

## SCIENTIFIC AND PRACTICAL CONFERENCE: TURNER READINGS 2020 – ONLINE

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The annual all-Russian scientific and practical conference on topical issues of pediatric orthopedics and trauma surgery, named Turner readings, was held on October 8-9, 2020. All meetings, symposia, and workshops were held online due to the ban on mass events during the coronavirus pandemic. In total, 102 articles from Russia and neighboring countries were submitted for publication in Turner reading conference proceedings. The organizing committee chose to present reports that contained data on new research and opened up prospects for the future. Approximately 900 people were registered to participate in the conference as listeners. The sessions were broadcast simultaneously on three players. During the broadcast, more than 400 people were connected to listen simultaneously. This article briefly presents the topics of the meetings and interesting messages.

**Keywords:** children; orthopedics and trauma surgery; online conference; Turner readings.

## НАУЧНО-ПРАКТИЧЕСКАЯ КОНФЕРЕНЦИЯ «ТУРНЕРОВСКИЕ ЧТЕНИЯ – 2020 – ОНЛАЙН»

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Ежегодная Всероссийская научно-практическая конференция, посвященная актуальным вопросам травматологии и ортопедии детского возраста, «Турнеровские чтения» состоялась 8–9 октября 2020 г. Все заседания, симпозиумы и мастер классы проходили в режиме онлайн из-за запрещения проведения массовых мероприятий в период пандемии коронавируса. Для публикации в материалах «Турнеровских чтений» было подано 102 статьи из России и стран ближнего зарубежья. Оргкомитет выбрал для представления доклады, которые содержали данные о новых исследованиях и открывали перспективы на будущее. Для участия в конференции в качестве слушателей были зарегистрированы около 900 человек. Трансляция заседаний осуществлялась по трем плеерам. Во время трансляции заседаний к прослушиванию одновременно подключались более 400 человек. В данной статье кратко представлена тематика заседаний и интересные сообщения.

**Ключевые слова:** дети; травматология и ортопедия; онлайн-конференция; Турнеровские чтения.

Turner Readings, the annual scientific and practical conference devoted to topical issues of traumatology and orthopedics of children, was held on October 8–9, 2020. For the first time in the more than 30-year history of conferences [1–5], all meetings, symposiums, and master classes were held online due to the prohibition of mass events

during the coronavirus pandemic [6, 7]. Section moderators, speakers, and listeners participated in the conference while staying at their workplaces in various cities of Russia and neighboring countries. The conference program was very intense, and the broadcast was simultaneously conducted in three players (sections). Conference attendees had the

opportunity to switch to other sessions and choose the most interesting messages for themselves.

Thanks to the new format of the conference, the number of participants has become a record: about 900 people registered, and up to 400 listeners were simultaneously connected.

One-hundred and two articles were submitted for publication in the materials of the Turner Readings. The organizing committee chose more than 100 reports for inclusion in the conference program, which contained the results of new research and descriptions of promising methods for diagnosing and treating pathology of the musculoskeletal system in children.

The conference was opened by Professor A.G. Baidurashvili, Full Member of the Russian Academy of Sciences, the President of our institution, who spoke about the new tasks set by the Ministry of Health of the Russian Federation for national pediatric traumatology and orthopedics. This is reflected in the new name of Turner Institute — H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery — as well as in the changed structure of the institution and in additional tasks to improve children's traumatological and orthopedic care in the administrative territories of the Russian Federation.

Professor S. V. Vissarionov, director of the H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery, RAS Corresponding Member, presented the scientific achievements of the Center during the "Decade of Childhood" announced by the government of the Russian Federation. He spoke about the successful work of the Spina Bifida and Arthrogryposis Centers; arthrogryposis created at the Institute of the Federal Children's Center for the treatment of congenital malformations; diseases and deformities of the spine, and vertebral injuries combined with spinal cord injuries; and presented the results of innovative projects for the surgical treatment of congenital malformations and diseases of the muscular system developed and improved in the departments of the institute, and the use of robotic therapy in the rehabilitation process.

V.M. Kenis, MD, deputy director for Innovative Development and Work with Regions, spoke about the prospects for cooperation and the first results of the work of H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery with practical health care in regions and cities of 85 constituent entities of the Russian Federation. Traveling to cities and regions, employees of the Department for Work with the Regions of our Center become acquainted with the organization

of outpatient and inpatient traumatological and orthopedic care for children, modern equipment, and medicines, and they determined the compliance of specialized care with the modern level of medical knowledge and the level of professionalism of medical personnel. The main task of the new organizational and methodological direction is to assist regional specialists in the implementation of modern scientific and practical achievements into practice, in training personnel, and in concluding partnership agreements. Contacts with the use of telemedicine are being actively developed for urgent consultations of regional doctors on the diagnosis and treatment of children with orthopedic and traumatological pathology.

S.V. Ivanov, PhD, head of the Spina Bifida Center (H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery, St. Petersburg) emphasized that the frequency of spinal hernias and their combination with congenital pathology of the musculoskeletal system make it necessary to constantly work with doctors to identify the adverse consequences of this pathology. Accumulated experience has shown that only a multidisciplinary approach to the complex rehabilitation of children allows optimal decisions to be made. D.N. Kokushin, PhD (H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery, St. Petersburg), reported on the experience of using additive technologies in the surgical treatment of children with congenital deformities of the thoracic and lumbar spine with the formation of guide templates for screws, taking into account the anatomical and anthropometric characteristics of the patient. The study is promising. Currently, guide templates are used in the treatment of other types of pathology of the musculoskeletal system. O.A. Kuptsova\* et al. (H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery and Children's Hospital No. 2, St. Petersburg) showed the peculiarities of the treatment of children with injuries in Children's Hospital No. 2 of St. Mary Magdalene during the period of restrictive measures associated with quarantine for COVID-19 in comparison with similar periods of previous years. The overall referral rate has decreased, but the share of domestic injuries has increased and the number of children with street and sports injuries has decreased, which is associated with isolation measures in connection with quarantine measures.

\* Hereinafter, only the names of the speakers are given without mentioning their co-authors.

The session of the section "Treatment of injuries of the musculoskeletal system and their sequelae" began with a report by I.I. Meltsin (Orenburg) on the peculiarities of diagnosis and surgical tactics for injuries to the bones of the upper limb. Analysis of the treatment results in various institutions of the region showed a large number of errors in diagnosis, as well as complications in the form of contractures of the elbow joint, delayed fusion of the forearm bones, and injuries of the median and radial nerves. The author believes that these errors are explained by the fact that the treatment of children was approached without taking into account the peculiarities and principles of childhood traumatology using the same surgical methods as in adults. In the Orenburg region, the number of pediatric orthopedic traumatologists is small, and the specialists of the adult network treat the injuries of the musculoskeletal system in children. This situation allowed the author to once again put before the Ministry of Health of the Russian Federation a question that had arisen more than once about the need to introduce the specialty "pediatric orthopedic traumatologist" by analogy with the selection of pediatric specialists in many other specialties.

S.A. Lukyanov (H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery) presented a comparative analysis of the results of surgical stabilization of the joint in children with traumatic instability of the shoulder joint and highlighted the differences in treatment tactics. With the incomplete growth of the child in acute cases, an advisable approach is to carry out conservative measures with recurrent instability — surgical one.

Two reports were read by G.J. Bayimbetov (Tashkent). The first report presented the successful results of surgical treatment and rehabilitation in chronic apophyseolysis of the humerus in children. The second report presented the results of the authors' observation of the treatment of children with post-traumatic contractures of the elbow joint, which arose as a result of incorrect treatment tactics in the acute period. The operative technique, immobilization, and gymnastics are presented by the authors as a new approach to an old problem. A.N. Evdokimov (Moscow) was built in the form of clinical guidelines, which is most useful for practicing doctors. The topic of surgical tactics for multiple injuries of the flexor tendons in the area of the fibro-synovial canals of the fingers of children is not often discussed at scientific and practical conferences. Injuries are rare, and the

small size of the tendons complicates the work of the surgeon and suggests a false decision "to postpone the restoration of the tendons to an older age." The authors strongly recommend a primary suture of all tendons 1–2 days after injury and a delayed suture within 2–3 weeks. One-stage and two-stage tendoplasty after the fourth week is described in detail. Particular attention is paid to the tendon suture technique, namely, the use of thin suture material. Children of different ages may have different rehabilitation and outcomes.

K.A. Afonichev, MD (H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery), also focused on practicing doctors. Having studied the long-term results of various methods of closing a skin defect in helping children during the acute period of burn injury, the authors refused to use mesh perforated flaps because of their tendency to cause scarring and opted to use only full-thickness skin flaps. The tactics of the subsequent long-term staged observation of patients with the consequences of deep and extensive burns has been proposed, which allows various methods of surgical interventions and conservative measures to be applied in a timely manner depending on the child's age, localization of the burn, and type of scars. K.A. Afonichev answered in detail the questions of the audience about the method of expander skin transplantation.

At conferences in previous years, traumatologists repeatedly presented multistage surgical interventions to close extensive scalped wounds after dog bites. V.G. Bagaev (Moscow) highlighted this problem from the other side — as a severe stress disorder that has long-term memory, causing the affected child to see the picture of the dog attack again and again and experience repeated fear. The proposed method is the inhalation of xenon in subdrug concentrations in combination with oxygen, which reduces the intensity of pain, normalizes sleep, and erases the picture of violence from memory. V.G. Kornienko (Tula) spoke about the need for analgesia in patients of the pediatric department of traumatology and orthopedics, preferring opioid-free and non-injection postoperative analgesia.

V.M. Kenis (H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery) introduced the audience to the history of using negative pressure to stimulate the healing of deep necrotizing wounds. He spoke about the joint work of the institute with the enterprise "Medtekhnika" to create an "aspirator for vacuum wound drainage," protected by the RF patent for an invention, which is registered by the Ministry

of Health of the Russian Federation as “Device PVT-200,” has a permit for medical use and is used in the clinic of the Center. Examples of the positive impact of vacuum therapy on the healing of deep burns, trophic scars, and electrical burns were given by K.A. Afonichev, T.N. Tikhonenko, and O.N. Filippov in their reports.

The moderators of the meeting “Topical issues of treatment and rehabilitation of children with injuries, congenital malformations, and diseases of the spine and spinal cord” were spine surgeons S.V. Vissarionov, A.A. Kuleshov, and S.G. Mlyavyh. The reports of S.N. Makarova (NMRC of TO), I.N. Lisyan-sky (NMRC of TO named after N.N. Priorov), and V.I. Zorin (St. Petersburg) followed, stating that surgical methods for treating spinal deformities are constantly being improved, including those in difficult locations for diagnosis and treatment such as the cervical spine. The message from M.A. Khar-dikov dealt with the problems of spinal system instability in young children. To prevent dislocation of metal structures, the recommended approach is to increase the fixation zone for the correction of congenital deformity (H. Turner National Medical Research Center for Children’s Orthopedics and Trauma Surgery). Unfortunately, due to technical reasons, three reports from Belarus were not delivered.

In the second part of the meeting, I.A. Redchenko (St. Petersburg) presented basic 3D models of torso orthoses after surgical treatment of spinal pathology. Professor V.F. Blandinsky (Yaroslavl) spoke about the choice of models of corsets for the conservative treatment of idiopathic scoliosis depending on the type of arch. The effectiveness of short intensive rehabilitation courses in combination with the use of Chéneau-type corsets (I.V. Pavlov, St. Petersburg) was proved and a learning curve was proposed in minimally invasive correction of scoliosis in adolescents (A.R. Sindyukov, Cheboksary). Supporters of the conservative method of treating scoliosis suggest combining individual corsets (both shortened and intensive, twice a day) and strength gymnastics courses. During the discussion, it was suggested that orthopedists should observe adolescent children and that more frequent conservative treatment be applied, the appeal to which decreased due to the success of surgical care. At the end of the meeting, S.V. Vissarionov spoke about the work of a small innovative enterprise on the basis of the H. Turner National Medical Research Center for Children’s Orthopedics and Trauma Surgery, which allows for the joint work of surgeons, prosthetists, and rehabilitation therapists.

The second day of the conference was devoted to clinical experience in the treatment of congenital malformations and limb diseases. A.M. Juraev et al. (Tashkent, Uzbekistan) presented the results of treatment of children with a high scapula in combination with another pathology. They performed the operation according to the method of A.P. Poz-deev; all patients had no relapses or neurological complications. A series of reports using microsurgical techniques was presented by employees from H. Turner National Medical Research Center for Children’s Orthopedics and Trauma Surgery. The results of the use of unique modern technologies in the treatment of children with diseases of the upper extremities were discussed: the use of the pectoralis major muscle to restore active movements in the shoulder and elbow joints in arthrogryposis (O.E. Agranovich), the technique of surgical interventions for extensor contractures of the elbow joints in arthrogryposis (E. Petrova), and elongation of the ulna by distraction osteosynthesis in congenital ulnar clubhand (N.V. Avdeichik). Endoprosthetics of the elbow joint is an extremely difficult task due to the anatomical and functional characteristics of the joint. In clinical practice, various options have been proposed, which do not always give positive results. The operation is indicated after 14 years, then the joint needs early gymnastics and carefully performed rehabilitation (S.I. Golyana). On days 2–3 after a low-voltage electric burn of the hand, O.V. Filippova and S.I. Golyana performed radical necrectomy in 44 patients with replacement of the defect with a full-thickness skin graft on the feeding pedicle taken by a microsurgical method. The flexor tendons were repaired in the acute period. T.I. Tikhonenko showed the stimulating effect of vacuum therapy on the acceleration of epithelialization of wounds and the growth of granulations. An absolute contraindication is the presence of open neurovascular bundles. P.V. Goncharuk (Moscow) presented a comprehensive reconstruction of the soft tissues of the nail phalanges of the fingers of children. Moderator Professor I.V. Shvedovchenko found the presentations and descriptions of clinical examples of the treatment of congenital pathology and diseases of the upper limbs interesting and instructive in institutions of various regions.

The meeting on the topic “Reconstructive and restorative treatment of children with diseases of the hip joint” always attracts a large number of participants. S.E. Kralina shared the rich experience of the orthopedic department of the NMRC of TO, named after N.N. Priorov. On the basis of a series of radiographs, she substantiated the features of sur-

gical treatment of the most common diseases of the hip joint in children and adolescents. The transition to surgical treatment is advisable after two months after an unsuccessful conservative. The scope of the intervention is determined by the child's age, function and X-ray picture of the hip joint, and the state of the head and cavity. Joint replacement was performed at the age of no younger than 15 years.

P.N. Bortulev (H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery) proved the effectiveness of using personalized templates for triple pelvic osteotomy in children with hip dysplasia. Significant modifications were made to Dunn reconstructive surgery in the treatment of juvenile epiphysis of the femoral head (D.B. Barsukov). The technique of transposition of the high-standing greater trochanter was improved for the deformation of the proximal femur with restoration of gluteal muscle function in children aged 8–12 years (I.Yu. Pozdnykin). An algorithm for indications for open hip reduction in children with congenital arthrogryposis was developed. Long-term results showed that aseptic necrosis of the femoral head developed less frequently than with closed reduction (S.F. Batkin, H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery). Professor V.V. Kozhevnikov (Barnaul) discussed the treatment of children with multiplanar deformity of the proximal femur and residual dysplasia of the hip joint, which included surgical manipulations and intensive rehabilitation. Summing up the results of the meeting, moderator Professor N.M. Belokrylov (Penza) highly appreciated the novelty and quality of the reports and illustrative material, which helps improve the knowledge of practical orthopedists, and the good preparation for the online conference.

The section "Modern approaches to the treatment of children with congenital malformations and diseases of the lower extremities" was chaired by V.M. Kenis and O.V. Kozhevnikov. It began with a detailed report by I.V. Gribova about the long-term experience of the NMRC of TO, named after Priorov, on a thorough examination and surgical correction of congenital and acquired foot pathology in children. Among the positive results of the early application of the Ponseti method in congenital clubfoot, relapses were observed, which were treated at the age of 9–11 years. The theme of recurrence of congenital clubfoot was continued by V.V. Kozhevnikov (Barnaul), who proposed the use of external fixation devices. The pain in the knee joint, which required improved observation and treatment of patients, was described by I.A. Abushkin (Chelyabinsk) and

A.R. Syundikov (Cheboksary). D.D. Pavlova (Moscow) reported on the possibilities of the meniscus suture technique "inside out" and described in detail indications, surgery technique and complications. The technique of surgical treatment of flat feet in children was reported by A.V. Sertakov and M.Kh. Timaev (Saratov). Young scientists also presented interesting findings. Postgraduate student D.A. Petrova presented a report on the experience of using temporary epiphyseodesis with 8-plates in the treatment of lower extremities deformities in children with skeletal dysplasias. Postgraduate student A.Yu. Dimitrieva assessed the prevalence and reliability of the pathology diagnostics as well as the quality of life of children with mobile flat feet based on the study of children with mobile flat feet and survey of patients and their parents using Russian and international scales as well (H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery).

For many years, on the initiative of A.G. Baindurashvili, H. Turner National Medical Research Center for Children's Orthopedics and Trauma Surgery conducts scientific and practical events with the participation of geneticists, rheumatologists, and neurologists to better acquaint orthopedists with the diagnosis and treatment of orphan diseases. The same meeting was organized at the Turner Readings in 2020. High professionalism distinguished the speakers in this section; experts suggested symptom complexes for the diagnosis of hereditary and systemic diseases, and orthopedists described individual cases of surgical treatment of orthopedic problems in sick children.

Two symposiums were held, namely, "Rare bone pathology" (with the support of the Association of Pediatric Traumatologists and Orthopedists for Rare Bone Pathology and the Professional Association of Experts in Rare Diseases) and "Non-inflammatory arthropathies in the practice of pediatric orthopedics" (with the support of the representative office of JSC Safari-Aventic Group).

The first experience of conducting the "Turner Readings" online was successful. The topics were very interesting and varied, and attracted a large number of listeners. For traumatologists, orthopedists, pediatric surgeons, and other specialists who diagnose, treat, and rehabilitate children with injuries and diseases of the musculoskeletal system, the scientific and practical reports and presentations at conference meetings, as well as the opportunity to ask the speakers questions, were undoubtedly useful. The event was accredited under the Continuing Medical Education Program.

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### Author contributions

K.S. Solovyova — article writing.

A.V. Zaletina — text editing, literature analysis

A.V. Ovechkina — article editing

All authors made significant contributions to the study and the preparation of the article, and they read and approved the final version before publication.

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