis techniques. From 2004 until last he was a dissertation committee member at the Saratovsky State Medical University, and he was a member of dissertation committee on biomechanics the Saratovsky State University from 2005. He was well known to orthopaedic community and patients from across Russia. Dissertations and publications of his students and acknowledgements from his patients are honorable memory to him.

Celebrating the 110th birthday of the Saratovsky State Medical University we’d like to extend our gratitude and appreciation to the teachers for their mentoring, faith and everlasting support to Oleg Viktorovich Beydik over the years: Kir Aleksandrovich Yudin, Assistant Professor at the department of anatomy, Professor Ilya Ivanovich Sholomov, Head of the department of nervous diseases, Aleksandr Daniilovich Manaev, Assistant Professor at the department of general medicine hospital surgery, Professor Yuri Alekseevich Neklyudov, Head of the department of forensic medicine, Professor Mark L’vovich Abramov at the trauma and orthopaedic department, Professor Nikolay Vladimirovich Ostrovsky, Head of the department of operative surgery and topographic anatomy, Aleksandr Vladimirovich Zaretskov, Assistant Professor at the trauma and orthopaedic department, Olga Konstantinovna Kon, Head of patent department at the SS MU, Vladimir Nikolaevich Elistratov, Head of trauma and orthopaedic department at the 2nd municipal hospital and many other people.

REFERENCES


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