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## Report on the work of centers and Associations of Orthopedists-Traumatologists

### Kharkiv regional branch of the Ukrainian Association of Orthopedists-Traumatologists

Scientific-practical online conference within the Traumatologist's Day, dedicated to the 100<sup>th</sup> anniversary of the Department of Traumatology and Orthopedics of Kharkiv National Medical University, 18.02.2021

**H. H. Holka, A. H. Istomin, M. I. Berezka, V. O. Lytovchenko** (Department of Traumatology and Orthopedics, KhNMU) «Historical aspects of the Department of Traumatology and Orthopedics of KhNMU». The Department of Traumatology and Orthopedics of Kharkiv National Medical University (KhNMU) is the oldest among the profile departments of higher educational institutions not only in Ukraine but also in the entire post-Soviet region. The authors noted the high level of lectures by Prof. A. K. Struve (1843) on desmurgia, textbook by Prof. P. A. Naranovich (1849), as well as scientific work in the field of orthopedics and traumatology Prof. V. F. Grube (1863) and his student Prof. O. I. Dudukalova (1882), graduates of the surgical clinic of the Imperial University. They were at the origins of the founding of such an association of teachers at Kharkiv University, which later trained specialists in orthopedics and traumatology. The history of the department (from the memoirs of V. D. Chaklin «Life, Quests, Meetings», 2000), milestones and stages of development, changes in research depending on who heads and leads the «ship». In particular, at the initiative of Prof. K. F. Wegner, a prominent domestic specialist in orthopedics and traumatology, organizer and teacher approved the decision to establish two departments of orthopedics and traumatology in January 1921. Prof. S. L. Tregubov was one of the first heads of the department, studied tuberculosis, Associate Professor E. P. Ryumshina (since 1944 after returning from evacuation) proposed to teach classes near the patient's bed; Prof. V. P. Trubnikov (since 1962) dealt with open fractures, complex lesions by chemicals and more. After the relocation of the department in 1977 from the hospital No. 11 to the built ambulance hospital, the main area became traffic injuries. Later, Prof. D. D. Bitchuk was elected head (since 1989), who was a pioneer in the technique of blocking osteosynthesis, dynamized the fusion of the fracture, conducted work in military field surgery and more. The report named many professors, associate professors, assistants, teachers and students who worked devotedly at the department and became famous doctors and scientists. Since 2008 the department is headed by Prof. H. H. Holka, with work being carried out on two bases: ambulance hospital and regional clinical hospital. During his time, the range of research on bone and joint tuberculosis was expanded, surgical activity in the field of vertebrology, joint arthroplasty, pelvic surgery, etc. was intensified. Photos of the staff of the department are given. New teaching methods used in the pandemic era of the 21<sup>st</sup> century are discussed.

**H. H. Holka, V. V. Vesnin, A. O. Oliynyk, M. A. Garkusha, D. A. Istomin** (Department of Traumatology and Orthopedics, KhNMU) «Experimental studies of bone and joint tuberculosis at the present stage of medi-

cal development». It is noted that the first experimental model of osteoarticular tuberculosis (OAT) in the former Soviet Union was created by Prof. Alexei Petrovich Skoblin at Prof. M. I. Sytenko Institute (late 1940s — early 1950s). Leningrad Institute of Surgical Tuberculosis (LIST) has long been the center of OAT in the post-Soviet space, but after the merger of LIST and LIPP (Phthisiopulmonology), efforts in the late 1990s focused on the study of pulmonary tuberculosis. The authors emphasized the importance of the created experimental models of OAT, which are needed not only to study the peculiarities of the process and the impact of antibacterial therapy, but also to develop modern approaches to the diagnosis and treatment of the disease. The authors described in detail the results of experiments on two models: tuberculosis of the knee joints of guinea pigs to verify the possibility of polymerase chain reaction (PCR); tuberculous spondylitis (TS) to study the effects of antibacterial drugs. The research was conducted at the Research Institute of Experimental and Clinical Veterinary Medicine (photos of animals, macropreparations, radiographs, histological specimens are given). High specificity of PCR in the diagnosis of TS and high diagnostic sensitivity of the test (80 %), which together with the low cost makes it possible to recommend it for tuberculous joint disease. Carrying out modern intensive specific antibacterial therapy in the conditions of the experiment allows to achieve the delimitation of the destructive process in the early stages of the disease (4–5 weeks). The new knowledge about the pathomorphological features of the TS allows radical surgery on the spine without the risk of generalization of the tuberculosis process in the early stages.

**H. H. Holka, V. V. Burlaka, O. G. Fadeev, V. V. Vesnin** (Department of Traumatology and Orthopedics, KhNMU) «Modern methods of surgical treatment of bone and joint tuberculosis». Open problems of phthisiosteology: resistance of mycobacteria (MBT) to anti-TB drugs, prolonged diagnostic and therapeutic pauses, late verification of a specific process and an increase in the number of patients with osteoarticular tuberculosis (OAT) on the background of HIV infection. The authors drew the attention of the orthopedic and traumatological service to the problems of OAT treatment and shared the experience of its surgical treatment. Over the last 10 years, the overall drug resistance of the service in the case of OAT has increased significantly (from 39.8 to 65.1%). The authors presented the results of surgical treatment of OAT of the spine and large joints in 2012–2019 of 184 patients (mostly with various complications in the form of abscesses, fistulas, contractures, deformities, etc.). Some of them were operated on the basis of the Department of Orthopedics and Traumatology, as there was no epidemiological complexity (without comorbidity). Another group of patients received treatment at the regional tuberculosis dispensary. Experience of surgical treatment of tuberculosis of the spine and large joints with the use of porous ceramic implants (developed at Prof. M.I. Sytenko Institute), sliding cages, immersion structures, etc. was demonstrated in 12 clini-

cal observations. In conclusion, the authors appreciated the positive results of OAT treatment, and addressing the orthopedic community, proposed to establish a national research and practice center in Ukraine to provide highly specialized medical care to patients with OAT to organize sections of extrapulmonary tuberculosis at congresses, conferences and investigate new methods of diagnosis, treatment, study of the epidemiology of the disease.

**H. H. Holka, V. V. Burlaka, V. V. Palamarchuk, M. V. Perkhun, V. V. Vesnin** (Department of Traumatology and Orthopedics, KhNMU, Prof. A. I. Meshchaninov Medical Center) «Optimization of tuberculous spondylitis treatment». Emphasis is placed on the relevance and seriousness of the medical and social problem of etiological diagnosis and surgical treatment of patients with tuberculous spondylitis (TS). The authors presented the results of research in two areas — experimental and clinical. In the first case, the features of the clinical and pathomorphological course of TS and the effect of antibacterial therapy (ABT) were studied. TS modeling was performed according to the developed method (Patent No. 115503) on 40 guinea pigs by introducing a suspension of *m. bovis* strain valle into the body of L<sub>III</sub> vertebra with artificial circulatory disorder (at the Institute of Experimental and Clinical Veterinary Medicine). As a result of the experiment it was found that in animals with simulated tuberculosis secondary to specific ABT reserve series there is suppression of the pathological process with the formation of young bone and connective tissue of different degrees of maturity. New knowledge about the pathomorphological features of TS under the conditions of adequate specific ABT has been received. This allows for radical surgery on the spine without the risk of generalizing the tuberculosis process in the early stages. The clinical study involved 60 patients with active TS who received treatment at Prof. M. I. Sytenko Institute in 2012–2017. The effectiveness of short-term intensive ABT with second-line drugs in the preoperative period and radical-decompression plastic interventions using a sliding titanium cage for anterior spondylodesis was studied. Patients in the main group were fitted with a sliding telescopic titanium cage, and the operation was performed after a short intensive course of ABT. Clinical examples of treatment of patients with TS of the main and control groups with excellent treatment results of 46.7 and 26.7 %, respectively.

**H. H. Holka, V. V. Burlaka, V. V. Palamarchuk, M. V. Perkhun** (Department of Traumatology and Orthopedics, KhNMU, MNPE «Prof. A.I. Meshchaninov City Clinical Hospital of Ambulance and Emergency Medical Care») «Own experience of hip arthroplasty». The report presents the results of hip arthroplasty of 286 patients for the period from November to January 2021 (average age 66 years). Surgical interventions for acute injuries were performed on 179 subjects, for consequences of injuries and diseases in 107. Cement total endoprosthetics in 141 cases, cement bipolar in 19, cementless in 123, hybrid in 3. Complications of surgical interventions are covered in detail, 4 lethal cases, 7 dislocations in the hip joint, contractures, pain, early and late deep infectious complications, etc. The results of treatment were classified as good in 272 patients (95.1 %), satisfactory in 5 (1.7 %), unsatisfactory in 9 (3.1 %).

Meeting of 18.03.2021

**I. I. Spesyvy** (Expert of the Department of Health of KhRSA in the field of «Orthopedics and Traumatology») «Results of the orthopedic and traumatological service of the Kharkiv region in 2020». The author analyzed the main indicators of orthopedic and traumatology de-

partments of Kharkiv and Kharkiv region. Due to the coronavirus pandemic, the bed stock decreased by 65 units in 2020 (658 orthopedic and traumatology beds for adults in the medical institutions of Kharkiv Regional State Administration and the Department of Health of KhCC), which is due to the need to establish departments for the treatment of patients with COVID-19. Of the 28 districts of the region, trauma beds operate only in 15. There is also a decrease by 4,000 treated patients compared to 2019. Indicators of general injuries (home and industrial injuries, accidents), primary disability due to injuries of the musculoskeletal system. Inpatient care in the treatment and prevention facilities of Kharkiv and Kharkiv region in 2020 has been analyzed in detail. It is determined that during the reporting period the number of performed operations, namely knee and hip arthroplasty, increased in 4 medical institutions of Kharkiv (849 operations in Regional Clinical Hospital, Regional Clinical Traumatology Hospital, City Clinical Multi-Specialty Hospital No. 17, Prof. A. I. Meshchaninov City Clinical Hospital of Ambulance and Emergency Medical Care).

**I. I. Bilokonov** (Expert of the Department of Health of KhRSA in the field of «Pediatric Orthopedics and Traumatology») «Results of the Children's Orthopedic and Traumatology Service of Kharkiv region in 2020». The report analyzes the indicators of providing the child population of Kharkiv and Kharkiv region with orthopedic and trauma beds and staff in 2020. The reduction of child injuries in 2020 by about 15-20% is compared to the previous year due to the declared pandemic and lockdown. It has been noted that the ban on planned surgical and conservative treatment and the failure of the system of recording episodes of patient care through a special application on the Internet have led to a decrease in the schedule of doctor's appointments. There was also a decrease in the influence of regional specialists (including the control of self-reports) on the receipt or confirmation of the category by doctors. The indicators of injuries and prevalence of musculoskeletal disorders among the pediatric population were analyzed according to the appeals to children's medical institutions of Kharkiv (home trauma, street, sports, school, road accidents, etc.).

**V. A. Filipenko** (Chairman of Kharkiv regional branch of the Ukrainian Association of Orthopedists-Traumatologists) «Report on the activities of Kharkiv regional branch of the Ukrainian Association of Orthopedists-Traumatologists for 2020». The report highlights the scientific, practical and organizational activities of the Board and members of the Ukrainian Association of Orthopedists-Traumatologists for 2020. During the reporting period, 2 meetings of the center were organized and held offline and 6 news releases were made on the Association's website. On 16 January 2020, a meeting was held in the building of Kharkiv Medical Society with lectures by leading specialists: Prof. M. L. Golovakha. (Zaporizhia), Prof. A. G. Istomin (Kharkiv), Prof. P. I. Belinsky (Kyiv).

On 20.02.2020 within the day of the orthopedist-traumatologist a scientific-practical conference was held on the basis of the Department of Emergency Traumatology and Reconstructive Surgery of the State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine», dedicated to the 75<sup>th</sup> anniversary of the birth of Prof. L. D. Goridova. Patients were examined and 59 patients were consulted. 6 blocks of news are posted in the mode of viewing reports-presentations on the website of the Branch ([www.uaot.kharkiv.ua](http://www.uaot.kharkiv.ua)): 19.03.2020 — reports on the Branch's work for 2019 (3 reports); 16.04.2020 —

City Clinical Multi-Specialty Hospital No. 17 (3 reports); 21.05.2020 — Regional Clinical Traumatology Hospital, meeting dedicated to the 100th anniversary of the opening of the children's orthopedic department in Kharkiv (5 reports); 17.09.2020 — Prof. A.I. Meshchaninov City Clinical Hospital of Ambulance and Emergency Medical Care, Department of Polytrauma (2 reports); 19.11.2020 — Department of Spine Abnormalities, «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine», dedicated to the 85<sup>th</sup> anniversary of the birth of Prof. G. H. Gruntovsky (5 reports); 17.12.2020 — joint meeting with the Association of Radiologists (3 reports). Meeting scheduled for 18 June 2020 at the Lozova Territorial Association and the scientific conference «Modern diagnostic methods in orthopedics and traumatology» (Five scientific readings dedicated to the memory of Academician O. O. Korzh) due to quarantine measures postponed to 2021. 189 members of the Center took part in the Days of Traumatologist, held in 2020, 9 reports were given, 21 slide presentations were presented on the website. In 2020, 11 orthopedic traumatologists received a recommendation for certification in order to assign or obtain the highest qualification category. Category was awarded to 2 orthopedists-traumatologists, 9 categories were confirmed. 2 monographs, 20 instructional materials and 163 articles were published with the participation of members of Kharkiv Association in 2020, 15 patents were received, 59 lectures for doctors were given. There were 4 appearances on television, 2 on radio, 7 popular science articles were published in newspapers and 2 magazines.

Meeting of 15.04.2021

In April 2021, on the basis of the Ukrainian Research Institute of Prosthetics, Prosthetic Construction and Rehabilitation, an online scientific-practical conference was held in the format of online/offline «Rehabilitation and Prosthetics/Orthosis of the 21<sup>st</sup> Century. Issues, prospects and international standards for the restoration of physical activity», dedicated to the 75<sup>th</sup> anniversary of the institute. In her introductory speech, the director of the Institute A. D. Saleeva drew attention to the modern format of the event planned on 3 platforms (in three halls) «...where we not only pay tribute to the founders of the institution, but also pass the exam, summing up the work over the past 15 years». Many warm words and congratulations were addressed to the staff of the institute and its director. On behalf of the head of Kharkiv Regional State Administration Aina Tymchuk, her deputy Mykhailo Chernyak read a congratulatory letter. Acting Mayor of Kharkiv Igor Terekhov made a congratulatory speech and noted that the warmth and care of all employees of the Institute really bring people back to active life. Honorary diplomas, gifts, flowers and congratulations from the First Deputy Minister of Social Policy of Ukraine E. D. Kotyk, Director of the Fund for Social Protection of the Disabled E. V. Cheglakova, Chairman of Kharkiv Regional Branch of the Ukrainian Association of Orthopedists-Traumatologists V. A. Filipenko, Director of «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine» M. O. Korzh, representatives of the School of Rehabilitation Sciences Human Study and many others. The solemn part ended with the unveiling of the memorial plaque of Prof. D. O. Yaremenko.

At the plenary session the director of the Institute A. D. Saleeva highlighted in her report the problems and prospects of restoring motor activity of patients, presented international standards of rehabilitation. The fol-

lowing spokespersons presented their reports at the sectional meetings: Prof. O. E. Vyrva, Prof. O. A. Buryanov, Prof. A. P. Lyabakh, Candidate of Medical Sciences I. V. Kabanenko, Candidate of Medical Sciences V. G. Petrov, Candidate of Medical Sciences I. G. Chernyshova, O. S. Istomina, Associate Professor O.A. Dynnik, Candidate of Medical Sciences D. V. Prozorovsky, Doctor of Medical Sciences O. I. Korolkov and others. The reports raised the issue of restorative surgery of the musculoskeletal system in children and adults, the introduction of modern educational standards for training in prosthetics, orthotics and rehabilitation, ways to increase the rehabilitation potential of patients through physical rehabilitation and occupational therapy.

Scientific and practical conference dedicated to the 85<sup>th</sup> birth anniversary of Professor S. D. Shevchenko, 20.05.2021

**G. V. Kikosh** (State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Life and career of Professor S. D. Shevchenko, an outstanding orthopedist-traumatologist». The report highlights the glorious 60-year work of the outstanding orthopedist-traumatologist, scientist and surgeon, Doctor of Medical Sciences, Professor Stanislav Dmytrovych Shevchenko. Having started his career as an oncology surgeon at the mine hospital in Krasnyi Luch, the head of the Department of Pediatric Orthopedics and Traumatology of the State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine» passed the way to the Deputy Director for Research of the Institute and Deputy Editor-in-Chief of the journal «Orthopedics, Traumatology and Prosthetics». Professor S. D. Shevchenko made a significant contribution to the development of domestic pediatric orthopedics, his merits were highly appreciated by the scientific community: he was awarded the Order of Honor, the badge of «Excellence in Health», repeatedly awarded Diplomas of the National Academy of Medical Sciences and the Ministry of Health of Ukraine. Until the last years of his life, the professor did not stop medical work, consulted patients with severe and complex conditions. Thanks to Stanislav Dmytrovych's talent, thousands of young patients regained their health.

**V. V. Baev** (State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints



Picture. Opening of the memorial plaque of Professor D. O. Yaremenko

of the National Academy of Medical Sciences of Ukraine») «Reconstructive and restorative operations in children with bone tumors». The main classifications used in the diagnosis and treatment of bone tumors in children (WHO International Histological Bone Tumors; ICD-10; W. Enneking Surgical and Clinical Statistics), the algorithm of examination of patients are given. According to the Bulletin of the National Cancer Registry of Ukraine, 11–12 cases of malignant tumors per 100,000 children (under 18 years of age), which is about 1,000 children per year, are recorded annually in Ukraine. Of these, 10 % are bone tumors. Methods of replacement of bone defects after removal of tumors, their advantages in the case of deciding on organ-sparing operations, namely: the use of bone allo- and autografts, ceramic materials, modular and allocomposite endoprosthetics. The report is illustrated with 7 clinical examples. The author concluded that pediatric patients with tumors and tumor-like bone diseases are potential candidates for defective plastics with halogen implants, which are most often used by pediatric orthopedists, and the advantages of modular arthroplasty are great variability in design and size, the ability to restore limb function in a short time.

**I. M. Garbuznyak, A. M. Hrytsenko** (State Institution «Professor M.I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Use of perforating blood supply flaps in pediatric orthopedics. Own experience». Perforating flaps are supplied with blood through perforating skin-fascial, skin-muscle vessels (septocutaneous, musculocutaneous) and by the composition of tissues can be skin-subcutaneous, skin-fascial, skin-muscular. The report presents the results of surgical treatment of 9 children aged 4 to 17 years with acquired deformities of the extremities after various injuries for the period 2012–2021. The authors discussed most commonly used types of flaps for the upper and lower extremities, complications and 2 clinical examples with positive treatment results. In the conclusions it is noted that the possibility of using suralis flap in preschool children to cover skin defects of the lower leg and foot has been proved in own experience; posterior interosseous perforator flap of the hand. The introduction of perforating flaps in pediatric practice to cover skin defects significantly improved the functional results of children's treatment.

**I. M. Garbuznyak, A. M. Hrytsenko** (State Institution «Professor M.I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Reconstructive interventions in hypoplasia of the first finger of the hand». The results of treatment of 27 patients aged 1 to 10 years with congenital malformations of the first finger of the hand (I–V types of hypoplasia of the first finger according to Manske in combination with radial strabismus; Mirror hand) for the last 10 years are presented. The report highlighted diagnostic methods and types of surgery used depending on the type of hypoplasia according to Manske (usually Ezaki-Carter pollicization). The findings after evaluating the functional and cosmetic results of treatment of hypoplasia of the first finger of the hand suggest that patients with first-finger hypoplasia and abnormally attached FPL and EPL/AbPl tendons require multi-stage treatment tactics. After pollicization of the second finger, in 100 % of cases the cosmetic appearance improved, in 84.2 % the function of bilateral grip was restored, in 89.4 % the anatomical depth of the newly formed first interdigital space was achieved. There are 3 clinical examples with long-term treatment results.

**S. O. Khmyzov, A. V. Hrytsenko** (State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Achondroplasia — what's new?». The authors presented brief information on current trends in the treatment of achondroplasia and the experience of the clinic of pediatric orthopedics of the State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine». Patients with achondroplasia often consult orthopedists to prolong growth, reduce cosmetic defects and improve the functionality of the extremities. The speaker showed external fixation devices (EFDs) for lengthening of extremities: Ilizarov's device, with mechanical and electric drives. Rod EFD, developed in the Department of Abnormalities of the Spine and Joints in Children by Professor S. O. Khmyzov, with three-point fixation principle used to the maximum, allows to minimize the dimensions of external supports against the background of their high dynamization. The tactics of treatment are covered and 1 clinical example is given.

**O. V. Pashenko, E. S. Katsalap** (State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Application of intramedullary telescopic fixators in various orthopedic disorders in children». The use of rotationally stable intramedullary telescopic fixators (ITF) in the treatment of long bone disorders in children is a very important problem, for half a century its study has allowed to develop many methods and designs to solve it. Experience in the use of proprietary ITFs with rotational stability (Patent of Ukraine 88254; 114597) for correction of long bone deformation in children aged 4–16 years with multiplanar deformities of upper and lower extremities and impaired weight bearing ability is shown (on the example of two groups with imperfect osteogenesis and phosphate-diabetes). The results of treatment, complications and 3 clinical examples are highlighted. It is noted that the use of ITFs for surgical correction of long bone deformities in children is effective and is accompanied by a low percentage of complications.

**O. O. Barkov, E. S. Katsalap, Yu. E. Kolesnichenko** (State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Individual surgical treatment of congenital and acquired spinal deformities in children and adolescents using 3D-navigation and neuromonitoring». The speaker noted that Professor S. D. Shevchenko devoted his practical and scientific activities to the treatment of children and adolescents with spinal deformities. One child can develop several of them — in the frontal and sagittal planes, varying in etiology and severity. The study included 30 patients aged 6–18 years with such deformities as idiopathic scoliosis, congenital kyphoscoliosis, neurofibromatosis, neuromuscular scoliosis, juvenile kyphosis (Scheuermann-Mau disease), spondyloepiphyseal dysplasia, spondyloarthrosis. The authors presented the methods of preoperative examination and noted the importance of computed tomography (CT) to control the transpedicular screws, types of surgery. Positive treatment results are illustrated by 11 clinical examples. Screws were installed in all patients using the Btainlab navigation system in the preoperative CT scan and intraoperative neuromonitoring mode of the Medtronic NIM Eclipse system. The authors consider the best way of treatment to be individual operations performed after a thorough preoperative examination, in accordance with specific types of abnormalities and deformities of the spine in children and adolescents. The use of the latest technologies allows to increase

the effectiveness of treatment, to avoid revision operations related to incorrect placement of screws.

**S. O. Khmyzov, E. Yu. Yakushkin** (State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Instability of the knee joint in children with malformations of the lower extremities». The report presents the concept of «joint instability» in the interpretation of N. V. Fatkullin, D. S. Logerstedt and a team of authors led by H.H. Holka. The disorder is classified as a pathological condition that leads to excessive mobility in the joint and impaired movement biomechanics. The main causes of instability of the knee joint (KJ) in congenital malformations of the lower extremities are as follows: anatomical disorders (isolated agenesis of 3 types of cross-ligaments; complex malformations of the lower extremities) and structural disorders of the KJ. To understand the diversity of abnormalities in the KJ development and to trace the relationship with the formation of crucial ligaments (CLs), the authors propose to return to the ontogenesis of KJ structures described by R. O’Rahilly in 1987, who argued that the development of all organs occurs in the first eight weeks period of embryonic development of the fetus and divided this period into 23 stages. Differentiation of KJ structures begins at stages 17–18, and CLs can appear at stage 20, but more often at stage 21 (the first is the posterior CL, the second is the anterior). At the 23<sup>rd</sup> stage, the KJ is an integral organ. Anterior CL is often classified as hypoplastic or aplastic. It is noted that the body adapts to congenital malformations, and the factors of KJ instability (KJI) are excessive physical activity, injuries, surgical correction of congenital malformations of the lower extremities. A clinical example of a 2-year-old patient with a diagnosis of congenital fibular hemimelia with shortening of the right lower extremity by 5 cm is given. The authors provided a detailed description of the method of surgical treatment, namely extra-articular SUPER knee stabilization by Dr. Paley, used in the Department of Pediatric Orthopedics and Traumatology. Emphasis is placed on the possibility of KJI development due to the variability and complexity of congenital malformations of the lower extremities, multi-stage surgical treatment. Indications for surgery are ineffective conservative treatment of symptomatic KJI, subdislocation or dislocation during or before the extension procedure.

Scientific and practical online conference dedicated to the 100<sup>th</sup> birth anniversary of Professor B. I. Simenach, 17.06.21

**O. P. Baburkina** (State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Bohdan Ilyich Simenach: a life dedicated to science». The author spoke about the versatility and complexity of Bohdan Ilyich Simenach’s path of becoming an orthopedist-traumatologist, and a great scientist and teacher in general. He was educated in the pre-war and post-war years at the gymnasium (1939) and the pedagogical school in Stryi (Poland), at the correspondence department of the chemistry department of Lviv University (1940) and professional medical training courses (1941), Lviv Medical Institute (1943–1947) after graduating from the Department of Pathological Physiology. Then the young specialist worked as a surgeon, chief physician and manager at the hospital in Stebnyk (Lviv region), studied courses in surgery at Leningrad Institute for Advanced Training of Physicians. Mobilization to the ranks of the Soviet Army (1952) and work in various hospitals gave him the opportunity to publish his first findings on the then

interesting problem of gastrectomy. In 1956, at the hospital in Székesfehérvár (Hungary), he encountered a large number of synovitis cases in the army, began to study this problem, and as a major in the Soviet Army, under the guidance of then Associate Professor O. O. Korzh defended his dissertation «Post-traumatic reactive changes in the knee joint (diagnosis, course and treatment)» (1964). After demobilization (1966), Bohdan Ilyich’s career was inextricably linked with Professor M. I. Sytenko Institute, where in 1970 he headed the department of scientific and medical information and the «study group of the knee joint». As a result of research in such areas as systems approach, methodology, conceptual modeling in 1979 he defended his doctoral dissertation «Damage to the burso-ligamentous apparatus of the knee joint. Diagnosis and surgical treatment». Then, studying the physiological and pathological processes in the joint, he created a «semantic model of the joint», «orthopedic arthrology», «syndrome of arthrodesive deformity» (schemes were shown on the slides). Research conducted under the supervision of B. I. Simenach at the essential level has helped to develop concepts about joint disease due to hereditary predisposition, which has made significant adjustments in orthopedic science and practice. The speaker, one of the many students of Professor Bohdan Ilyich Simenach, noted his kindness, sensitivity and responsible attitude to science, which was the basis of his life. Photos of the professor from different years with students, colleagues and the last speech at the conference in 2011 dedicated to the memory of Academician O. O. Korzh, when he could not see well and kept all the slides in his head. Also on the occasion of the 100<sup>th</sup> birth anniversary of Bohdan Ilyich, his students published a bibliographic index of the teacher’s scientific works.

**Yu. M. Gnedushkin, O. O. Kovalchuk, D. I. Chy-mandrin** (CME BCCkHR «Balakliia Clinical Multidisciplinary Hospital of Intensive Care») «Providing orthopedic and trauma care today: opportunities and challenges». In the report, the authors proposed to return to the origins — the beginning of work in the 1980s, when the trauma department of Balakliia Hospital had 65 beds, and one of the main methods of treatment was skeletal traction. The authors also reminded of the beginning of cooperation with the Society of Orthopedists-Traumatologists and the first Visiting Day of Traumatologists in 1984 in Balakliia. Many manifestations of the then osteosynthesis (bone, intramedullary, extrafocal), which was constantly evolving and modified, including D. D. Bitchuk’s fixators (prototype of blocked intramedullary osteosynthesis — BIOS) were demonstrated. The work at the present stage, the difficulties under the conditions of the reform and the lack of funding for consumables, metal structures and endoprotheses, the provision of adequate care to patients who cannot pay for the device. The speaker cited many interesting clinical cases of treatment of skeletal bone fractures, in particular, acetabular, using different metal structures based on the principles of BIOS with positive treatment results. It has been determined that the 30-bed trauma department is currently optimizing the treatment process — reducing its duration, increasing surgical activity, which allows the hospital to have a CT scanner, electron-optical transducer and X-ray contrast table in the operating room. Introducing minimally invasive methods of treatment of orthopedic pathology, arthroscopy has become a «signature line» of the department. In 2 months there will be the 30<sup>th</sup> anniversary of the first arthroscopic operation, which was attended by B. I. Simenach together with his «study group of the knee joint». Over the years, more than

4,000 arthroscopic interventions have been performed, cooperation has been established with leading specialists of arthroscopic centers (Norway, Israel, Germany, Great Britain, Spain, etc.) with whom we had to communicate and learn a lot, called «Our Youth Team» (O. O. Korzh, B. I. Simenach, V. A. Filipenko, Yu. M. Gnedushkin, etc.). The speaker expressed his gratitude to the people, thanks to whom «we have the opportunity to provide patients with adequate medical care in modern conditions, without losing self-respect».

**P. V. Bolkhovitin, S. O. Nesterenko, Yu. M. Gnedushkin, M. P. Bolkhovitin** (State Institution «Professor M.I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine», CME BCKhR «Balakliia Clinical Multidisciplinary Hospital of Intensive Care») «Syndrome of imbalance of the knee cap of dysplastic origin: past, present, future». The report provides information on a systematic approach to the treatment of knee instability, developed by Professor B. I. Simenach. This is a conceptual modeling, methodology, technology, as well as a five-factor conceptual model of the joint, which can be applied to the syndrome of imbalance of the knee cap of dysplastic origin (SIKCDO). A parallel was drawn with the Leon School of Orthopedic Traumatologists (France), currently represented by David Dejour, former president of ESSKA (European Society of Sports Traumatology, Knee Surgery and Arthroscopy), founder of A la carte surgery and dysplasia classification. Their ideas resonate and are an element of the systemic approach promoted by B. I. Simenach. The spokesperson highlighted the methods for SIKCDO diagnosing at the present stage, using new criteria (Insall-Salvati, Caton-Deshamps, TT-TG), symptoms (J-symptom, Q-angle, Zohlen) and approaches, as well as the main surgical interventions for knee instability — lateral recovery, trochleoplasty, etc. The speaker focused on the various arthroscopic manipulations that are performed today during surgery for knee instability; arthroscopic control at the time of surgery, as well as the impact of arthroscopy on articular cartilage. Three clinical examples with positive treatment results are shown. The authors stressed the importance of medical support of arthroscopic interventions in SIKCDO treatment — a symptom-modifying drugs of slow action for the treatment of osteoarthritis, including chondroitin sulfate.

**P. V. Bolkhovitin, M. P. Bolkhovitin** (State Institution «Professor M. I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Restoration of the medial patellar-femoral ligament in the treatment of knee cap instability syndrome of dysplastic origin». Today, knee cap instability requires a huge number of surgeries: endoscopic, MPFL ligament restoration, trochleoplasty, medialization and hump reduction, knee edge resection, osteotomy, etc. The authors discussed own experience of SIKCDO treatment is offered for consideration: «gold standard» operation provides rather considerable stability and is performed in 80 % of cases. Plastic materials (auto- or allografts MPFL, MTFL), methods and principles of such operations, the importance of determining the anatomical coordinates of the point of attachment of the graft to the femur (based on the concept of Professor B. I. Simenach and the theory of German orthopedist Schotle), labeling, radiological and arthroscopic control, problems that arise during such operations. Positive treatment results were observed over 2 years, they were evaluated by the Lysholm scale (90–100 points), by the high activity of patients, including athletes.

I. B. Zelenetsky, O. M. Khvysyuk, S. B. Dovgan, Yu. I. Volvach (CME KhRC «Regional Clinical Traumatology Hospital») «Modern methods of treatment of knee joint abnormalities in children». The speaker emphasized that the concepts of joint treatment of Professor B. I. Simenach are also used to treat pediatric patients. He presented joint research on the pathology of joints in children (dissertations and guidelines). The report provides information on the results of the study, which aimed to analyze the results of surgical treatment of injuries and diseases of the knee joint in children according to the pediatric orthopedic and traumatology departments of CME KhRC «Regional Clinical Traumatology Hospital» (114 patients aged 7–14 years). Examination methods, own tactics and techniques for meniscus rupture (29 children), anterior cruciate ligament (21), traumatic and dysplastic knee cap instabilities of varying severity (21, including patients with cerebral palsy, knee cap instability due to patellofemoral joint dysplasia, in the case of Rubinstein-Taby syndrome, etc.), are covered. It is concluded that arthroscopic interventions in children can solve most problems in the case of intra-articular injuries of the knee joint and frontal knee cap instability of mild degree. Indications for surgery are based on a carefully collected history, a comprehensive clinical and MRI examination to determine the degree of damage and dysplasia of the knee joint. To restore normal biomechanical relationships in the knee joint, eliminate the syndrome of lateral hyperpression and remove the increased load from the knee, the authors supplement the typical surgery with plastic repair of the mediopatellar ligament using anchor structures.

**O. O. Kovalchuk, Yu. M. Gnedushkin, O. V. Tankut, O. P. Marushchak** (CME BCKhR «Balakliia Clinical Multidisciplinary Hospital of Intensive Care», State Institution «Professor M.I. Sytenko Institute of Abnormalities of the Spine and Joints of the National Academy of Medical Sciences of Ukraine») «Hip arthroplasty in Balakliia Clinical Multidisciplinary Hospital of Intensive Care — new issues in the organization of orthopedic and trauma care. Reasons, conditions, opportunities». The region has been a place and base for testing various new high-tech treatments, such as arthroscopy and osteosynthesis. Back in the 1980s, O. O. Korzh and V. A. Filipenko were at the origins of endoprosthetics in Balakliia Central Regional Hospital (slide with a photo of the first operation). Due to the irresistible desire to learn something new and improve their professional level, such operations began to be performed in 2019 to provide modern, innovative and high-tech care in the hospital of the 2<sup>nd</sup> level and qualified medical care under new conditions of National Health Service of Ukraine funding. Cooperation with Professor M. I. Sytenko Institute and Motor-Sich Clinic (Zaporizhia) allowed to conduct training, practical courses and joint operations, both in Balakliia Clinical Multidisciplinary Hospital of Intensive Care and at training bases. The process of scientific and technical support took place in direct contact with the staff of Professor M. I. Sytenko Institute, headed by the director Professor M. O. Korzh, head of the department of orthopedic arthrology Professor V. A. Filipenko and a leading specialist of Motor-Sich Clinic Professor M. L. Holovakha. In recent years, 17 patients have been operated on in Balakliia Clinical Multidisciplinary Hospital of Intensive Care using single-pole bipolar, total cement or cementless endoprosthetics, acetabular plastics and osteosynthesis of its fractures. In conclusion, the authors focused on the priorities of their work: a high level of specialized assistance available to all categories of the population; constant training and mastering of new skills; patient supervision; evaluation of work and improvement of treatment results; compliance with world standards when planning endoprosthesis and patient rehabilitation operations.

Chairman      **V. A. Filipenko**  
Secretary      **S. Yu. Zolotareva**