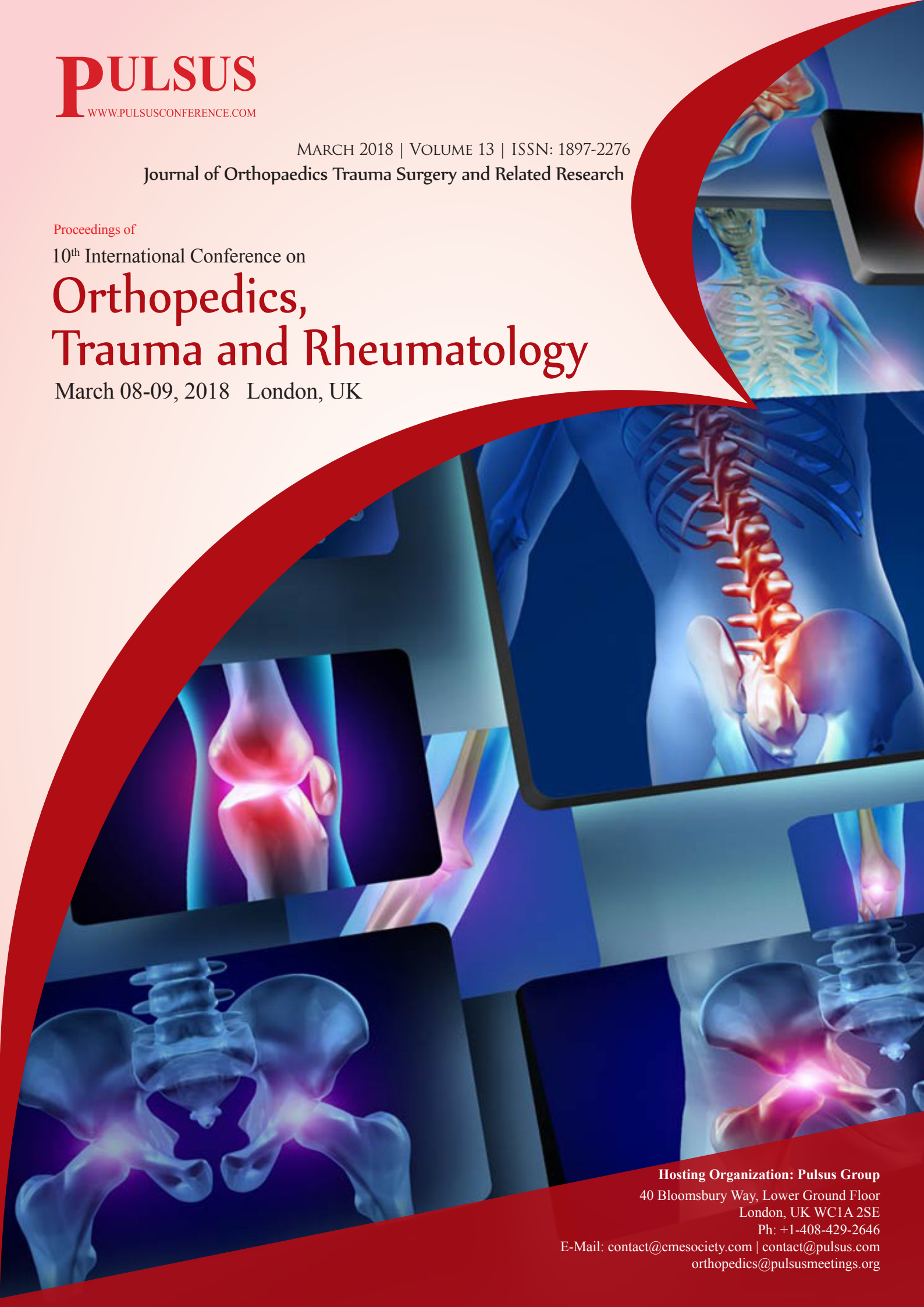


Proceedings of

10th International Conference on

Orthopedics, Trauma and Rheumatology

March 08-09, 2018 London, UK



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Keynote Forum Day 1



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Diana Hodgins

European Technology for Business Holdings Ltd, UK

Changing the care pathway for hip and knee replacement patients

People with late stage hip or knee osteoarthritis may receive a joint replacement to relieve pain and improve mobility. The operation is considered a success, with regard to patient reported outcomes. However, studies using GaitSmart on hip and knee replacement patients one year post op show that less than 50% return to a normal gait and that these gait deficiencies can result in osteoarthritis in other joints, poor mobility and even falls if not corrected. People adapt their gait due to pain in the arthritic joint. Once the joint pain is gone, the patient needs retraining to walk correctly and weakened muscles strengthened. The current care pathway provides patients with physiotherapy for up to 6 weeks post op, guiding the patient to move the joint and become mobile. However, as it takes 10 weeks for the process of muscle strengthening to start, patients are signed off before gait retraining can really start. Patients are unaware of how they have adapted their gait; for example, excessive medial-lateral movement of the thigh i.e. swinging the leg around the body rather than under the body. Therefore, the walking pattern remains the same, loading other joints incorrectly and poor use of their muscles. This paper proposes a new care pathway for patients, where gait kinematics is measured in the outpatient clinic using inertial sensors. A report describing the gait deficiency and the severity, using simple traffic light coding, together with a personalized exercise program is provided to the patient at the end of their 15 minute session. Tests performed at 6, 12, 24 and 52 weeks post op monitor progress and allow the exercises to become more demanding as the patient improves. Evidence of the clinical efficacy of this approach will be presented.

Biography

Diana Hodgins has obtained her degree in Mechanical Engineering and her PhD in Solid State Gyroscopes from the University of Hertfordshire (UH). She has 30 patents granted on solid state sensors and more recently on medical applications relating to the use of these sensors. In 2000 she was awarded an MBE for services to SMEs in the region and in 2002 she won the Women Inventor of the Year Award for Industry. In 2005 she was awarded an Honorary Doctorate from the UH for services to innovation.

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Jike Lu

Beijing United Family Hospital, China

The highly variable typologies of posterior malleolus fractures of the ankle

Objectives: Although historical studies frequently classify Posterior Malleolus Fractures (PMFs) according to fragment size, our hypothesis is that PMFs have more complex patterns than is widely recognized. None of the studies so far have provided a comprehensive picture of the complexity of PMFs or guidelines for surgical decision making. The optimal management of PMFs is still unclear. This study aims to look at the typology of PMFs using a combination of initial injury radiographs, preoperative Computed Tomographic (CT) scans, and intra-operative Image Intensifier (II) screening, as well as fixation technique and a surgery fixation approach, in order to gain insight into PMFs.

Methods: Between 2013 and 2015, 56 consecutive patients, all with bi- or tri-malleolar fracture or dislocation of ankle joints, with one or more posterior fragments, who were treated at our institute, were identified. We retrospectively analyzed the patients' preoperative initial injury radiographs, CT scans and II data to see the stability of the ankle joints in coronal and sagittal planes and look at the typology in relation to fracture fixation technique and surgery fixation approach.

Results & Conclusion: Bi- or tri-malleolar fractures of the ankle with associated posterior malleolar fractures appear to be highly variable. We identified certain types of PMFs which we can categorize. Ankle stability in the coronal and sagittal planes on initial injury radiographs, intra-operative II and preoperative CT scans are critical in order to identify different PMFs patterns. PMFs have highly variable typology regardless of fragment size and this must take into consideration when deciding treatment plans.

Biography

Jike Lu has completed his 5 years Orthopedic Specialist training under Australia Orthopedic Association. At the same time, he has served in the Department of Orthopedic Surgery at Taree Hospital in New South Wales, Australia. He has completed his Doctorate at the University of New South Wales in Sydney. After completing his Orthopedic Surgery training and accreditation in Australia, he accumulated 10 years of extensive experience in orthopedic trauma, tumors, joint replacement, and spinal surgeries. He has served in numerous hospital institutions in Melbourne and Sydney.

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Takatomo Mine

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A kinematic analysis in posterior-stabilized total knee arthroplasty during activities of daily living

Background & Aim: Stair stepping motion and standing and sitting motion from a chair are important in daily living, similar to gait. It is important to understand *in vivo* kinematics of patient's with total knee arthroplasty during stair-stepping and standing and sitting motion from chair. The purpose of this analysis was to estimate *in vivo* knee motion in stair stepping and standing and sitting motion from a chair, and determine if this unique knee prosthesis function as designed.

Methods: A total of 20 patients implanted with Bi-Surface PS were assessed in stair-stepping. 15 patients were assessed in standing and sitting from chair. The Bi-surface PS knee is a posterior-cruciate substitute prosthesis with a unique ball-and-socket joint in the mid-posterior portion of the femoral and tibial components. Patients were examined during stair stepping and standing and sitting motion from a chair motion using a 2-dimensional to 3-dimensional registration technique.

Results: In stair-stepping, the kinematic pattern in step up was a medial pivot, in which the level of antero-posterior translation was very small. In step down, the kinematic pattern was neither a pivot shift nor a rollback. From minimum to maximum flexion, anterior femoral translation occurred slightly. In standing and sitting from a chair, from minimum to 30° knee flexion, anterior femoral translation occurred slightly. From 30° knee flexion to maximum flexion, the kinematic pattern was a medial pivot and rollback.

Conclusion: It became clear in this study that the joint's stability during stair-stepping was affected by the design of the femorotibial joint rather than Post/Cam engagement or the Ball & Socket joint. In standing and sitting from a chair, the unique knee prosthesis functioned as designed.

Biography

Takatomo Mine is currently an Associate Professor in the Department of Orthopedic Surgery, Yamaguchi University. He is the Director of Orthopedic Surgery and Rheumatology at Kanmon Medical Center, Yamaguchi and also a Member of various associations. He has published around 35 articles in various international journals in the field of orthopedics.

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Keynote Forum Day 2



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Esra Kupeli Akkol

Gazi University, Turkey

An overview on the natural compounds from plants used in Turkish traditional medicine for the inflammatory diseases

Inflammation is a part of the complex biological responses of vascular tissues to harmful stimuli, such as pathogens, damaged cells or irritants. The inflammatory response has long been compartmentalized into several aspects commonly termed blush, heat, pain, edema and loss of joint function. Acute and chronic inflammations are complicated processes induced by prostaglandins, leukotrienes and platelet-activating factor. On the other hand, persistent inflammatory stimuli or dysregulation of mechanisms of the resolution phase can lead to chronic inflammation. The non-steroidal anti-inflammatory drugs (NSAIDs) are one of the categories of drugs which most frequently used by population. Even though they provide symptomatic relief for the patients, they don't modify the pathogenesis of inflammation and don't reduce the disabling bone and cartilage damage. Therefore, new initiatives are needed in the treatment of chronic inflammation. Medicinal plants have been the main remedy to treat various ailments for a long time and nowadays, many drugs have been developed from traditional medicines. During the last decade, studies on *in vitro* and *in vivo* models of inflammation have led to the identification of a variety of natural extracts with proven anti-inflammatory activities. Although the anti-inflammatory functions of these natural extracts were initially described, the key role of this activity was showed with follow-up phytochemical and pharmacological studies that led to the identification and characterization of a variety of natural active compounds. Moreover, the molecular mechanisms described in animal models have also provided a basis for their potential clinical translation. This presentation focuses on our current knowledge of plants which have anti-inflammatory activity and discusses their potential therapeutic usage in patients with inflammatory diseases. This lecture will provide an overview about the chemistry and bioactivity studies performed on Turkish medicinal plants.

Biography

Esra Kupeli Akkol has received her Bachelor of Science degree in Faculty of Pharmacy, Gazi University, Turkey and her PhD degree in Pharmacognosy Department from the University of Gazi. She is currently a Professor in the Gazi University, Faculty of Pharmacy, Department of Pharmacognosy. She has served in many capacities in her field including service on several Editorial Boards and numerous Review Committees for journals such as Journal of Ethnopharmacology, Journal of Pharmacy Sciences, The Internet Journal of Herbal and Plant Medicine, International Journal of Genuine Traditional Medicine, Advances in Pharmacological Sciences, Evidence Based Complementary Alternative Medicine and The Open Pain Journal. She has 149 published articles in SCI international journals, 13 articles in national journals and 9 chapters in international books.

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Wasim Khan

University of Cambridge, UK

Recent advances and developments in knee surgery

In recent years there have been many advances and developments in all orthopedic disciplines and knee surgery is no exception. These advances and developments in knee surgery have been due to our better understanding, and in turn better management of arthroses, fractures, and ligamentous injuries of the knee. These have been coupled with advances in our understanding of biomechanics as well as joint and ligament reconstruction, and arthroscopic surgery. Aspects of these important developments will be included in this session.

Biography

Wasim Khan is a University Lecturer and Honorary Consultant Trauma and Orthopedic Surgeon. He is based at the University of Cambridge and Addenbrooke's Hospital that is a level 1 Trauma Centre. He has completed an Orthopedic Academic Higher Clinical Training program in London where he was a Lecturer from 2010-14. He has completed national and international clinical and research fellowships. He has over 15 years of experience in the diagnosis and management of soft tissue, fractures and musculoskeletal injuries. His current clinical practice routinely involves management of upper and lower limb trauma. He has a special interest in lower limb and knee trauma with his elective interests being knee surgery, including arthroscopic surgery, joint replacements and revision arthroplasty. He has a special interest in tissue regeneration and aims to explore better ways of treating chondral lesions. He has authored over 250 papers, 50 chapters and 5 books.

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