

SCIENTIFIC AND PRACTICAL CONFERENCE: *TURNER READINGS*© *A.G. Baindurashvili, A.V. Zaletina, K.S. Solovyova*

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The article is dedicated to the organization and presentation of the scientific and practical conference, *Turner Readings*, which addressed the current issues in trauma surgery and childhood orthopedics between October 3 and 4, 2019 in St. Petersburg. The subjects discussed at the plenary and section meetings are covered, and the reports on the current level of trauma surgery and pediatric orthopedics and the prospects for the development of scientific and clinical research are analyzed. A total of 104 reports were presented. They were devoted to the diagnosis, treatment, and rehabilitation of injuries and their sequelae and the congenital and acquired diseases of the musculoskeletal system in children. A total of 386 people from 52 regions of Russia, Belarus, Moldova, Ukraine, Uzbekistan, Estonia, Germany, Switzerland, and Egypt registered to participate in the conference.

Keywords: treatment; injuries and diseases of the musculoskeletal system; children; Turner readings-2019.**НАУЧНО-ПРАКТИЧЕСКАЯ КОНФЕРЕНЦИЯ
«ТУРНЕРОВСКИЕ ЧТЕНИЯ»**© *A.G. Баиндурашвили, А.В. Залетина, К.С. Соловьева*

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Статья посвящена организации и проведению научно-практической конференции «Турнеровские чтения» по актуальным вопросам травматологии и ортопедии детского возраста, которая состоялась 3–4 октября 2019 г. в Санкт-Петербурге. Освещены темы, рассмотренные на пленарных и секционных заседаниях, проведен анализ докладов о современном уровне травматологии и ортопедии детского возраста и перспективах развития научных и клинических исследований. Всего заслушано 104 доклада по диагностике, лечению и реабилитации повреждений и их последствий, врожденных и приобретенных заболеваний костно-мышечной системы детского населения. В Турнеровских чтениях приняли участие 386 человек из 52 регионов России, из Беларуси, Молдовы, Украины, Узбекистана, Эстонии, Германии, Швейцарии, Египта.

Ключевые слова: лечение; повреждения и заболевания костно-мышечной системы; дети; Турнеровские чтения – 2019.

Since 1986, the Turner Scientific Research Institute for Children's Orthopedics has been the primary organizer of annual Russian National Scientific and Practical Conferences, which witness international participation on the topical issues of pediatric traumatology and orthopedics. For two days, employees of research and educational

institutions in Russia along with the practitioners from clinics and hospitals share their research and clinical work experience, and exchange new and improved medical care technologies. Conferences are held in various cities of Russia, where at least 150–200 specialists gathered and actively participated in delivering reports and sending abstracts of their



speeches for publication [1–6]. Since 2016, the annual Russian National conferences on the topical issues of traumatology and orthopedics of childhood have been conducted as a part of continuous medical education; therefore, the conferences had seen an increased number of participants in traditional meetings. St. Petersburg has become the main venue for these conferences [7]. The conference “Congenital and acquired pathology of the upper limbs” [8], as well as the children’s section of the XI Russian National Congress of Traumatologists and Orthopedists on April 11–13, 2018 [9], was held in St. Petersburg. These events saw a large engagement of participants. In 2019, the traditional conference was held under the new name “Turner Readings.” The objective remained unchanged, namely the improvement of specialized care for children, and the participants discussed achievements in the treatment process and introduced the research works of pediatric orthopedic traumatologists and technologies confirmed by medical science. An important challenge is the training of adult’s orthopedic traumatologists to work with the population of children, and improvement of the scientific and practical knowledge of specialists within the continuous medical education.

The website Turner Readings will remain the same (<http://turnerreadings.org/>).

The annual scientific and practical conference “Turner Readings” with international participation on the topical issues of pediatric traumatology and orthopedics was held on October 3–4, 2019 in St. Petersburg. This conference was dedicated to the 160th anniversary of the birth of Henrich Ivanovich Turner.

The conference was organized by the Turner Scientific Research Institute for Children’s Orthopedics and supported by the Ministry of Health of the Russian Federation, the Health Committee of the Government of St. Petersburg, the Association of Orthopaedists and Traumatologists of Russia, and the Association of Pediatric Orthopedic Traumatologists of St. Petersburg.

The conference participants were welcomed by the Director of the Turner Scientific Research Institute for Children’s Orthopedics, Ph.D. (Medicine), Professor, Academician of the Russian Academy of Sciences A.G. Baidurashvili; Scientific Supervisor of the Institute of Experimental Mineralogy RAS, Ph.D. (Medicine), Professor, Academician of the RAS G.A. Sofronov (St. Petersburg); Deputy Director of N.N. Priorov National Medical Research Center, Ph.D. (Medicine), Professor N.A. Yeskin (Moscow);





Director of the G.A. Ilizarov Russian Scientific Center “Reconstructive Traumatology and Orthopedics,” Ph.D. (Medicine), A.V. Gubin (Kurgan); Head Physician of the Federal Center of Traumatology, Orthopedics and Endoprosthetics, Ph.D. (Medicine), N.S. Nikolaev (Cheboksary); Deputy Chairman of the Health Committee of the Government of St. Petersburg A.M. Sarana; Head of the Department of Traumatology and Orthopedics, V.I. Razumovsky Saratov State Medical University, Ph.D. (Medicine), Professor I.A. Norkin (Saratov); Head of the Department of Military Traumatology and Orthopedics of the S.M. Kirov Military Medical Academy, Ph.D. (Medicine), Professor, Colonel of the Medical Service V.V. Khominets (St. Petersburg). Welcoming telegrams from the Russian Ministry of Health were read aloud.

The Turner readings were attended by 386 people from 52 regions of Russia, as well as from Belarus, Moldova, Ukraine, Uzbekistan, and Estonia. Guests arrived from Germany, Switzerland, and Egypt.

The readings program included two plenary sessions and nine sections on the topical issues of traumatology and orthopedics, as well as the next X Scientific-Practical Conference “Clean wound: innovative technologies” and a roundtable for nurses, “Standard operating procedures from development to implementation.” Over the long 30-year history of the Russian national conferences on pediatric traumatology and orthopedics, a diverse and eventful conference program with a large number of participants has not been organized yet!

The meeting was moderated by the most respected Russian specialists in the fields of traumatology and orthopedics of childhood, vertebrology, neurosurgery, and pediatric surgery, Academician A.G. Baidurashvili, Professor S.V. Vissarionov, V.M. Kenis, A.P. Pozdeev, V.V. Khominets, I.V. Shvedovchenko, O.E. Agranovich (St. Petersburg), N.A. Yeskin, V.M. Rozinov, O.V. Kozhevnikov, A.A. Kuleshov, L.K. Mikhailova (Moscow), A.V. Gubin, and A.M. Aranovich (Kurgan).



During the *first plenary session*, reports were presented on the current level of traumatology and orthopedics of childhood and the prospects for the development of scientific and clinical research. In the report of A.G. Baidurashvili*, “Innovative technologies in pediatric traumatology and orthopedics,” new development projects of the Turner Scientific Research Institute for Children’s Orthopedics, as well as experience in the implementation of high technology, were presented. Additionally, the researchers illustrated the positive results of surgical treatment of severe forms of congenital anomalies (malformations) of the musculoskeletal system, diseases, deformities, and consequences of injuries of the musculoskeletal system in children, combined with rehabilitation treatment and dispensary follow-up of the patient to maintain the results achieved.

N.A. Yeskin (Moscow) analyzed the state statistics of injuries and orthopedic morbidity of children along with the condition of trauma and orthopedic care for the children population of Russia. With the increase in injury rates in adolescents, there is a decrease in the provision of children with specialized traumatological and orthopedic beds. Along with the high levels of inpatient care for children in federal institutions and in large cities, the service is experiencing a huge shortage of outpatient specialists.

A.V. Gubin (Kurgan) presented the legacy of Gavriil Abramovich Ilizarov as a paradigm as a complex of fundamental scientific attitudes, including the stable fixation of fragments, compression-distraction method of osteosynthesis, changes in bone size and shape, careful attitude to tissues, prevention of infection, mechanical and drug stimulation of osteosynthesis, and comfort for patients.

S.A. Valiullina (Moscow) spoke, in detail, about the modern approach to the rehabilitation of chil-

* Hereinafter, only the surname of the speaker is used, although each message was prepared by several co-authors.

dren with severe trauma. She highlighted the aspects of rehabilitation treatment based on the body's response to trauma and its consequences in different age groups and at different periods after the trauma (up to 6 months, up to a year, first 2 years) and described a biosocial model of rehabilitation in the family.

The Head of the Department of Military Traumatology and Orthopedics of the S.M. Kirov Military Medical Academy (MMA) V.V. Khominets (St. Petersburg) presented a series of reports by the staff of the department and the H.I. Turner Orthopedic Clinic of MMA on medical care in the Russian army in various historical periods of Russia, on the role of H.I. Turner Clinic in the development of the departments of field surgery, desmurgy, and orthopedics, and in the establishment of the specialty "Orthopedics and Traumatology" within the framework of surgery. The topic of the report by A.V. Ovdienko was multi-fragment bone fractures of the extremities that occur due to injuring shells, and the author concluded that G.A. Ilizarov apparatus was necessary to apply since it is the only possible method of reducing and retaining the numerous fragments. G.A. Lyakhovets spoke about orthopedic morbidity and injury rates in the Russian imperial army, starting with the battle of Borodino, where 800 doctors participated. S.V. Mikhailov reported about the aspects of the means of transport immobilization of the wounded during the First World War and how the Red Cross public organization and the Romanov Royal Family helped the wounded soldiers. All messages aroused great interest among the listeners who were not familiar with the detailed history of helping the military personnel who were injured and wounded on the battlefield and in hospitals.

At the meeting of the section "*Treatment of injuries of the musculoskeletal system and their consequences*," the authors of most reports proposed new options for the surgical treatment of fractures and dislocations. Based on an analysis of the results of treating large groups of children with acute bone fractures by using conservative and surgical methods, the minimally invasive methods of surgical treatment of skeletal trauma in children with polytrauma (D.A. Dovgal, Leninsk-Kuznetskiy) and isolated bone fractures in children of the younger age group (B.A. Vasyukov, Stavropol) were preferred. These methods reduced the length of hospital stay and led to good anatomical and functional results. Only the stable fixation of fragments in

the acute period of trauma allows a full restoration of joint functions in the case of intraarticular fractures (D.D. Pavlova, Moscow; M.G. Rasheva, Ivanovo). More than 500 surgical interventions were successfully performed in a multidisciplinary field pediatric hospital for disaster medicine to provide specialized medical care for children with diseases and injuries of the musculoskeletal system (V.I. Petlakh, Moscow). The arthroscopic method of surgical interventions for the pathology of large joints has advantages over traditional techniques due to minimal soft tissue injury. Using this method, it was possible to obtain the optimal functional and cosmetic results and shorten the postoperative period, which was proved by A.G. Yeltsin (Moscow), based on the surgical treatment of children with the instability of recurring post-traumatic dislocation of the shoulder joint, and D.D. Pavlova (Moscow), who reported promising results after using the meniscus suture of the knee joint.

The topic of two breakout sessions was "*Issues of diagnosis and treatment of children with diseases of the musculoskeletal system*," including rare diseases. A.M. Aranovich (Kurgan) presented new options and a sequence of surgeries for lengthening the limbs in children with achondroplasia. L.K. Mikhailova and O.A. Polyakova (Moscow) described the differential diagnosis of mucopolysaccharidosis (MPS) and nonspecific signs of type VI MPS for the early detection of the disease. A.V. Gubin (Kurgan) listed vertebral syndromes (instability, decompensation, and deformity) in types IV and VI MPS and called for caution while deciding the surgical treatment, especially in the early terms. The researchers discussed the issues of joint actions of an orthopedist, rheumatologist, and oncologist in villonodular synovitis (R.K. Raupov, St. Petersburg) and differential diagnostics of recessive forms of multiple epiphyseal dysplasia of juvenile arthritis (D.A. Petrova, St. Petersburg). The team of the Department of Hand Surgery and Reconstructive Microsurgery, the Turner Scientific Research Institute for Children's Orthopedics, using clinical examples, demonstrated that the microsurgical transplantation of the fibular bone is an optimal method for closing extensive bone defects in children.

A number of authors reported preliminary results of their research, which included the clinical use of pediatric hexapol Ortho-SUVm (V.A. Vilensky, St. Petersburg), the local effects of spectral phototherapy on a postoperative wound to accelerate the healing process, relieve quickly

swelling and pain (N.M. Belokrylov, Perm), the use of semiconductor fiber optic lasers in the treatment of degenerative and dystrophic bone diseases (V.G. Abushkina, Chelyabinsk), the use of artificial composite biodegradable implant in pediatric patients with pseudoarthrosis and pathological fractures (N.N. Shavga, Chisinau and Samara). Several works have been devoted to the orthopedic consequences of acute infection, which occurs in early childhood and damages the musculoskeletal system. The surgical treatment of late consequences of meningococemia is aimed to restore the length along with anatomical and biomechanical axes of the limb (Yu. E. Garkavenko, St. Petersburg). To eliminate the consequences of meningococcal sepsis, both surgical treatment and prosthetic and orthopedic aids are necessary (A.A. Koltsov, St. Petersburg). A.A. Koryukov (St. Petersburg) registered an acute restriction of the support and walking functions in older patients after poliomyelitis in childhood, so they could only move with the help of improvised technical means.

A large examination of adolescent patients in an orthopedic clinic revealed a decrease in self-esteem of psychosocial status in the significant areas of life as compared to healthy adolescents. Patients of the orthopedic clinic, who are receiving long-term intensive treatment, and female patients with diseases accompanied by the visible deviations of appearance from the norm represent a risk group for psychological maladaptation and psychological health disorders (G.V. Pyatakova, A.O. Kozhevnikova, St. Petersburg).

At two breakout sessions, the topic *“Actual issues of treating children with congenital malformations, diseases and injuries of the spine and spinal cord”* was discussed. Surgical treatment of children with spinal pathology is the focus of research by vertebral surgeons and neurologists in St. Petersburg, Moscow, Novosibirsk, Kurgan, and Belarus. Obviously, most speakers were the employees of these scientific centers. N.O. Khusainov et al. (St. Petersburg) presented an X-ray characteristic of congenital deformities of the thoracic spine. Changes in bone structures are due to the asymmetric growth of half of the vertebral body at the unsegmented rod level. In case of segmentation disorder of the lateral surfaces of the vertebral bodies, there is a development of pathological lordosis. The authors showed the possibility of correcting congenital deformity of the thoracic spine in pediatric patients with the use of

various types of metal structures. D.K. Tesakov, with a group of co-authors from Minsk (Belarus), who have been participating in Russian national conferences on childhood traumatology and orthopedics for many years, evaluated the changes in the time of the development of congenital spinal deformities, with the use of molecular genetic and biochemical markers.

The following presentations addressed surgical approaches for congenital spinal deformities: D.N. Kokushin (St. Petersburg) analyzed the correct position of transpedicular screws in pediatric patients with congenital deformities; D.K. Tesakov presented various tactical approaches to deformity surgery, in particular the use of neuromonitoring in spinal deformity surgery; P.V. Ochirova (Kurgan) highlighted the characteristics of surgical treatment of spinal deformities in patients with rare genetic diseases; and N.N. Shavga (Chisinau) considered the options for surgeries for severe congenital and idiopathic scoliotic spinal deformities in children and adolescents.

E.V. Gubina presented the program on treatment of chest deformities, which was used in Novosibirsk in children and adolescents with idiopathic scoliosis. A.N. Filippova (St. Petersburg) presented the indicators of bone elements of the vertebrae in pediatric patients with idiopathic scoliosis. Lenke III, A.R. Syundyukov (Cheboksary) described the aspects of derotation in the surgical correction of idiopathic scoliosis.

Subsequent reports combined the methods of surgical or conservative treatment of progressive scoliosis (V.F. Blandinsky, Yaroslavl), juvenile osteochondrosis of the lumbar spine (A.A. Kuleshov, Moscow), and unstable and complicated injuries and deformities of the spine (O.S. Iskhakov, Moscow) with the long-term rehabilitation and wearing a corset, including corrective corset using the sensors of constant wear (I.P. Pavlov, St. Petersburg). Based on the extensive experience in the early surgical treatment of pediatric patients with vertebral column and spinal cord injuries at the Federal Center of the Spine at the Turner Scientific Research Institute for Children's Orthopedics, the authors proved the effect of the magnitude of spinal stenosis due to the explosive fractures of the thoracic and lumbar spine in pediatric patients on the development of neurological disorders.

Traditionally, the participants displayed great interest in discussing the topic *“Reconstructive-*

remedial treatment of pediatric patients with the hip joint disorders." Based on several years of experience in the treatment of congenital hip dislocation at the N.N. Priorov National Medical Research Center, the participants analyzed the primary aspects of the choice of approach and characteristics of surgical reconstruction. An improved technique for triple pelvic osteotomy, which considered the condition of the sagittal balance of the spine and the spinal-pelvic ratios and with the use of personalized templates, allowed for the most accurate multi-plane correction of the acetabulum (P.I. Bortulev, St. Petersburg). In pediatric patients over 9 years old, the combination of a triple pelvic osteotomy and corrective hip osteotomy provides effective results based on mathematical forecasting and individual planning (N.M. Belokrylov, Perm). The approach of surgical treatment of dislocation and subluxation of the hip joint in pediatric patients with the consequences of spinal hernias are determined by the age of the patients and the size of the acetabular index (S.V. Ivanov, St. Petersburg). Surgical approaches and treatment outcomes for juvenile epiphysiolysis of the femoral head (D.B. Barsukov, St. Petersburg) and the Legg–Calve–Perthes disease (A.V. Ivanov, Moscow; S.A. Rubashkin, Saratov; M.P. Tyoplenky, Kurgan) were presented. A.I. Korolkov from Lviv and Kharkov (Ukraine) proposed minimally invasive methods for treating Perthes disease. He posed the question "Is it always necessary to operate coxa vara?" and outlined the methods for preventive joint surgery in patients with cerebral palsy.

At the *second plenary meeting*, orthopedists from Germany and Switzerland delivered speeches. Bettina Westhoff (Dusseldorf, Germany) spoke about the work of the Association of Pediatric Orthopedists of German-speaking countries, bringing together about 300 specialists. During the meetings, orthopedists discussed the clinical cases and offered the most effective treatment plans and algorithms. B. Westhoff's speech proved the importance of organizational measures for the early diagnosis of pathology, careful implementation, and sequence of measures in treatment of pediatric patients of the first year of life with hip dysplasia. A report by Harry Klima (St. Gallen, Switzerland) described the results of correction of lower limb deformities by using an assessment of gait biomechanics. Urs von Deimling (St. Augustine, Germany) demonstrated the use of various hardware structures that corrected spinal deformities in pediatric patients of different

height and age. Designs are used by considering the further growth of the child. O.A. Kuptsova spoke about the history and work of the Association of Pediatric Orthopedists and Traumatologists of St. Petersburg.

The next two sections of the conference were devoted to the topic "*Modern approaches to treatment of pediatric patients with congenital malformations and diseases of the lower extremities.*" Methods were presented for treating limb deformities caused by the deficiency of vitamin D (E. Yu. Shlyakova, Nizhny Novgorod), rickets-like diseases (G.Z. Zufarov, Tashkent, Uzbekistan), and Blount disease (O.A. Fomilina, St. Petersburg). Employees of the Department of pathology of foot, lower leg and systemic diseases, Turner Scientific Research Institute for Children's Orthopedics (St. Petersburg) used panoramic radiographs in the Digital Diagnost system (V.M. Kenis) for the preoperative planning of correction of lower limb deformities in pediatric patients. The department successfully used the method of controlled bone growth in pediatric patients with systemic skeletal dysplasia (E.S. Morenko) for correcting flexion contractures of the knee joint (S.I. Trofimova) and arthrogyrosis (E.V. Petrova). The conservative treatment of congenital clubfoot by the Ponseti method is highly prevalent in Russia. Yu A. Stepanova (St. Petersburg) analyzed the possible causes of failure of this type of treatment. V.N. Ivanov from Krasnodar shared his positive experience in treating clubfoot.

Furthermore, the researchers discussed the diagnostic criteria for pediatric patients with platypodia (A. Yu. Dimitrieva, St. Petersburg), as well as the necessary degree of shortening of the Achilles tendon for platypodia (V.M. Kenis, St. Petersburg). The methods of correction of planovalgus deformity of the feet, which were adopted in the National Medical Research Center for Traumatology and Orthopedics (Moscow), were described by I.V. Gribova. V.M. Kenis (St. Petersburg) formulated the detailed indications for surgical treatment and the choice of its approach for foot deformity in patients with cerebral palsy, and E.N. Solovyova (Yaroslavl) shared the long-term results of treatment of pediatric patients with congenital vertical talus bone. Department of Trauma Consequences, the Turner Scientific Research Institute for Children's Orthopedics, presented the experience of treating post-burn cicatricial deformities of the feet with an assessment of the support function and stability of

the body vertical balance before and after surgical treatment (M.S. Nikitin).

Messages in the section “*Contemporary technologies for treating pediatric patients with congenital malformations and diseases of the upper extremity*” demonstrated a high level of orthopedic surgical skill, which enabled the researchers to achieve the habilitation of patients with severe anomalies in the hand development. A.P. Bespalchuk (Minsk) spoke about the results of surgical treatment of complex forms of preaxial polydactyly of the hand, and V.I. Zavarukhin (St. Petersburg) presented the experience of reconstruction of finger I in pediatric patients of this group of malformations. Microsurgical technique with muscle transplantation enabled to restore the active forearm flexion in arthrogryposis (O.E. Agranovich, St. Petersburg) and to ensure the optimal results of reconstruction of the first ray of the hand (S.I. Golyana, St. Petersburg). Scientific developments on the characteristics of the vascular anatomy of donor and recipient areas of the foot and hand (D.Yu. Grankin, St. Petersburg) and microsurgical aspects of autotransplantation of the toes on the hand in the treatment of macrodactyly in pediatric patients (T.I. Tikhonenko, St. Petersburg) were reported. Surgeons–practitioners were greatly interested in the approaches for functional prostheses for pediatric patients with underdeveloped hand, which were presented by I.V. Pavlov (St. Petersburg).

The claimed Turner Readings program has been fully implemented. In total, 11 reports were heard and discussed at plenary meetings and 93 at breakout sessions. Over the course of two days, the audience rooms at all meetings were filled, and the audience showed profound interest in each report. Most of the participants in the Turner readings had their several years of personal experience in organizing and practicing emergency care along with conservative and surgical treatment of injuries and diseases of the musculoskeletal system and their consequences in pediatric patients. Therefore, the participants listened carefully, were active, and asked several questions to the speakers. Sometimes, there were fierce debates among them.

The Organizing Committee of the Turner Readings singled out the authors of scientific reports, which were most interesting both on the topic of the study and in the presentation design. Svetlana Eduardovna Kralina (N.N. Priorov National Medical Research Center, Moscow), Vadim Vitalievich Kozhevnikov (Federal Center of Traumatology, Orthopedics and Endoprosthetics,

Barnaul), and Dmitry Kimovich Tesakov (Minsk, Belarus) were awarded with the diplomas of the conference “Turner Readings.”

The organizers of the conference Turner Readings took care of the convenience and comfort for all participants. Plenary sessions and sections were held in the Congress Hall and the conference rooms of the “Holiday Inn — Moscow Gate,” there was a place for a representative exhibition of medical devices and equipment. Careful unobtrusive control was conducted over the attendance by the audience of scientific events to issue certificates and credit points as a part of continuous medical education. Materials of the scientific and practical conferences are published in the form of a scientific publication [10].

On behalf of the organizing committee, we express gratitude to dear colleagues for participating in the Turner Readings conference!

We will be waiting for you this year on October 8–9, 2020 in St. Petersburg!

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Contribution of authors

A.G. *Baindurashvili* created the article concept and edited the text.

A.V. *Zaletina* edited the text and performed literature analysis.

K.S. *Solovieva* wrote the article, performed analysis of the literature.

All authors made a significant contribution to preparation of the article, read and approved the final version before publication.

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