Managing the Chaos: Rehab of Multiple Ligament Knee Injuries

APTA Combined Sections Meeting – San Antonio Texas, 2017

Speakers:

• James J. Irrgang, PT, PhD, ATC, FAPTA; University of Pittsburgh, Pittsburgh, PA
  o Dr. Irrgang is the Director of Clinical Research and Professor in the Department of Orthopedic Surgery at the University of Pittsburgh School of Medicine. His research interests include development and validation of patient-reported outcome measures as well as clinical trials and outcomes research related to the knee and shoulder. Currently Dr. Irrgang is the corresponding co-Principal Investigator of an NIAMS-funded randomized clinical trial to compare single- vs. double-bundle ACL reconstruction and the Principal Investigator of a study to provide validity evidence for the PROMIS pain interference and physical function computer adaptive tests (CATs) for individuals with a variety of knee conditions. Dr. Irrgang is the Principal Investigator of a DOD Funded Planning Grant to create a multi-center network for the investigation of outcomes after multiple ligament knee injuries, which will ultimately result in the above described randomized clinical trial. Dr. Irrgang has a secondary appointment in the Department of Physical Therapy at the University of Pittsburgh School of Health and Rehabilitation Sciences where he teaches in the evidence-based practice series in the Doctor of Physical Therapy degree program and in the University of Pittsburgh Clinical and Translational Institute. In January 2015, Dr. Irrgang was appointed Assistant Dean for Medical Student Research in the University of Pittsburgh School of Medicine. Dr. Irrgang served as President of the Orthopaedic Section of the American Physical Therapy Association from 2007 to 2013 and is currently the Scientific Director of the American Physical Therapy Association Physical Therapy Outcomes Registry.

• Andrew D. Lynch, PT, PhD; University of Pittsburgh, Pittsburgh, PA
  o Andrew Lynch is an Assistant Professor of Physical Therapy at the University of Pittsburgh with a history of research publications and presentations about rehabilitation of knee joint injuries. Dr. Lynch serves as the Chair of the Rehabilitation Committee for the Surgical Timing and Rehabilitation (STaR) Trial for Multiple Ligament Knee Injuries. Dr. Lynch is a member of the APTA, including section memberships in the Sports, Orthopedic, and Research Sections. Dr. Lynch is currently investigating the decision making processes for individuals with anterior cruciate ligament injuries in addition to his work with MLKIs.

• Lane Bailey, PT, PhD; Memorial Hermann’s Ironman Sports Medicine Institute, Houston, TX.
  o Dr. Bailey is the Director of Research and Education at the Memorial Hermann Ironman Sports Medicine Institute and an Assistant Professor in the Dept. of Orthopedic Surgery at the University of Texas Medical School in Houston, TX. He completed his PhD in Exercise Physiology from the University of South Carolina and has been involved in studies funded by the American Physical Therapy Association, U.S. Department of Defense, National Athletic Trainers Association, and Major League Baseball. Dr. Bailey has publications in peer-reviewed journals related to the treatment of athletic injuries and is currently focused in ongoing research for the endurance athlete and rehabilitation outcomes following ligamentous knee reconstruction. He has lectured nationally on topics related to the shoulder, knee and rehabilitation utilization of ultrasound imaging. He is a member of the APTA Sports & Orthopedics Sections, and is currently serving as the Research Chair for the American Society of Shoulder and Elbow Therapists.

• Travis Burns, MD; San Antonio Military Medical Center, San Antonio, TX
  o Travis C. Burns, MD is a Lieutenant Colonel in the U.S. Army Medical Corps and the Chief of Sports Medicine and at the San Antonio Military Medical Center. Dr. Burns attended medical school at the University of Texas Health Science Center, completed his Orthopaedic Surgery Residency at the Brooke Army Medical Center in San Antonio, Texas and is fellowship trained in Sports Medicine through the John A Feagin Jr. Sports Medicine Fellowship in West Point, New York. Dr. Burns served our country as an Orthopaedic Staff Surgeon in Mosul, Iraq from August 2009 to February 2010, at General Leonard
Wood Army Community Hospital in Missouri in 2009-2010, and at NATO hospital in Kabul, Afghanistan in 2016. At the San Antonio Military Medical Center, Dr. Burns provides orthopedic and sports medicine care for both military and civilian patients in the San Antonio area. Dr. Burns currently serves as a site PI for studies related to cartilage injury, surgical training, and in the above mentioned STaR Trial for MLKIs. Dr. Burns has organized and directed local and national education programs for orthopedic surgeons and has authored numerous peer-reviewed papers and podium presentations for military and civilian organizations.

- Johnny Owens, PT; Center for the Intrepid and San Antonio Military Medical Center, San Antonio, TX
  - Johnny Owens BS, MPT is Director of Clinical Education for Recovery Science and a Clinical Researcher at the Center for the Intrepid and San Antonio Military Medical Center and adjunct faculty at the Army Baylor Doctoral Physical Therapy Program. He is the former Chief of Human Performance Optimization at the Center for the Intrepid. He did his undergraduate course work in Biology at The University of Texas at Austin and earned his Masters in Physical Therapy at The University of Texas Medical Branch Galveston. He manages lower extremity trauma and complex foot and ankle injuries of patients returning from the combat zone. He developed the Return to Run Clinical Pathway which focuses on returning service members who have suffered trauma back to high level activity and most recently the application of a novel technique, blood flow restriction training to help restore strength after injuries. He has numerous multi-center research projects involving regenerative medicine, sports medicine and rehabilitation of the combat casualty. He presents extensively on the national stage and his work has been featured in Time Magazine, 60 Minutes, ESPN and Sports Illustrated.

The presenters have no disclosures.

Description: Multiple ligament knee injuries (MLKIs) are challenging and common to athletics, military training, and motor vehicle accidents. Rehabilitation of surgically managed MLKIs is highly variable and depends on the surgical interventions used to stabilize the knee joint. The purpose of this session is to clarify surgical decision making for MLKIs, including the decision to repair, reconstruct, or stage a surgical procedure and how this decision making affects rehabilitation. This session will provide further context through case presentations of rehabilitation for a competitive athlete and tactical athlete. The surgical management and rehabilitation guidelines outlined in this session are the result of an 18 center collaboration to investigate the effects of timing of surgery and rehabilitation for MLKIs funded by the Department of Defense. The rehabilitation trial will test the effects of a criterion-based early rehabilitation protocol versus a standard-delayed rehabilitation protocol, which will be discussed. Time- and criterion-based progression for return to ambulation, strengthening, and activity will be outlined in the context of a clinical trial and illustrated through case examples in an athlete and a soldier. The attendee will be able to directly apply this protocol to an individual after surgery for an MLKI.

Outcome Learning Objectives:

Upon completion of this course, the attendee will be able to:

1. Describe the effects of surgical repair and reconstruction of specific tissues on the immediate post-operative rehabilitation, including weight bearing status, range of motion restrictions, and strengthening limitations.
2. Describe pre-operative rehabilitation, interim rehabilitation for a staged procedure, and post-operative rehabilitation following definitive surgery for a MLKI.
3. Apply criterion-based thresholds for advancing activity after surgery for an MLKI.
4. Apply rehabilitation guidelines to case examples of MLKIs, including the return to sport and return to duty phases of rehabilitation.

Session Outline:

- 15 minutes: Introduction of the Challenge of MLKI Management; Lecture
REFERENCES:


This is a preliminary handout. Full handout will be posted on SPTS website on the CSM handout page on the day of the lecture.