

ISAKOS

ISAKOS NEWSLETTER 2015 • VOLUME II

Current Concepts on Arthroscopy, Knee Surgery & Orthopaedic Sports Medicine



Free Preview
of the ISAKOS
textbook – *Normal
& Pathoanatomy
of the Shoulder!*
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Thank You!

Thank you to all who attended the 10th Biennial ISAKOS Congress in Lyon, France! Lyon was a beautiful backdrop for a very successful ISAKOS Congress, attended by more than 4,000 people! ISAKOS would like to thank all the participants, exhibitors and guests who attended and participated in the 2015 ISAKOS Congress.

ISAKOS Congress Program Chair, Anastasios D. Georgoulis, MD, Prof. (Greece), worked diligently with a very diverse Program Committee to develop a fantastic and jam-packed agenda that covered all areas of arthroscopy and sports medicine from turf toe to concussion! More information on the 10th Biennial ISAKOS Congress can be found on page 6 of this Newsletter.

The 10th Biennial ISAKOS Congress also served as the kickoff for the 20th Anniversary Celebration of ISAKOS! We hope all our members have had an opportunity to view the 20th Anniversary publication and reflect on their memories of many years with ISAKOS. The book is available online at www.isakos.com.

As the 10th Biennial ISAKOS Congress has been successfully completed, ISAKOS looks forward to our new projects and initiatives. The ISAKOS Congress brings about a changing of the guard for our ISAKOS leadership, including a new President, Dr. Philippe Neyret. To read Dr. Neyret's inaugural Presidential Message, please see page 2 of this Newsletter.

Of course, ISAKOS is not one to rest on past success—we are already hard at work on the 11th Biennial ISAKOS Congress, to be held in Shanghai, China in June of 2017. Julian Feller, FRACS (Australia) is already working with the Program Committee to develop a full slate of exciting pre-courses, instructional course lectures, symposia and debates for Congress attendees. For a look forward at the ISAKOS Congress in Shanghai, please see page 19.

We hope you enjoy this ISAKOS Newsletter, and as always welcome your feedback—isakos@isakos.com.





Just say “Yes!”

I attended my first ISAKOS meeting in Montreux, Switzerland in 2001. I had started practice the year before and to my surprise, the late Sandy Kirkley from The Fowler Kennedy Sport Medicine Center in London, Ontario, Canada contacted me and asked if I would participate in an Instructional Course Lecture on Research Methodology. I knew almost nothing about ISAKOS at the time and it was a long way to go for a ninety minute course, but I knew it was a great opportunity and that the only answer was “Yes!” At that meeting I met Jon Karlsson and Lars Engebretsen, among other internationally renowned surgeons and researchers. My interest in learning more about different approaches to surgery and cultures from around the globe was stimulated. I haven’t missed a meeting since! I will never forget the opportunity that Sandy gave me, and her premature and accidental death is one of the great personal tragedies in sports medicine.

It is an honor for me to follow the great work of Omer Mei-Dan, James Lubowitz and Ron Selby as prior Newsletter Editors. I hope to continue the high quality of this publication and make it interesting, relevant and appealing to ISAKOS members. We will emphasize learning opportunities at courses, review ISAKOS Fellowship training experiences, discuss interesting cases and thought provoking ideas, and also present information on members and countries from around the world.

The 10th Biennial ISAKOS Congress in Lyon may have been the best yet! For more information on the 2015 Biennial Congress, please see page 6 of this Newsletter. An incredible educational experience with the best food in the world in a gorgeous city... what could be better? The only thing I can think of could be Shanghai in 2017. The 11th Biennial Congress promises more great education, evidence based medicine and camaraderie that ISAKOS is known for around the world. For a preview of the 2017 Congress, please see page 19.

If you are thinking of attending, just say “Yes!”

Robert G. Marx, MD, MSc, FRCSC
New York, New York, USA

ISAKOS Newsletter Editor 2015–2017





Congratulations to the entire membership of ISAKOS on the wonderful success of the recent 10th Biennial ISAKOS Congress, held on June 7–11, 2015 in Lyon, France



The future of ISAKOS is bright!

As the President of ISAKOS, I am grateful for the dedication and hard work of my predecessors Masahiro Kurosaka (Japan), Moises Cohen (Brazil) and all the past Presidents. I am looking forward to continuing ISAKOS' mission to "advance the worldwide exchange and dissemination of education, research and patient care in arthroscopy, knee surgery and orthopaedic sports medicine" in collaboration with the new team of Committee Chairs and the entire ISAKOS membership for my Presidential term 2015–2017.

Special thanks are owed to Tassos Georgoulis (Greece), Julian Feller (Australia) and their extraordinary Program Committee, for creating a diverse and energetic scientific program for participants of all specialties. I would like to offer additional thanks to all paper presenters, and faculty members for making the Congress a diverse educational event, and creating a collaborative, inclusive and interactive atmosphere (not only with the latest communication technology but also with a friendly spirit).

As I enter my term as ISAKOS President, I am occupied with two questions—What is the current situation of ISAKOS, and what projects can we initiate in the coming two years to move ISAKOS forward?

What is the current situation? Today, ISAKOS has a fantastic Executive Leadership group, as well as a superb office, and our financial situation is better than ever. This is a unique opportunity to prepare the future of ISAKOS. The various clinical committees have done tremendous work, and published many booklets under the coordination of Joao Espregueira Mendes (Portugal). ISAKOS is recognized around the world for our high level of scientific content during the Biennial Congress, as well as our publications. Naturally we will continue to develop our strengths.

What projects can ISAKOS initiate during the next years?

One area of particular excitement is the building anticipation for the first issue of the Journal of ISAKOS, scheduled for our first edition in early 2016! Dr. Niek van Dijk has been hard at work as Editor in Chief and has enlisted some of ISAKOS' best and brightest to serve as the inaugural editorial board. JISAKOS will present an authentically global perspective to orthopaedic surgeons and related professionals. As a result, the journal will reflect diverse patient populations, healthcare systems, and clinical preferences. JISAKOS is intended to be directly originated from the society—being conceived, contributed to, and funded by ISAKOS and its members.

In our efforts to plan for the future, the Executive Committee will enlist a Strategic Planning Consultant to lead a retreat in early 2016 to clarify our plans and priorities. A few areas of attention will include:

Partnership with Industry will be different in the next years and we need to be prepared and to take into account not only the new regulations but also to understand the respective roles of the Industry and Society in term of education and resources.

ISAKOS Committee Structure has recently evolved ISAKOS must continue to adapt the structure to best serve our mission. We have restructured the clinical committees and created some new clinical committees, including Knee Arthroplasty and Alternatives, Shoulder, Hip / Groin / Thigh, Elbow / Wrist / Hand and Foot / Ankle. Additional administrative committees have been added, including Archives and Publications to best serve our needs moving forward. We shall also continue to promote a well-balanced geographical representation in the committees. The Communication committee and the office will work to develop a better internal communication with a special mission of liaisons among the committees for General Secretary (Jon Karlsson, Sweden) and Assistant Secretary (David Parker, Australia). For more information on the committee restructure, please see page 4.



Education

ISAKOS constantly seeks to expand our educational offerings to best serve our diverse member populations around the world. Our intention is to reach orthopaedic surgeons around the world, including areas experiencing rapid expansion such as the Middle East, Africa, Indonesia, and China.

Partnerships

ISAKOS will continue to explore methods of partnering with a variety of sports organizations such as FIFA and the IOC to serve our members as team physicians, but also a diverse population of athletes in need of orthopaedic services.

Awards

ISAKOS continues to invest in Awards and Fellowships. Previous winners have enjoyed fruitful achievements, and without any doubt, they will be the leaders in their countries in the coming future. The future is in the younger generation.... they are the fortune of ISAKOS. For more on ISAKOS Award Winners, please see page 8 of this Newsletter.

Finally, Albert Trillat welcomed in Lyon the first International Knee Society meeting in 1970. We have celebrated the 20th Birthday of ISAKOS in Lyon. The next ISAKOS congress will be in Shanghai, China in June of 2017. We hope you will mark your calendars now and plan to join us in China for another exciting, diverse and educational ISAKOS Congress.

You have understood that as President I want to continue to participate in the achievement of the missions of ISAKOS. How can we fulfill our commitments to our members? I want every member to feel comfortable and happy in the ISAKOS family. The voice of each member matters.

In the next two years, we still need the vivid participation and volunteerism from all of our members, by unifying the strength, sharing the values, and keeping the forward-looking mind-set in heart, to do the right things, to shape a bright future for ISAKOS.

I want to thank YOU as a member of ISAKOS for your enthusiasm, support and confidence as well as my family for its understanding (not only during the past years but also because during the two next years all my energy, all my time will be dedicated to ISAKOS), the OFFICE for their dedication and the new Executive Committee & Presidential line.

Philippe Neyret, MD

ISAKOS President 2015–2017



01 ISAKOS Presidential Line
G. Poehling, R. Jakob, B. Tietjens,
P. Renstrom, J. Bergfeld, F. Fu,
M. Cohen, M. Kurosaka



ISAKOS Committee Reorganization

ISAKOS is a society built on the dedication and commitment of our wonderful members. Committees are a critical component of ISAKOS and they are the lifeblood for the future. Committees are essential in achieving the vision and mission of ISAKOS. They provide the structure for member involvement and the development of future leaders for the Society.

As the 2015 – 2017 Committee Term begins, ISAKOS has taken the opportunity to reorganize several of the committees to be more specifically defined. Broad committees such as the Knee

and Upper Extremity Committee have been divided into more specific committees related to Sports & Preservation and Arthroplasty, as well as Shoulder and Elbow, Wrist & Hand to assist the committees in producing the best possible outcomes for our members, and by effect, the public at large. We hope these committees will continue to work diligently to accomplish ISAKOS' mission to "advance the worldwide exchange and dissemination of education, research and patient care in arthroscopy, knee surgery and orthopaedic sports medicine.

Board of Directors Including Executive Committee



ISAKOS Around the World!



During the combined Congress of the Asociación Española de Artroscopia and the Sociedad Española de Rodilla (AEA-SEROD) meeting in Madrid in April 2015, Prof. C. Niek van Dijk, Editor of JISAKOS, was appointed as Honorary member of the Spanish Arthroscopy Association (AEA). This is the first time in the existence of the AEA that they decided to appoint an honorary member. With a certificate, Dr. van Dijk also received the gold pin which is reserved for the past presidents of the AEA (Fig. 1).



01

The new Panama Arthroscopy Society has been the creation of few individuals, each united by a common interest in the expanding arena of arthroscopic surgery in this beautiful Central American country. Officially formed in Panama City in May 2015, APA's Founding Members represent but a few of the many individuals around the country who are interested in this evolving area of the Orthopedic surgery (Fig. 2).



02

- 01 Prof. C. Niek van Dijk and Dr. John Bergfeld
02 Panama Arthroscopy Society



MERCI BEAUCOUP!

On behalf of the ISAKOS Executive Committee, Board of Directors and Program Committee, we would like to thank you for attending the 10th Biennial ISAKOS Congress in Lyon, France! ISAKOS celebrated our 20th Anniversary with more than 4,000 attendees—an ISAKOS record!

More than 95 different countries were represented at the ISAKOS Congress! An international event to its very core, the ISAKOS Congress featured more than 910 unique presenters, including faculty, paper and e-poster presenters. I am pleased to confirm that the ISAKOS Congress continues to be a diverse learning opportunity for our participants to interact with some of the best faculty in the world.



It is important to note, nearly 2,350 abstracts were received for consideration for the ISAKOS Congress scientific program. More than 210 were accepted as papers, and nearly 700 were accepted as electronic posters—this represents a less than 40% acceptance rate. This is demonstrative of the competition to participate in the ISAKOS Congress program, and we are thrilled that the ISAKOS Congress is a highly respected and sought after meeting to attend and present at. We sincerely thank all the faculty and presenters who took time out of their schedules to prepare for, and attend the meeting, to provide the best education for our participants!

The ISAKOS Congress also featured three wonderful pre-courses. Designed for those who wished to extend their learning opportunity, the pre-courses focused on a wide variety of topics. On behalf of the more than 1,200 pre-course participants, we thank the chairs! *Advances in the Management of Knee Pathology: ACL, Meniscus, Patellofemoral, Osteotomy, and Chondral Pathology* was led by Elizabeth A. Arendt, MD, (USA), David Anthony Parker, MBBS, BMedSci, FRACS, (Australia) and Willem M. Van Der Merwe, MBChB, FCS, SA Ortho, (South Africa). *International Update on Surgical Controversies of the Shoulder* was led by Guillermo R. Arce, MD, (Argentina), Philippe Hardy, PhD, (France), and Eiji Itoi, MD, PhD, (Japan). Finally, *ISAKOS and FIFA: Challenges in Safety and Health in Football 2015* was chaired by Moises Cohen, MD, PhD, (Brazil), with Joao Espregueira-Mendes, MD, PhD, (Portugal), Jose F. Huylebroek, MD, (Belgium), Bert R. Mandelbaum, MD, DHL (Hon), (USA), Michel D'Hooghe, MD, (Belgium), and Jiri Dvorak Prof., (Switzerland).

ISAKOS was pleased to feature our third *Sports Rehabilitation Concurrent Course*. Chaired by James J. Irrgang PT, PhD, ATC, FAPTA, (USA), Robert F. LaPrade, MD, PhD, (USA), Lynn Snyder-Mackler PT, ScD, FAPTA, (USA), and Erik Witvrouw, PhD, PT, QATAR, the Sports Rehabilitation Concurrent Course gave physicians, athletic trainers, physiotherapists and coaches insight into the management or prevention of injuries to the athlete.

The ISAKOS Program Committee worked diligently to create a program with a variety of preventative, innovative and exciting topics, we are pleased to say we achieved our goal! We hope you enjoyed the 2015 ISAKOS Congress, and took new information home to use in your practice.

I would also like to thank and recognize the ISAKOS Office team, our Audio Visual team, and our Surgical Skills team for their outstanding organization, professionalism and support.

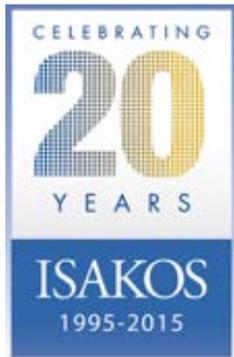
We look forward to the next ISAKOS Congress and the next opportunity to engage in the worldwide exchange and dissemination of knowledge that ISAKOS is famous for.

Masahiro Kurosaka, MD, Prof.

ISAKOS President 2013–2015

Anastasios D. Georgoulis, MD, Prof.

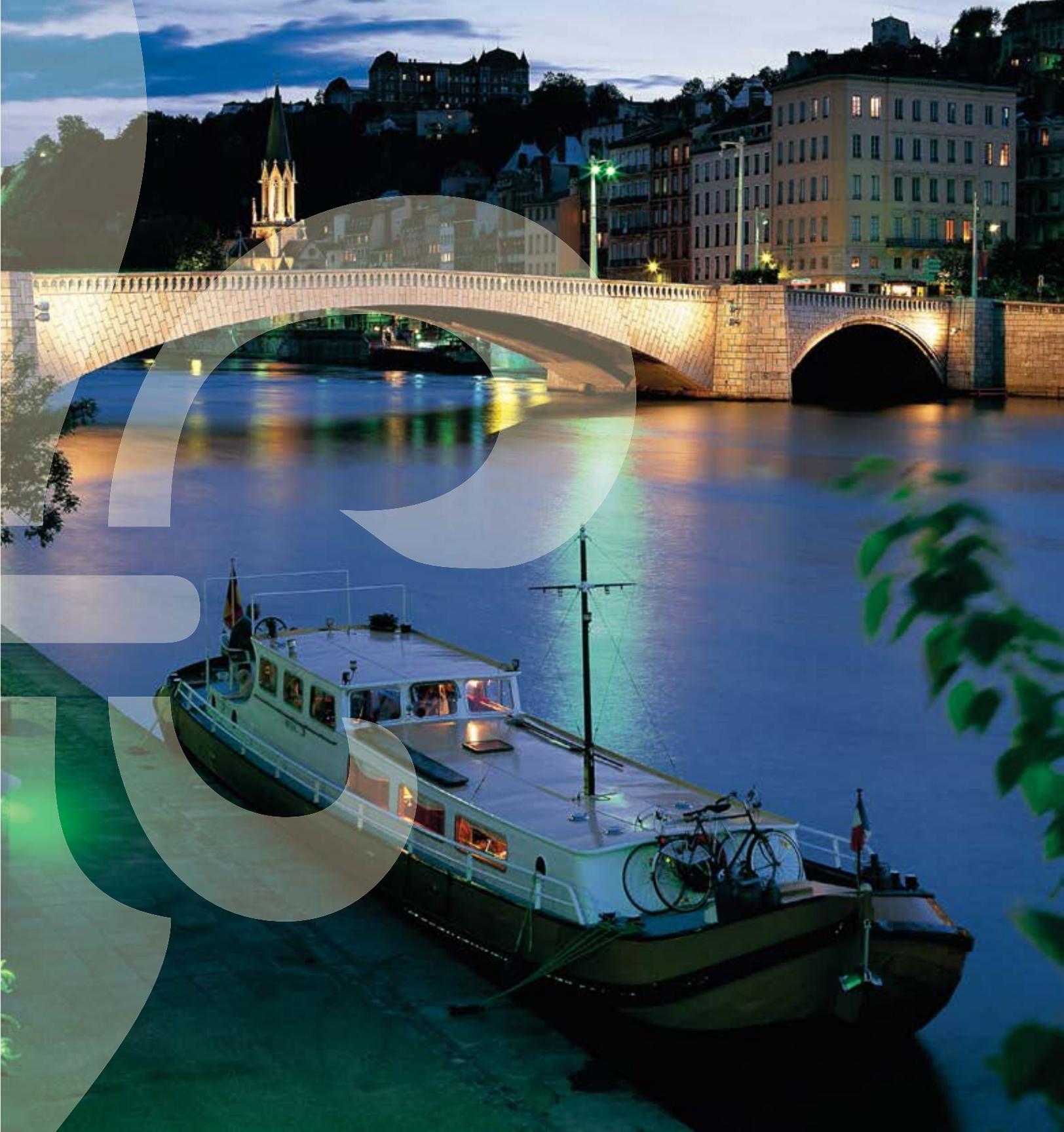
ISAKOS Program Chair 2015



10TH Biennial

ISAKOS CONGRESS 2015

JUNE 7-11, 2015  LYON, FRANCE



ISAKOS Congratulates Award & Fellowship Winners

The International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine proudly presented the following awards at the 10th Biennial ISAKOS Congress held June 7–11, 2015, in Lyon, France.

John J. Joyce Award

SPONSORED BY SMITH & NEPHEW

In 1981, Dr. John J. Joyce, III offered a monetary prize for the best arthroscopy paper read by an orthopaedic surgery resident or fellow during the Scientific Program of the 4th Congress of the International Arthroscopy Association in Rio de Janeiro. With characteristic generosity, he endowed a prize to be awarded at every IAA Congress thereafter. John Joyce created the award with the intention to stimulate and reward younger members who contribute high-quality data and presentations. A committee comprised of members of the ISAKOS Arthroscopy Committee selects first and second place prize-winning papers from manuscripts presented at the ISAKOS Biennial Congress.

1st Place

“A 20 Year Longitudinal Prospective Evaluation of Endoscopic ACL Reconstruction with Patellar Tendon Autograft”

Simon M. Thompson, MBBS, BSc(Hon), MSc MD(Res), FRCS(Tr & Orth), AUSTRALIA

2nd Place

“Evaluation of Risk to the Suprascapular Nerve During Arthroscopic SLAP Repair: Is a Posterior Portal Safer?”

Mark Sando, MD, USA



Richard B. Caspari Award

Beginning at the 2003 ISAKOS Congress in Auckland, New Zealand, a monetary prize in honor of Richard B. Caspari was awarded to the best upper extremity paper read at the scientific program of the Congress. A panel composed of members of the ISAKOS Upper Extremity Committee selects the prize-winning paper read at the ISAKOS Biennial Congress.

1st Place

“Tight Medial-Knot Tying May Increase the Risk of Re-Tearing After Transosseous Equivalent Repair of Rotator Cuff Tendon”

Hiroataka Sano, MD, PhD, JAPAN



2nd Place

“Does Smoking Affect Treatment Allocation and Outcomes in Patients With Rotator Cuff Tears?”

Bruce S. Miller, MD, MS, USA



Scientific Research Award

SPONSORED BY ÖSSUR

Beginning at the 2007 ISAKOS Congress in Florence, Italy, a monetary prize was awarded to the best scientific paper presented during the scientific program of the Congress. A panel composed of members of the ISAKOS Scientific Committee selects the prize-winning paper from manuscripts presented at the ISAKOS Biennial Congress.

1st Place

“In Situ Analysis of Anterior Cruciate Ligament Shape and Morphology”

Eric Thorhauer, BS, USA



2nd Place

“15 Year Survival Of Endoscopic Anterior Cruciate Ligament Reconstruction in Children and Adolescents”

Justin P. Roe, FRACS, A/Prof (UNSW), AUSTRALIA



Albert Trillat Young Investigator’s Award

SPONSORED BY STRYKER

Established in memory of Professor Albert Trillat, past President and founder of the International Society of the Knee, this award provides recognition for a young researcher who has done outstanding clinical laboratory research contributing to the understanding, care or prevention of injuries to the knee. A panel composed of members of the ISAKOS Knee Committee reviews the award applications and the winning manuscript is presented at the ISAKOS Biennial Congress.

2015 Winner

“The Role of the Anterolateral Structures and the ACL in Controlling Internal Rotational Knee Laxity”

Christoph Kittl, MD, AUSTRIA



Achilles Orthopaedic Sports Medicine Research Award

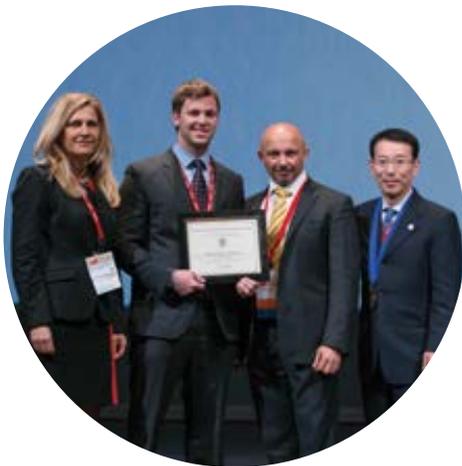
SPONSORED BY DJO GLOBAL

This ISAKOS award recognizes researchers who have done outstanding clinical or laboratory research in the field of sports medicine, such as the care and prevention of injuries. A panel composed of members of the ISAKOS Orthopaedic Sports Medicine Committee reviews the award applications and the winning manuscript is presented at the ISAKOS Biennial Congress.

2015 Winner

“Biomechanical Consequences of a Nonanatomic Posterior Medial Meniscus Root Repair After a Root Tear”

Christopher M. LaPrade, BA, USA



Patellofemoral Traveling Fellowships

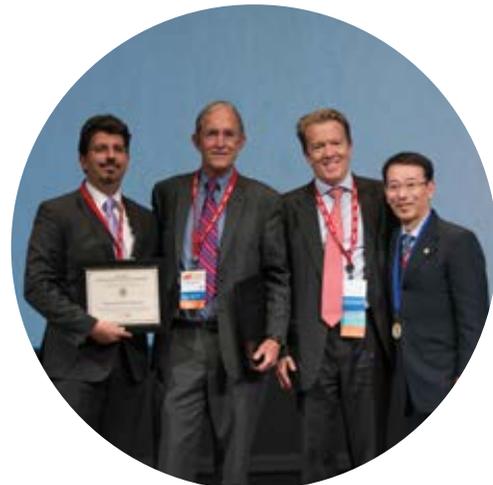
THE PATELLOFEMORAL FOUNDATION & ISAKOS

This travel award was developed to promote better understanding and communication regarding patellofemoral pain. This opportunity is awarded on a competitive basis to an orthopaedic surgeon interested in the study and advancement of understanding of the patellofemoral joint. Preference is given to those who have established an academic record of accomplishment. The Patellofemoral Foundation and ISAKOS will provide a stipend to permit visits to several centers, worldwide, that offer opportunities to learn about the complexities of patellofemoral pain. The fellows will write a report of the experience, which will be considered for publication in *Arthroscopy: The Journal of Arthroscopic and Related Surgery*.

2015–2016 Winners

Jacqueline Louise Munch, MD, USA

Nikolaos K. Paschos, MD, PhD, USA



Patellofemoral Research Excellence Award

THE PATELLOFEMORAL FOUNDATION & ISAKOS

The Patellofemoral Research Excellence Award was established in 2003 to encourage outstanding research leading to improved understanding, prevention and treatment of patellofemoral pain or instability. A panel composed of representatives from the ISAKOS Knee and Scientific Committees, The International PF Study Group and The Patellofemoral Foundation review the award applications and the winning manuscript is presented at the ISAKOS Biennial Congress.

2015 Winner

“Femoral Antetorsion is Related to the Morphology of the Femoral Trochlea”

Michael Christian Liebensteiner, MD, PhD, AUSTRIA



Watanabe Arthroscopy Travelling Fellowship

The Masaki Watanabe Arthroscopy Traveling Fellowship was named for Dr. Masaki Watanabe, who developed the first device for minimally invasive surgery. The arthroscope was developed based on his original ideas and formed the basis for arthroscopic surgery today. The Masaki Watanabe Arthroscopy Traveling Fellowship Award is intended to provide funding for two young arthroscopic surgeons from developing countries to travel to several medical centers and learn more about the current practice of arthroscopic surgery from well-respected experts in the field. At each site, the fellows will have an opportunity to observe arthroscopic surgeries, discuss surgical procedures, patient management, and research in the various fields of arthroscopy. The knowledge learned by the traveling fellows can then be taken back to their respective countries to improve patient care and advance the local teaching of arthroscopic surgery.

2015 Winners

Awadhesh Kumar Pandey, MBBS, MS Orthopedics, NAMIBIA

Eulogio Jorge Hurtado Fernández, MD, PERU



Upper Extremity Traveling Fellowships

This fellowship was developed to promote better understanding and communication regarding injuries or conditions involving the structures of the Upper Extremity. This opportunity is available on a competitive basis to an orthopaedic surgeon between the ages of 35 and 45 years, interested in the study and advancement of understanding of injuries to the Upper Extremity. Preference is given to those who have established an academic record of accomplishment. A stipend will be provided to permit visits to several centers, worldwide, that can match their facilities with the applicant's interest. The fellow will write a report of the experience which will be considered for publication in *Arthroscopy: The Journal of Arthroscopic and Related Surgery*.

2015–2016 Winners

Peter Domos, MD, FRCS (Tr&Orth), UNITED KINGDOM

Nataraj A R, MS Ortho, INDIA

Welcome Reception

ISAKOS thanks all who participated in the 2015 ISAKOS Congress Welcome Reception. Congress participants and their guests enjoyed wonderful French entertainment including singers and can-can dancers! Roving musicians provided wonderful entertainment for a delightful evening! Guests enjoyed French delicacies including wine and cheeses typical of the Lyonnaise region.



Lunchtime Lectures & Workshops

Lunchtime Lectures and Workshops were also sponsored by various companies, and provided up-to-the-minute information on various techniques with lectures and hands-on workshops.



ISAKOS Strategic Planning Forum

Leaders of ISAKOS gathered on Saturday, June 6th to discuss ISAKOS Strategic Plan for 2015–2017.



Surgical Demonstrations

ISAKOS presented more than 25 surgical demonstrations over the course of the 2015 ISAKOS Congress! Visit the ISAKOS Global Link to view archived surgical demonstration video and participate in online courses.



ISAKOS Pre-Courses

ISAKOS hosted three pre-courses on Saturday, June 6th on the Knee, Shoulder and issues related to the treatment of the football athlete.

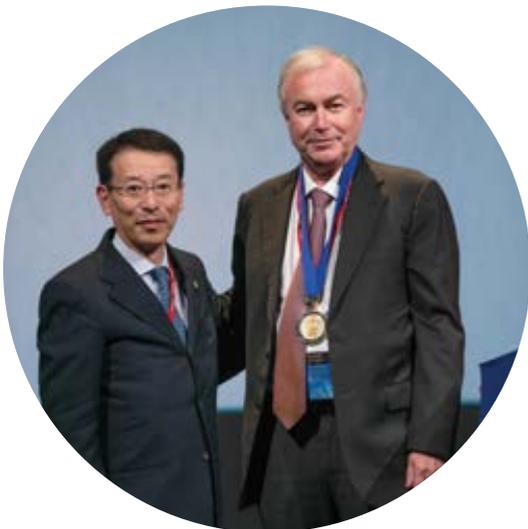


ISAKOS Booth and Resource Area



Presidential Transition

Dr. Masahiro Kurosaka, ISAKOS President 2013–2015 passes the Presidential Medallion to Dr. Philippe Neyret, ISAKOS President 2015–2017.



Presidential Guest Lecturer

ISAKOS welcomed Thierry Frémaux as the Presidential Guest Lecturer. Mr. Frémaux is the Director of the Institut Lumière in Lyon and the General Delegate of the Cannes Film Festival. Mr. Frémaux gave a fascinating lecture on the relationship of film and sport.



11th Biennial ISAKOS Congress Introduction

Dr. Kurosaka welcomed Dr. Neyret, Shiyi Chen (China), and Julian Feller (Australia) to speak on the 11th Biennial ISAKOS Congress in Shanghai. Dr. Chen will serve as the local host, and Dr. Feller will serve as the Program Chair.



Opening Ceremony

Anastasios D. Georgoulis (Greece), Program Chair of the 10th Biennial ISAKOS Congress, welcomes Congress Attendees during the Opening Ceremony.



International Presidents' Breakfast

ISAKOS welcomed the presidents of many international societies for breakfast on Wednesday, June 10th.



ISAKOS Sports Rehabilitation Concurrent Course

The ISAKOS Sports Rehabilitation Concurrent Course was attended by physicians, athletic trainers, physiotherapists and coaches concerned with the management or prevention of injuries to the athlete.

ISAKOS Staff



Bottom: Kathleen Reyes, Donna Festo, Michele Johnson, Kayleigh Foley

Top: Hilary Matthews, Joy Allen-Joseph, Katie Anderson

Donors Reception

ISAKOS hosted a reception for those who have graciously donated to the ISAKOS Global Connection Campaign. Pictured are the ISAKOS Godfathers and their recipients.





ISAKOS Board of Directors 2015–2017

Pictured: Pieter Erasmus, David Parker, Jon Karlsson, Joao Espregueira-Mendes, Magnus Forssblad, Moises Cohen, Jose Hulebroek, Philippe Neyret, Ryosuke Kuroda, Marc Safran, Daniel Slulitel, Vicente Gutierrez, Willem van der Merwe, Guillermo Arce



ISAKOS Honorary Members

ISAKOS welcomes new Honorary Members. For more on the 2015 Honorary Members, please see page 16.
Pictured: Philippe Neyret, Freddie Fu, Rene Verdonk, Konsei Shino, Masahiro Kurosaka

ISAKOS Honorary Members



Honorary Membership is the highest honor awarded to an ISAKOS Member who has demonstrated outstanding or exemplary leadership in the specialties of arthroscopy, knee surgery, and orthopaedic sports medicine. We congratulate the ISAKOS Honorary Member recipients for 2015!



Freddie H. Fu, MD, USA

Presented by: Moises Cohen, MD, PhD, Prof., BRAZIL

Dr. Fu is a preeminent leader in orthopaedic surgery and sports medicine across the world. As former ISAKOS President, Dr. John Bergfeld stated, "One cannot go anywhere in the world without feeling the influence of Freddie Fu... In his unique way, Dr. Fu epitomizes the word 'diversity.'"

As one of the first Asian orthopaedic residents at the University of Pittsburgh, Dr. Fu has lived the meaning of diversity. When he helped found the University of Pittsburgh Medical Center (UPMC) sports medicine program, the program hosted a diverse group of fellows from within the United States as well as participants from all over the world, including Europe, Asia, and South America. After serving on the faculty of the University of Pittsburgh School of medicine since 1982, Dr. Fu was appointed in 1998 the David Silver Professor and Chairman of the Orthopaedic Department. In 2010, he was appointed as the eighth Distinguished Service Professor, the highest honor that the University can accord a senior faculty member.

Dr. Fu was born in Hong Kong and his family ancestry has been traced back for 27 generations through middle to southern China. Dr. Fu attended St. Paul's College, the oldest secondary school in Hong Kong with a mission of bringing together the cultures of the East and West. He was the captain of the basketball team and also played lead guitar for a rock and roll band he started at St. Paul's.

Dr. Fu is an active academic, and has held many offices in various orthopaedics and sports medicine organizations including the Herodicus Society, American Orthopaedic Association, Orthopaedic Research and Education Foundation (OREF) and ACL Study Group. In 2008 was President of the Pennsylvania Orthopaedic Society and served as President of AOSSM from 2008–2009.

Dr. Fu has served ISAKOS in a variety of ways, and was ISAKOS President from 2009 through 2011.

In 2011, Dr. Fu received the American Academy of Orthopaedic Surgery Diversity Award, an award intended for those surgeons who have distinguished themselves through outstanding commitment to making orthopaedics more representative of and accessible to diverse patient populations.

Best known for his work with the ACL, Dr. Fu has pioneered numerous innovative arthroscopic surgical techniques to treat injuries to the knee mainly in ACL from the anatomy to the surgical techniques. Dr. Fu is one of the most popular leaders in our field and helped form the careers of a large number of leaders worldwide. Dr. Fu is an avid photographer, bicyclist, restaurant aficionado, dedicated husband, father and grandfather.



Pau Golanó, MD, SPAIN

Presented by C. Niek van Dijk, MD, PhD, NETHERLANDS

An ISAKOS Member since 2001, Dr. Pau Golanó was a great surgeon and friend to many. Dr. Golanó was a professor of Pathology and Experimental Therapeutics at the University of Barcelona, and an Adjunct Professor in the Department of Orthopaedic Surgery at the University of Pittsburgh School of Medicine. His exceptional anatomical dissection skills and passion for education was quickly recognized by the orthopaedic surgeons surrounding him. His skills were recognized worldwide and he quickly became the leading expert on orthopaedic anatomy of the last decade.

He devoted his career and life to the education of orthopaedic surgeons, making them better doctors by teaching anatomy in the finest details. Dr. Golanó leaves behind a legacy with his exceptional anatomical dissection skills and passion for education. His contributions involved a broad spectrum like Shoulder, Hip, Knee and Ankle. He was a teacher for orthopaedic surgeons around the world.

Pau Golanó was a nonconformist. His unique strength was his artistic vision. He was not quickly satisfied with his achievements and created an extreme high standard for himself. He was an artist, always quick with a smile. With his charm he was liked by all. He worked best under pressure. Deadlines were never met. Together with the love of his life Celine, he enjoyed travelling the world, meeting friends and sharing his knowledge.

In May 2014, Dr. Golanó was honored with the Most Dedicated Individual Award at the 16th ESSKA Congress in Amsterdam. In addition to being a world-renowned surgical anatomist, Dr. Golanó spent his spare time as photographer and illustrator.

Dr. Golanó suffered a massive stroke, and passed away in July 2014. Pau Golanó was an admirable individual and will truly be missed. ISAKOS was pleased to welcome Dr. Golanó's wife Celine Bancheraud to the 10th Biennial ISAKOS Congress, and she accepted the Honorary Membership on her husband's behalf.



Konsei Shino, MD, PhD, JAPAN

Presented by: Masahiro Kurosaka, MD, JAPAN

Dr. Konsei Shino is described by his colleagues to be the three "S"s—Very strict, very scientific and very straightforward. Dr. Shino is a sought after knee surgeon with special focus on the anterior cruciate ligament. Dr. Shino currently serves as Head of Sports Orthopaedic Center at Yukioka Hospital, Osaka, Japan.

Dr. Shino has been a real pioneer in allograft ligament surgery in the last century. Currently, he is well known as a pioneer of anatomical ACL reconstructions—"Anatomical Rectangular Tunnel ACLR with BTB graft" as well as "Anatomical Triple Bundle ACLR with hamstring tendon graft". To accomplish ACL Reconstruction as anatomically as possible, he elucidated the location of direct femoral insertion area of ACL and established the arthroscopic procedure to consistently identify the area.

To facilitate ACL Reconstruction, Dr. Shino has developed several medical devices including DSP (double spike plate) for graft tension adjusting at the time of pull-out suture fixation; Outside-in femoral guide for consistently creating the anatomical femoral tunnel; Rectangular dilators for creating rectangular femoral tunnel.

Dr. Shino has authored more than 100 original articles in English, and more than 10 books. Dr. Shino has been a valued member of ISAKOS for many years, and was the winner of the ISAKOS John Joyce three times, as well as the Winner of the ISAKOS Albert Trillat Award twice.



René E. Verdonk, MD, PhD, BELGIUM

Presented by Philippe Neyret, MD, PhD, FRANCE

Prof. René Verdonk is a pioneer in the advancement of trauma surgery and in knee pathology, and takes a special interest in cruciate and meniscal surgery. From 1992–2011, Prof. Verdonk served as Professor of Orthopaedic Surgery and head of the department of Orthopaedic Surgery and Traumatology at Ghent University Hospital in Gent, Belgium. In 2011, Prof. Verdonk transitioned to the role of Emeritus Professor.

In addition to his work with knee pathology, cruciate and meniscal surgery, Prof. Verdonk is also involved in cartilage pathology. Prof. Verdonk has published in a large number of review Journals, in addition to serving as Editor in Chief of the Knee Surgery, Sports Trauma and Arthroscopy Journal, and senior editor since 2013.

Prof. Verdonk is a member of many scientific societies, such as the Belgian Society for Orthopaedic Surgery and Traumatology, of which he was President from 1991–1992. He is a founding member of BOTA (Belgian Orthopaedic Trauma Association).

Prof. Verdonk had the honor to serve as President of ESSKA and past chairman of the basic science committee. Within ISAKOS, Prof. Verdonk has served on many important ISAKOS Committees including the Program Committee, Strategic Planning, Education, Publications and Knee. Prof. Verdonk was nominated to the prestigious Hall of Fame of the AOSSM in 2011.

Prof. Verdonk is a loving husband, father and grandfather. One of his two sons, Peter, is also an orthopaedic surgeon active within ISAKOS.

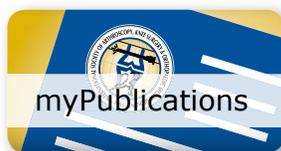


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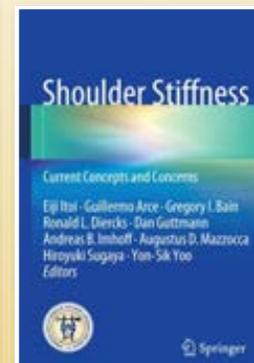
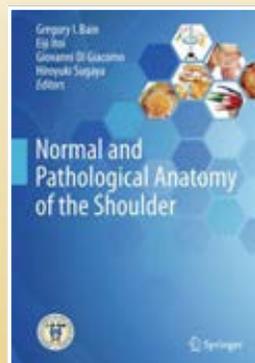
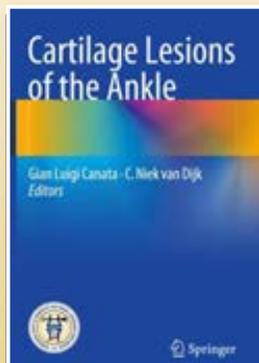
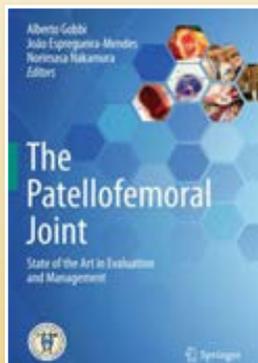
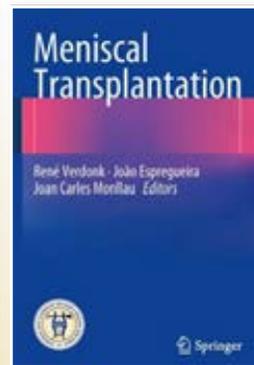
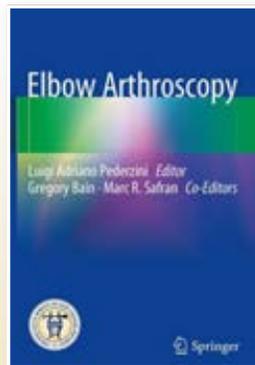
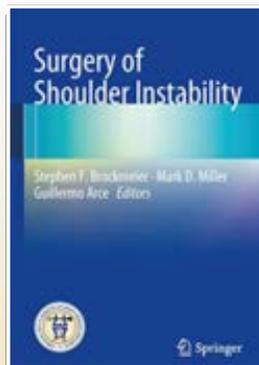
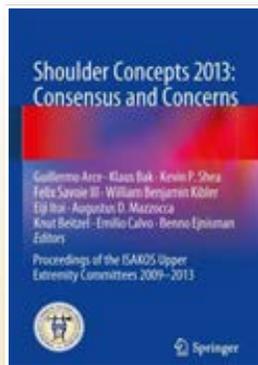
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ISAKOS Looks Forward to Shanghai!

On behalf of the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine, we cordially invite you to the 11th Biennial ISAKOS Congress in Shanghai, China. The ISAKOS Congress continues to be considered the premier international meeting providing a diverse and unique opportunity for attendees to share, discuss and learn the latest advancements in arthroscopy, knee surgery and sports medicine.

Our goal with the 11th Biennial Congress is to build on the success of previous congresses to provide a program that meets the needs of a wide variety of orthopaedic surgeons, from all parts of the globe. We will strive to provide an evidence base for clinical practice and to provide expert commentary and perspective on the current evidence base. Our goal is to build a program that gives attendees the opportunity to catch up on the latest trends and techniques in all fields, while featuring both Western and Eastern perspectives. We hope to give as many attendees as possible the opportunity to present from the podium or in an e-poster, and provide a comprehensive course for both the novice and expert surgeon.

The five-day Congress will include a variety of educational opportunities such as surgical demonstrations, paper presentations, debates, lectures, symposia and instructional course lectures. Lunch time hands-on workshops, electronic posters and technical exhibits will also be offered. The ISAKOS Congress provides a variety of new prophylactic, therapeutic and surgical technique information, allowing attendees to expand their knowledge and enhance their surgical skills.

Abstract Submission is now open, and will remain available until September 1, 2016. Abstracts will be considered for podium presentations and/or electronic posters. In addition, exceptional abstracts are considered for several ISAKOS Awards for outstanding clinical or laboratory research. Awards include honoraria and waived registration and are recognized in an Awards Ceremony at the Congress.

The city of Shanghai is a classic backdrop for an ISAKOS Congress. The ISAKOS Congress will also host a variety of social events such as; the Welcome Reception for all Congress attendees and their guests, a spouse and guest program and a special tour program.

You are a vital part of the 11th Biennial ISAKOS Congress! We hope you will plan to participate in the international experience that is the ISAKOS Congress. We look forward to seeing you in Shanghai!

Philippe Neyret, MD

ISAKOS President 2015–2017

Julian Feller, FRACS

ISAKOS Congress Program Chair 2017

2017
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CALL FOR ABSTRACTS

The International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine is pleased to announce the Call for Abstracts for the 2017 Congress

ABSTRACT SUBMISSION DEADLINE

SEPTEMBER 1, 2016

isakos.com/2017congress





2017 CONGRESS CONTENT

5 MEETING DAYS WITH:

- Pre-Courses on Saturday, June 3, 2017
- Sports Rehabilitation Concurrent Course
- 300+ Scientific Papers
- Panel Discussions and Debates
- Symposia
- Lunchtime Lectures and Workshops
- Surgical Demonstrations
- Instructional Course Lectures
- Paper and ePoster Presentations
- Technical Exhibits
- CME Certification
- Spouse and Guest Program
- Welcome Reception

CME CREDIT

The 11th Biennial ISAKOS Congress will be planned and implemented in accordance with the essential areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through joint sponsorship.

AWARDS AND FELLOWSHIPS

- John Joyce Award
- Richard B. Caspari Award
- Scientific Research Award
- Albert Trillat Young Investigator's Award
- Achilles Orthopaedic Sports Medicine Research Award
- Patellofemoral Research Excellence Award
- Gary G. Poehling Award
- The Upper Extremity Traveling Fellowship
- The Patellofemoral Traveling Fellowship
- The Masaki Watanabe Arthroscopy Traveling Fellowship

ONLINE ABSTRACT SUBMISSION

ISAKOS is pleased to announce the
Call for Abstracts for the 2017 Congress
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APPLY ONLINE FOR
CONGRESS AWARDS



Normal and Pathological Anatomy of the Shoulder

Editors:

Gregory Bain, MB BS, FRACS, PhD, AUSTRALIA

Eiji Itoi, MD, PhD, JAPAN

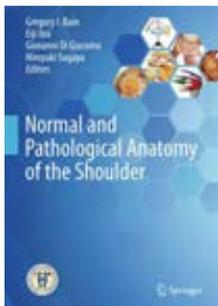
Giovanni Di Giacomo, MD, ITALY

Hiroyuki Sugaya, MD, JAPAN

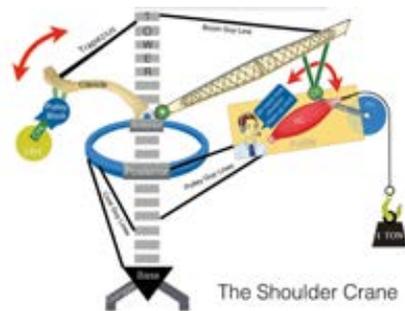
ISBN 978-3-662-45718-4 ISBN 978-3-662-45719-1 (eBook)

The Upper Limb Committee completed this book, which was published by Springer in May 2015 (Fig. 1). This as an ambitious undertaking, but was successfully completed in time for the ISAKOS meeting, thanks to the considerable effort of the many authors and editors. We provide here an insight into some of the riches provided in this new book.

This is the first book published on this topic. It is comprehensive, authoritative and beautifully presented with many quality photos and illustrations, which allow the reader to quickly understand the concepts.

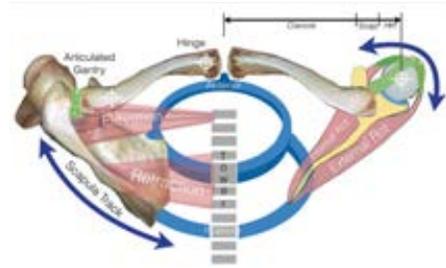


01



02

The shoulder crane (Fig. 2) is built on the pelvic base with legs for outriggers. The articulated spinal tower has a thoracic platform on which the crane is housed. The clavicular boom articulates at the sternoclavicular joint and is elevated by the trapezius from the posterior tower. The “suspensory cascade” extends from the outer clavicle to the humeral head and includes the clavicle / coraco-clavicular ligaments / coracoid process coraco-humeral ligament / humeral head. The scapula is a pulley, strategically positioned in the middle of the cascade of suspension, between the two ligamentous complexes. It swivels on the coraco-clavicular ligaments, to allow the scapula to accommodate the shape of the “scapular track” and the position of the humeral head. The scapula position is controlled by the multiple powerful per-scapular muscles, that control the orientation of the glenoid and scapular body, for shoulder stability and power (Copyright Dr. Gregory Bain).

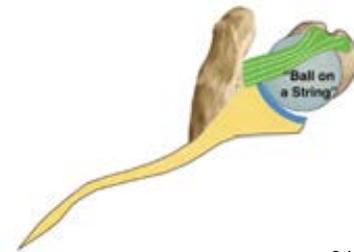


03

Shoulder gantry (Fig. 3–left) is a scaffold over the top of the glenohumeral joint which is composed of the clavicle, coracoid, CAL, acromion and scapular spine. The trapezius muscle (posterior) elevates the gantry, hinging on the sternoclavicular joint (anterior-medial). The gantry swivels at the coraco-clavicular ligaments, which allows the periscapular muscles to change scapula orientation. With these restraints, the scapula follows the “scapular track.” The AC joint disc buffers the compressive forces and the coraco-clavicular ligaments resist the tensile forces.

The shoulder triangle (Fig. 3–right) consists of the shoulder girdle, thoracic cage and clavicular boom. The centre of the rotating humeral head is lateralised by this triangle, the width of the pulley block and the radius of the humeral head. The rotator cuff insertion is lateral to the centre of rotation of the humeral head, making it an important rotator. The periscapular muscles power the scapula, and the rotator cuff controls the humeral head on the glenoid. (Copyright Dr. Gregory Bain).

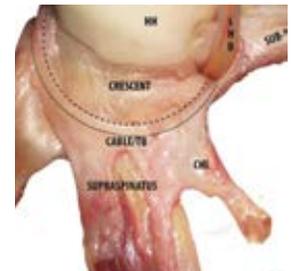
The coracohumeral ligament (Fig. 4a, b, c) is the second component of the “cascade of suspension.” This significant structure spans from the coracoid to the humeral tuberosities. The CHL suspends and tethers the humeral head, like a “ball on a string.” It reinforces the biceps pulleys, the cable and the insertions of the subscapularis and supraspinatus.



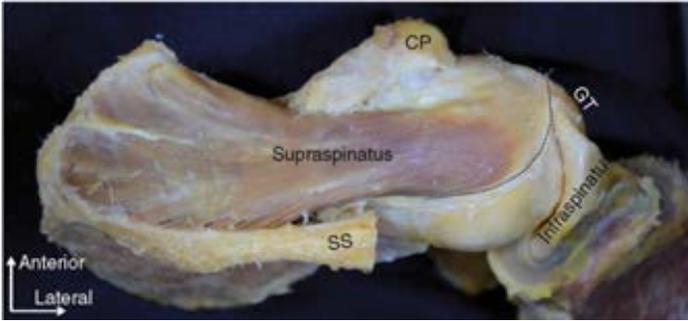
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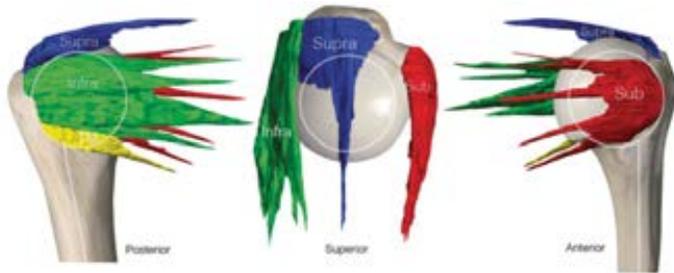


04c



05

The Rotator Cuff (Fig. 5) The infraspinatus has been detached to expose the capsule. (Courtesy Hiro Sugaya)



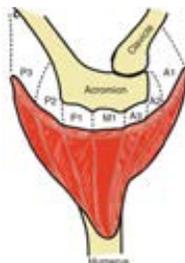
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Intra-muscular rotator cuff tendons (Fig. 6). The subscapularis has 4 tendons, the supraspinatus is a bipennate muscle, with 1 tendon; and the infraspinatus has an oblique head (head depressor) and transverse head (external rotation). (Created by Dr. Afsana Hasan).



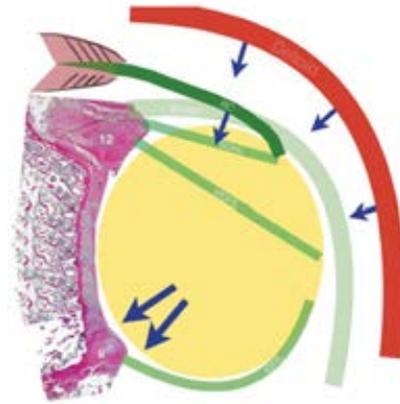
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Rotator Cuff Tears (Fig. 7); Crescent, L-shaped, reverse L-shaped tears have a different appearance and require different methods of mobilization and fixation. (Courtesy of Steve Burkhart).



08

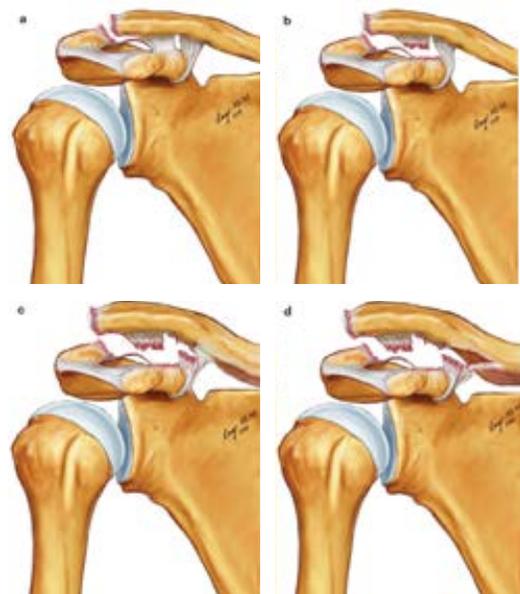
Deltoid (Fig. 8), There are 7 segments derived from the anterior, lateral and posterior, acromion. (Courtesy of Eiji Itoi, modified from Rispoli et al).



09

Functional glenoid labrum (Fig. 9). The inferior labrum is a fixed convex bumper mounted on the osseous glenoid. The superior labrum is a mobile organ of tension, which attaches “off the glenoid face.” There is a synovial lined cleft between the labrum and the glenoid, which allows it to adapt its shape in various positions. The superior labrum is actively controlled by the biceps tendon, and passively controlled by the SGHL and MGHL at the extremes of motion. The dynamic biceps, rotator cuff and deltoid all compress the humeral head onto the “static” inferior glenoid and labrum, to provide joint stability.

AC Joint Instability (Fig. 10); Pattern and classification of progressive and sequential AC joint instability and scapula medicalization. Stage 1 – Failure of AC ligaments and capsule. Stage 2 – Failure of the trapezoid at the coracoid. Stage 3 – Failure of the conoid at the clavicle. Stage 4 – Stripping of the inferior periosteum from the medial clavicle. (Concept Greg Bain, Image Copyright Dr. Martin Langer).



10

Awards & Fellowships

The ISAKOS Fellowship and Awards Program is committed to recognizing and honoring researchers whose work has contributed to better understanding and communication within the fields of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine.

Applicants, please note: Presenting authors are allowed one submission per award. Additionally, each abstract may only be applied to one of the following awards. To be considered for an Award or Fellowship, abstracts and award applications must be submitted before September 1, 2016. Individuals are only permitted to receive one award or fellowship per Congress.



John J. Joyce Award

SPONSORED BY SMITH & NEPHEW, INC

In 1981, Dr. John J. Joyce III offered a monetary prize for the best arthroscopy paper read by an orthopaedic surgery resident or fellow during the Scientific Program of the 4th Congress of the International Arthroscopy Association in Rio de Janeiro. Joyce then endowed a prize to be awarded at every IAA Congress thereafter. The award was created with the intention to stimulate and reward younger members who contribute high-quality data and presentations.

Richard B. Caspari Award

Richard B. Caspari was an innovator, teacher and leader in the field of Arthroscopy. Beginning at the 2003 ISAKOS Congress in Auckland, New Zealand, a monetary prize in honor of Caspari was awarded to the best upper extremity paper read at the scientific program of the congress. The Richard B. Caspari award was established with the intention of stimulating and rewarding upper extremity focused abstracts and presentations.

Scientific Research Award

SPONSORED BY ÖSSUR

The Scientific Research Award began at the 2007 ISAKOS Congress in Florence, Italy. There, a monetary prize was awarded to the best scientific paper read at the scientific program of the congress. The Award was created to stimulate and reward abstracts and presentations focused on Scientific Research.

Gary G. Poehling Award (NEW in 2017!)

Former ISAKOS President, Gary G. Poehling, is an innovator, teacher and leader in the field of Arthroscopy--specializing in the elbow, wrist and hand. Beginning at the 2017 ISAKOS Congress in Shanghai, China, a monetary prize in honor of Dr. Poehling is to be awarded to the best Elbow, Wrist and Hand paper read during the scientific program of the ISAKOS Congress.

Albert Trillat Young Investigator's Award

SPONSORED BY STRYKER

In 1989, The International Society of the Knee established a Young Investigator's Research Award in memory of Professor Albert Trillat. Past President and founder of the International Society of the Knee, Trillat was a pioneer in knee surgery and sports traumatology. This award provides recognition for a young researcher who has done outstanding clinical laboratory research contributing to the understanding, care or prevention of injuries to the knee.

Achilles Orthopaedic Sports Medicine Research Award

SPONSORED BY DJO, INC.

The Achilles Orthopaedic Sports Medicine Research Award was created in 1995 to recognize the researchers(s) who have performed the most outstanding clinical or laboratory research in the field of sports medicine, such as the care and prevention of injuries.

Patellofemoral Research Excellence Award

SPONSORED BY THE PATELLOFEMORAL FOUNDATION, INC.

The Patellofemoral Research Excellence Award was conceived in 2005 by the Patellofemoral Foundation and ISAKOS to encourage outstanding research leading to improved understanding, prevention and treatment of patellofemoral pain or instability.

The Patellofemoral Traveling Fellowship

SPONSORED BY THE PATELLOFEMORAL FOUNDATION, INC.

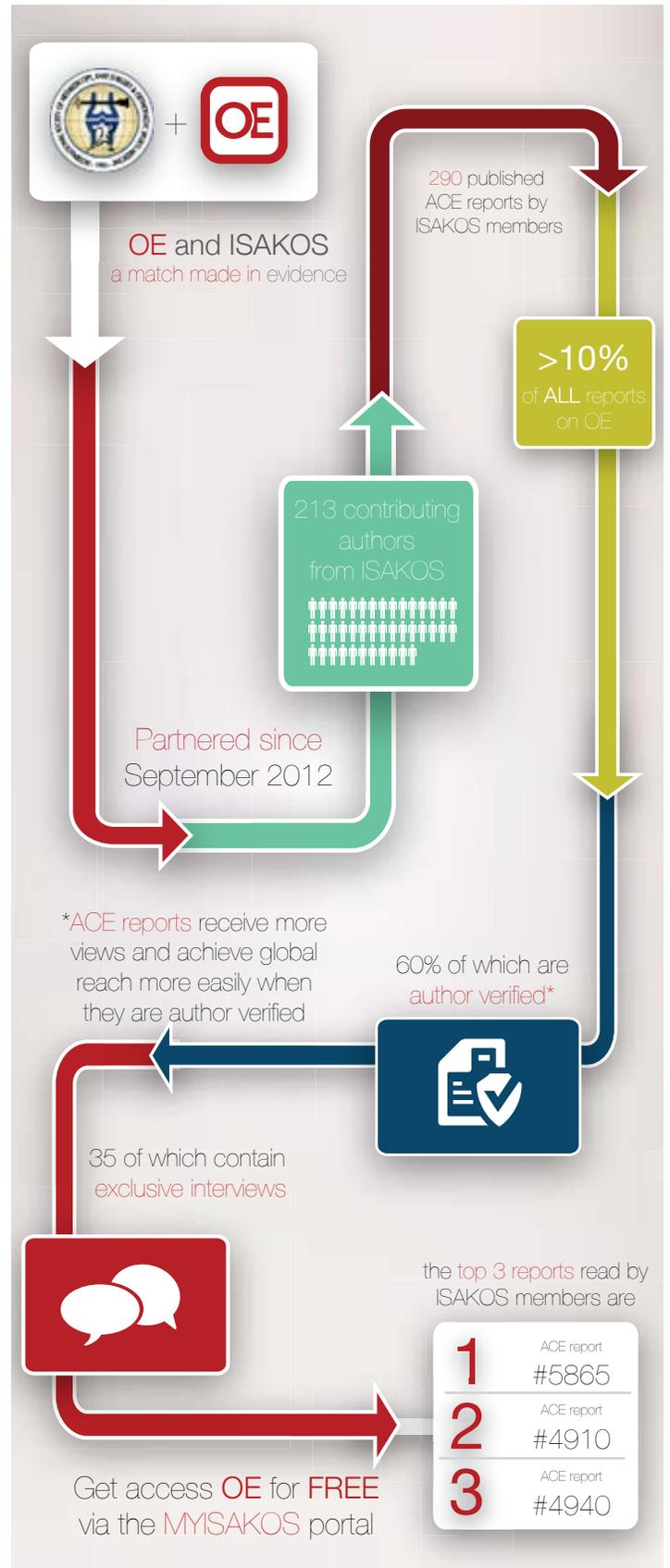
The Patellofemoral Traveling Fellowship was established in 2005 by the Patellofemoral Foundation and ISAKOS to promote better understanding and communication around the world regarding Patellofemoral pain. The Patellofemoral Traveling Fellowship is available on a competitive basis to an orthopaedic surgeon interested in the study and advancement of understanding of the Patellofemoral joint.

The Upper Extremity Traveling Fellowship

The Upper Extremity Traveling Fellowship was developed by the ISAKOS Upper Extremity Committee to promote better understanding and communication regarding injuries or conditions involving the structures of the Upper Extremity. This Traveling Fellowship is available on a competitive basis to an orthopaedic surgeon interested in the study and advancement of understanding of the Upper Extremity.

The Masaki Watanabe Arthroscopy Traveling Fellowship

Dr. Masaki Watanabe developed the first device for minimally invasive surgery. In honor of Dr. Watanabe's ideas and accomplishments, the Masaki Watanabe Arthroscopy Traveling Fellowship Award is a new traveling fellowship sponsored by the Arthroscopy Committee of ISAKOS that will provide funding for two young arthroscopic surgeons to learn more about the current practice of arthroscopic surgery from well-respected experts in the field. The knowledge learned by the traveling fellows can then be taken back to their respective countries to improve patient care and advance the local teaching of arthroscopic surgery.



Femoral Tunnel Placement in ACL Reconstruction Central Footprint vs. AM Bundle



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Introduction

'Anatomic' ACL reconstruction, implying a central femoral footprint tunnel position, has been advocated to improve knee stability, function and outcome. Many surgeons changed their surgical technique from a transtibial approach which typically results in a high AM femoral tunnel and posterior tibial tunnel placement to a transportal technique whereby the femoral tunnel position can be determined independent of tibial tunnel position. Many continued placing the femoral tunnel in the AM bundle position, but more recently, a central so-called 'anatomic' position was advocated.

This choice of femoral tunnel was based on anatomical and time zero biomechanical studies which suggested better control of rotational instability. It was predicted that more 'anatomical' placement would result in a fewer failures and reduced incidence of post ACL reconstruction osteoarthritis.

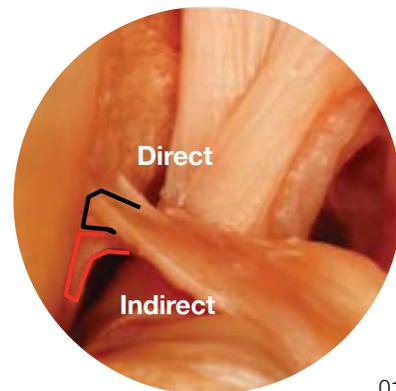
The implication of the term 'anatomic' is that the more traditional AM bundle tunnel position in the femur is non-anatomic. However, the AM position is still within the anatomic footprint; it is eccentrically located in the AM portion of the footprint rather than centralized within the footprint. Therefore, an AM position should still be considered an anatomic position.

A number of high volume surgeons noticed a higher ACL graft rupture rate with a central femoral tunnel position. This has resulted in a revisitation of ACL anatomy, biomechanical studies and clinical studies to determine the reasons for these findings.

This review article will detail the newer anatomical and histologic studies which show a direct and indirect ACL origin, biomechanical analysis of the direct and indirect fibres which show most of the load goes through the direct fibres, and recently completed clinical studies evaluating the effect of moving to a central femoral tunnel position on ACL graft failure

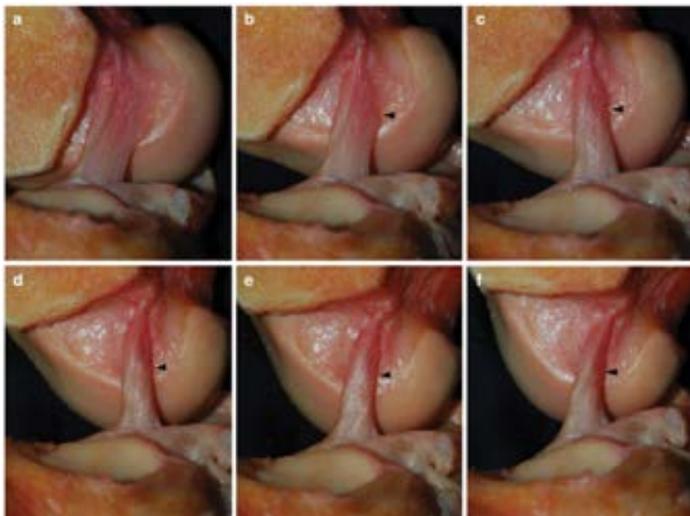
Anatomy & Biomechanics

ACL fibers form an oblong footprint that are organized such that the midsubstance of the ACL is narrower than the femoral footprint. Anatomic dissections have demonstrated that while the femoral footprint is oval, the native ACL forms a flat, ribbon like structure with a width of 9–16 mm and a thickness of only 2–4 mm as it takes off from the bone.



01

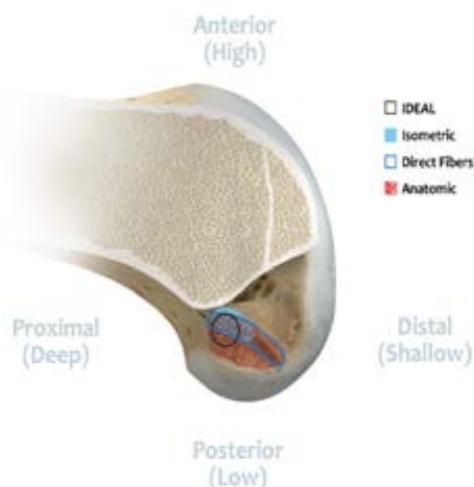
Histologic analysis of the femoral footprint has provided further clarification of the relationship of the footprint with functional aspects of the native ACL. The femoral origin of the ACL has distinct direct and indirect insertions, which were shown by histology and 3-dimensional volume-rendered computed tomography. The direct insertion consisted of dense collagen fibers anterior in the femoral footprint connected to a bony depression immediately posterior to the lateral intercondylar ridge. These direct fibers extended an average of 5.3 ± 1.1 mm posteriorly but do not continue to the posterior femoral articular cartilage. The indirect insertion consisted of more posterior collagen fibers that extend to blend into the articular cartilage of the posterior aspect of the lateral femoral condyle. This membrane-like tissue was located between the direct insertion and the posterior femoral articular cartilage, and had an average width of 4.4 ± 0.5 mm in the anteroposterior direction on average. This anterior band of ACL tissue with the direct insertion histologically corresponded to the fibers in the anterior, more isometric region of the femoral footprint. Conversely, the more posterior band of fibers, that have an indirect insertion histologically, corresponded to the more anisometric region and are seen macroscopically as a fan like projection extending to the posterior articular cartilage.



02

The dense collagen fibers of the direct insertion and the more membrane-like indirect insertion regions of the femoral footprint of the native ACL suggest that these regions may have different load sharing characteristics. The direct fibers of the insertion are a firm and fixed attachment allowing for a gradual load distribution into the subchondral bone and, from a biomechanical point of view, is thus extremely important as a key link between the ligament and bone to transmit mechanical load to the joint. A recent study showed the anterior region of the femoral footprint shares 80% of the load during stability testing and is more isometric during passive knee flexion than fibers in the posterior region of the footprint, which are adjacent to the posterior cartilage. This findings were elegantly reinforced by another recent sectioning study that demonstrated approximately 80% of the load during stability testing was taken up by the AM region of the direct insertion of the femoral footprint.

Taken together, this data suggests that it may be strategically wise to place a tunnel in the direct insertion region of the femoral footprint, which is eccentrically located anteriorly (high) in the femoral footprint rather than in the center of the footprint.



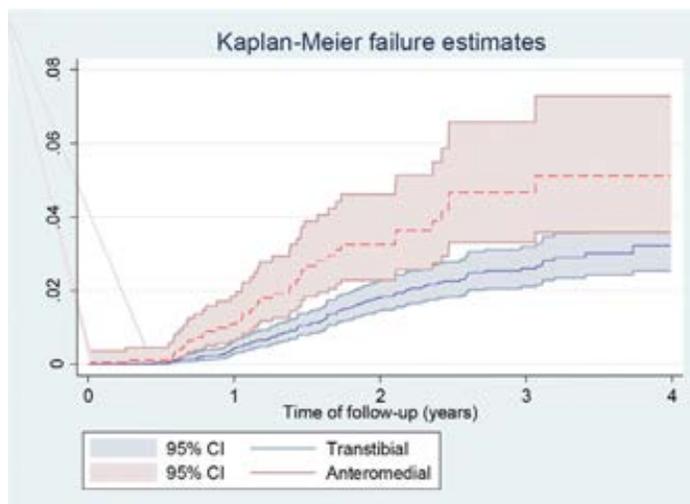
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Clinical Studies

There is a paucity of literature on the effect of femoral tunnel positioning and ACL graft failure

The Danish Registry has shown a higher failure rate for patients undergoing an ‘anatomical’ ACL reconstruction principles by which the anteromedial portal is used for identification and drilling of femoral ACL insertion. In 9239 patients followed for 4 years the revision rate for anteromedial drilling was 5.2% compared with 3.2% when trans tibial drilling was performed.

Recent unpublished data from the Danish ACL registry have demonstrated that the initial increase in revision rate found when anatomical ACL reconstruction techniques were introduced has improved. However the transtibial technique continues to demonstrate a decreased revision rate compared with recent ‘anatomic’ AM portal technique ACL reconstructions.



04

There are two other papers in the literature which evaluate ACL graft failure with a transtibial or transportal approach. Hussein et al performed a randomised prospective study comparing 80 transportal anatomic single bundle hamstring ACLR's with 80 transtibial ACLR's with 141 double bundle ACLR's which were followed for 3–5 years. They showed no difference in the failure rate.

- 01 The Ribbon ACL
- 02 Black arrow shows the direct fibers of the ACL at various flexion angles. Indirect fibers are fan like posterior extension fibers that extend to the posterior femoral condyle cartilage.
- 03 The AM position may be IDEAL as it represents a region of the femoral footprint that is anatomic, the most isometric, and a portion of the footprint covered by direct fibers that take up the most load during stability maneuvers.
- 04 Dansidh Registry Survival Curve

Femoral Tunnel Placement in ACL Reconstruction Central Footprint vs. AM bundle (continued)

In a MOON group study in which six surgeons performed 229 autograft transtibial ACLR. These were compared with 209 transportal ACLR's. There was no difference in the revision rate.

In a recently completed study Clatworthy in a prospective sequential single surgeon study compared the revision rate of 1016 transtibial hamstring ACL reconstructions followed for 6–15 years with 464 transportal hamstring ACL reconstructions followed for 2–6 years.

His transtibial technique utilised a short oblique tibial tunnel which enabled the femoral tunnel to sit within the anatomical footprint in a high AM position. Clatworthy changed to a transportal technique to enable a central femoral tunnel. This resulted in a more forward (distal) and lower (posterior) femoral tunnel position.

Sex, age, graft size, time to surgery, meniscal repair and meniscectomy data were collected and evaluated as contributing factors for ACL graft failure to enable a multivariate analysis.

- His transtibial revision rate was 5.1%, 52 revisions from 1016 ACLR's.
- His transportal revision rate was 6.9%, 32 revisions from 464 ACLR's

Utilizing a single variate analysis transportal ACLR technique has a hazard ratio which was 2.4X higher than transtibial. This is significant $p < 0.001$.

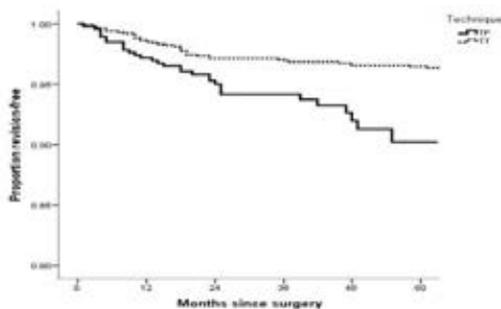
There was no difference in sex, age or lateral meniscal repair rates between the two groups. There were differences in graft size, time to surgery, medial meniscal repair rates & and medial & lateral % meniscus remaining

Adjusting for all these factors the multivariate hazard ratio was 2.3X higher for the transportal technique. This remains significant $p = 0.001$

The transportal ACLR's had a shorter follow up period thus the revision rate was also determined per 100 graft years to determine the relative risk of failure between the two techniques.

- The transportal revision rate was 0.14 failures per 100 graft years
- The transtibial revision rate was 0.04 failures per 100 graft years

Thus the ACL grafts placed more centrally in the footprint had a 3.5x higher revision rate than the grafts placed in a high AM position per 100 graft years which is significant $p < 0.001$.



05

- 61% of the transportal ACL graft failures occurred in the first year post surgery.
- 27% of the transtibial ACL graft failures occurred in the first year post surgery.

The transportal had a significantly higher earlier failure rate $p < 0.001$

He concluded that placement of the ACL graft in a more central femoral footprint position has a higher and earlier revision rate than an ACL graft placed in a high femoral AM position. As discussed in this review central footprint ACL reconstruction is less isometric. The resultant higher graft strains from this technique is the likely explanation for the increased revision rate.

In response to the increased failure rate Clatworthy modified his surgical technique. He continued to use the transportal technique but aimed to place the femoral tunnel in the AM bundle center rather than the center of the femoral footprint.

The failure rate data for the three techniques in the first two years is:

- Transtibial AM femur, posterior tibia–3/171–1.8%
- Transportal central femur, centromedial tibia–9/238–3.8%
- Transportal AM femur, centromedial tibia–2/178–1.1%

These early results indicate that the central femoral tunnel position is the reason for the higher failure rate rather than the surgical technique utilized to drill the femoral tunnel and bringing the tibial tunnel more anteriorly has not resulted in an increased failure rate.

In a recently completed study Andy Williams has shown a similar increase in both patella tendon and hamstring failure rate when he moved from a high AM to a central femoral footprint position.

When comparing clinical results it is easy to forget to regard those results in terms of the demographic of that surgeon's / surgeons' practice(s). Doing so will not only put the quoted results in context

but often explains often wide variation between series. For example in the non-elite athlete patients treated at Fortius Clinic, London, Andy Williams re-rupture rate is approximately 3% for hamstring ACL reconstructions. This is lower than Clatworthy's rate above as the patients from the general public in London are overall less sporty than in New Zealand. Andy Williams practice also involves an abnormally high proportion of professional athletes. 50% of his ACL reconstructions are for this group. They are a very interesting group as well as very challenging. They are hard to lose to follow up such is their profile and the data available on the internet for those who subsequently move clubs. As a result, for coarse data such as graft re-rupture a 100% follow-up is to be expected. In addition they will test their surgery and any flaw will be shown up. In less demanding patient groups the chance of an operation apparently working will be higher and so it is harder to compare operative techniques amongst many aspects of surgery as no difference is likely to be found. Of the athletes treated by Andy Williams the footballers (soccer players) have the highest re-rupture rates. In studying ACL graft re-rupture from January 2001 until June 2013 he undertook 212 isolated (ie no other ligaments requiring reconstruction) ACL reconstructions on professional footballers. 6 were excluded (2 with patellar tendon allograft – both of which re-ruptured; and 4 patellar tendon grafts which were combined with a lateral tenodesis – all of which survived with return to full play). A minimum 2 year follow-up is presented below. Obviously with time more re-ruptures will occur in those cases quoted here still with surviving grafts at the time of follow-up, but in professional football re-rupture almost exclusively occurs within 12 months of surgery. In the case series mid-third patellar tendon graft is compared to quadrupled semitendinosis/gracilis graft, and the central femoral footprint position with that in the original AM bundle position. The tibial tunnel position was constant throughout entering the joint in the centre of the tibial ACL footprint.

These results are summarised in the table below:

	Quadrupled Hamstrings	Mid 1/3 Patellar Tendon
Overall Re-rupture	14 of 125 = 11%	7 of 81 = 8.6%
AMB position	5 of 72 = 6.9%	1 of 22 = 4.5%
Central 'anatomic'	9 of 53 = 17%	6 of 59 = 10.2%

These findings are stark. In professional football in the United Kingdom, the overall re-rupture rate of quadrupled hamstring graft is higher than that for patellar tendon grafts (11% versus 8.6%) regardless of femoral tunnel position choice. The difference made by the choice of femoral tunnel position is still more dramatic: patellar tendon graft re-rupture a little more than doubles from 4.5% to 10.2% in the 'anatomic' central footprint group; but there is a huge rise in re-rupture if the hamstring grafts are considered – with approximately 2.5 times more in the central femoral footprint position (17%) compared to 6.9% in the AM position.

Discussion

In the mid 1990's the transtibial ACL reconstruction technique was popularized. This resulted in a more vertical graft with a femoral tunnel that was often outside the native ACL footprint. This was combined with a posteriorly placed tibial tunnel, which enabled the femoral tunnel to be placed at the back of the notch and avoided graft notch impingement.

The move to a central femoral tunnel placement, followed a period of popularity of double-bundle techniques and was based on anatomical studies showing a large femoral footprint that was more forward (distal) & lower (posterior) than the transtibially-drilled femoral tunnel.

Time zero biomechanical studies of a centrally placed graft showed better control of rotation than grafts placed outside the femoral footprint. It was proposed, therefore, that the central femoral graft position with its more normal knee kinematics would reduce the incidence of meniscal re-tears and further chondral damage and thus decrease the incidence of osteoarthritis.

Two clinical studies have evaluated this by comparing ACL grafts placed outside the femoral footprint with a centrally placed ACL graft.

In the MOON group study discussed above, it was shown that the TT group had a 1.8X higher rate of subsequent meniscal surgery and a 3.4X higher rate of chondral surgery six years post procedure.

Femoral Tunnel Placement in ACL Reconstruction Central Footprint vs. AM bundle (continued)

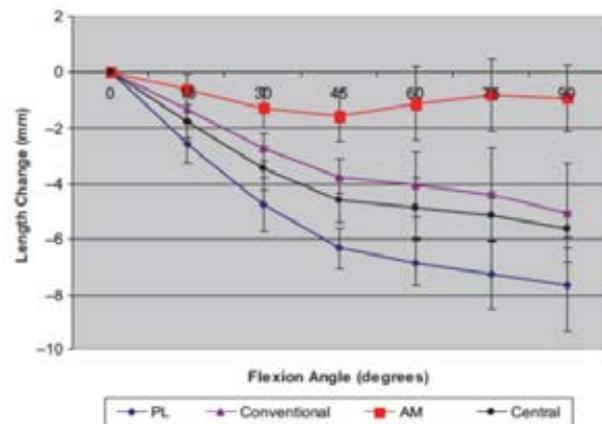
In the Duke study ten patients underwent a central femoral footprint ACLR using a Flip-cutter while twelve patients had a transtibial ACL reconstruction. High resolution 3D MRI analysis was performed 18 months post surgery. Patients in the non-anatomic graft placement group demonstrated a significant decrease in cartilage thickness along the medial intercondylar notch in the operative knee relative to the intact knee (8%) while in the anatomic graft placement group, no significant changes were observed. It is however important when evaluating the significance of this paper that no differences were observed elsewhere in the knee and the area where changed occur was a small and takes minimal load. They concluded that their findings suggest that “restoring normal knee motion after ACL injury may help to slow the progression of degeneration. Therefore, graft placement may have important implications on the development of osteoarthritis after ACL reconstruction.”

The Danish ACL Registry was the first group to show a significantly higher failure rate with an anteromedial portal technique. The two recently completed studies above by Clatworthy, who had a large series, and Williams, who had a very high demand patient population group, have shown a similar significant increase in the failure rate when the femoral tunnel position is moved from the ‘anatomical’ anteromedial position to the ‘anatomical’ centre of the femoral footprint.

In changing to the central femoral footprint position the authors of the review all noted that the ACL graft was less isometric. It was common to have a negative Lachman but a grade 1 anterior drawer at the completion of the procedure. This finding has been published by Lubowitz.

Forty years ago, Artmann and Wirth reported that a nearly isometric region for tunnel placement existed in the femur such that there is minimal elongation of the native anterior cruciate ligament during knee motion. The biomechanical rationale for choosing an isometric region of an ACL graft is that it will maintain function throughout the range of flexion and extension. A non-isometric graft would be expected to slacken during a large portion of the flexion cycle and not restrain anterior translation of the tibia or, if fixed at the wrong flexion angle, could capture the knee and cause graft failure due to excessive tension. These two theoretical undesirable effects from non-isometric graft placement are supported by many, experimental and clinical studies that have shown that non-isometric femoral tunnel placement at the time of the operation can cause recurrent anterior laxity of the knee. The most isometric region of the femoral footprint has been consistently shown to be localized eccentrically within footprint in a relatively narrow band like region that is proximal (deep) and anterior along the lateral intercondylar ridge within the footprint. This region corresponds to the direct insertion histologic region of the femoral footprint that has been shown carry the most load during stability testing.

A large body of literature demonstrates that a femoral tunnel in the center of the femoral footprint is less isometric than one placed in the more anterior region of the footprint. Indeed, the anterior position (high in the footprint) identified by Noyes demonstrates minimal anisometric with 1–4 mm of length change through the range of motion. In contrast, a central femoral tunnel would be expected to demonstrate 5–7mm of length change while a lower graft (in the PL region of the footprint) demonstrates approximately 1 cm of length change thru the range of motion. As such, central grafts, or grafts placed in the PL portion of the femoral footprint would be expected to see high tension or graft forces as the knee is flexed or lose tension completely if graft is fixed at full extension.



06

Multiple cadaveric studies investigated the relationship between femoral tunnel positioning and time zero stability. These studies often demonstrated superior time zero control of knee stability, particularly in regards to pivoting type maneuvers, when the femoral tunnel was placed more centrally in the femoral footprint as compared to a tunnels placed outside the footprint.

However, there is an emerging body of literature that demonstrates no significant difference in time zero stability examination between an anteriorly placed femoral tunnel WITHIN the anatomic footprint (eccentrically located in the footprint) as compared to a centrally placed graft. Returning to the more isometric tunnel position that is still located within the femoral footprint would be expected to confer the benefits of an anatomically based graft position with the advantageous profile of improved isometry as compared to a central or PL placed graft. Biomechanical studies have documented that ACL graft fibers placed posteriorly (low) in the footprint causes high graft forces in extension and in some cases graft rupture. Accordingly, the importance of reconstructing the posterior region of the footprint to better control time zero stability is questioned.

According to the proponents of the central femoral footprint position for the ACL graft, the use of this position will give improved kinematics based on cadaveric 'time-zero' studies, and, on that basis, better results and less meniscal/chondral failure and less long term osteoarthritis. In personal communication these surgeons acknowledge an increased re-rupture rate. They have suggested that this is a consequence of better femoral tunnel placement meaning that the ACL graft will 'work properly' and thus be stressed hence increased re-rupture rates. In their view this is the price of better long-term outlook for those in whom the graft survives as they have a 'better knee'.

In response to the higher failure rate and these recent anatomical and biomechanical studies that show the important fibres of the ACL are not located centrally but are eccentrically placed in the AM bundle position all authors of this review have moved their femoral tunnel back to the AM position. All of us use a transportal technique to ensure that we can hit the desired AM femoral tunnel position that is within the footprint thus the ACL graft remains 'anatomical'. The transportal technique also enables independent tibial tunnel drilling so the ACL graft can match the crescentic insertion of the native ACL and this avoids the short oblique posterior tibial tunnel that is required to hit the femoral footprint with a transtibial technique

To suggest the central footprint position alone is 'anatomical' is incorrect and implies other options are 'sub-optimal'. Other tunnel positions within the footprint are, of course, still 'anatomical'.

Biomechanical studies have now shown this technique will enable reproducible knee kinematics with a more isometric graft replicating the direct fibers of the native ACL.

Recent clinical studies presented in this review show a lower failure rate than with the center femoral footprint ACL reconstruction.

It is hoped this surgical technique will result in decreased meniscal and chondral damage and minimize the risk of graft failure. Further long term clinical studies are required to determine whether this is the case.

SPORTS MEDICINE INJECTIONS

Injections are a current practice not only in sports medicine but in the practice of general orthopaedics. Right at this moment, thousands are being made worldwide. Injections are used in a variety of joints and anatomical structures, with different drugs, and to treat different pathologies. Complications are rarely known as few are reported.

To understand more about the use of injections in sports medicine, the ISAKOS Orthopaedic Sports Committee has developed a brief survey to gather information that can give a better knowledge about this massive practice. The results will contribute to the goal of establishing a consensus about the use of injections, and provide guidelines for surgeons and patients for scientific use.

To complete the survey, please visit www.isakos.com.



06 Anisometry profiles of anteromedial (AM), posterolateral (PL), central and conventional single bundle fibers as a function of flexion

Second Thoughts on the Necessity to Repair Small or Medium Size Tears of Rotator Cuff – A Clinical Perspective



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In young, healthy individuals, the rotator cuff tendons are exposed to high tensile forces without failing or losing their structural integrity. With age, these tendons are weakened by degeneration, lose their tensile strength, and may tear. Additionally, the cuff tendons might degenerate with excessive repetitive mechanical strain. Partial- and full-thickness tears result and, when the tear is large enough, proximal migration of the humeral head might occur causing a secondary subacromial impingement.

Due to increasing use of arthroscopy in the treatment of shoulder disorders, tears of the rotator cuff have been thoroughly documented and described. The management of rotator cuff tears has subsequently been defined according to tear size, patient age and activity level, and tear etiology.

Operative treatment is usually directed at subacromial decompression and rotator cuff repair. However, there is evidence that shows that this combined approach is not always necessary. A correlation has been shown between the success of subacromial decompression and the size of the rotator cuff tear. In this report, patients with small tears demonstrated 90% good functional results, while only 50% of good results were achieved when tears were larger than 2 cm. Similarly, another report demonstrated 50% good results after arthroscopic debridement without repairing the cuff tear. In contrast, in a study on the comparison between

arthroscopic decompression without cuff repair and open repair of the torn rotator cuff, patients who were treated with arthroscopic decompression alone had less satisfactory results than those who had repair. In that report, 78% of patients who had repair of the cuff with subacromial decompression had satisfactory functional outcome in comparison to 61% in patients treated with arthroscopic subacromial decompression alone.

We showed that in 96% of 160 elderly patients with small or moderate tears of the supraspinatus who were treated by subacromial decompression without repairing the cuff achieved a satisfactory postoperative functional outcome. Another analysis of 210 elderly, less active, low-demand patients over 60 years of age treated by arthroscopic acromioplasty alone showed that decompression, without cuff repair, is an effective method of treatment for their shoulder pain and limitation of function.

The postoperative management of the patients after acromioplasty alone is less demanding because there is no need to immobilize the shoulder to protect the repaired cuff. This allows immediate mobilization and earlier return of function, which is a great advantage for the elderly patient. We believe that for certain patients over 60 years of age, pain relief and sufficient shoulder function can be achieved by subacromial decompression alone, providing there is clear evidence of a supraspinatus and infraspinatus tear less than 3 cm. This clinical approach reduces the peri-operative risks and facilitates the rehabilitation in such patients.

**ISAKOS advances
the worldwide exchange
and dissemination of
education, research
and patient care in
arthroscopy, knee surgery
and orthopaedic
sports medicine.**



**International Society of
Arthroscopy, Knee Surgery and
Orthopaedic Sports Medicine**



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ISAKOS Young Investigator's Scholarship & Research Mentoring Program

Report from Lyon

The ISAKOS Young Investigator's Scholarship and Research Mentoring Program was developed by the ISAKOS Scientific Committee as a mentor-mentee program for young investigators with specific focus on developing countries. The Young Investigator Program seeks to stimulate research and education in developing countries, foster international collaboration, and promote academic excellence in arthroscopy, knee surgery and orthopaedic sports medicine.

The first group of Young Investigators were selected in early 2015 and invited to attend the ISAKOS Congress in Lyon, France. These are their personal accounts of their experiences.

Tiago Lazzaretti Fernandes, MD, MSc, PhD "in process", BRAZIL

I'm thankful for ISAKOS Young Investigator's Research Program, as it was a great opportunity to update my knowledge and improve technical skills related to a variety of topics!

- Knee laxity and rotation measurement of ACL deficient knee
- Importance of anterolateral compartment for rotational stability
- Concept of ACL remnant and ACL reconstruction outcome; ACL deficient knee associated with cartilage lesion
- Tissue engineering and cell therapy related to cartilage and ACL injury

Knee Laxity Measurement and Lateral Compartment

Prof. João Espregueira-Mendes headed a good discussion about knee kinematic measurements with Dr. Volker Musahl, Dr. Andrew Pearl and other colleagues.

Tracking pivot shift using invasive and non-invasive navigation systems and knee testing devices were shown to be adequate tools to quantify pivot magnitude. Authors demonstrated that these technologies were capable to evaluate and predict clinical outcomes for ACL deficient knees.

Another relevant topic was related to static and dynamic ACL deficient knee measurements of lateral tibial plateau. These devices presented a higher AP translation of lateral compartment with Lachman and pivot shift tests, which could be associated with iliotibial band transection, lateral meniscectomy, osseous conformity, capsule and extra-articular ligaments.

Other presenters also emphasized the importance of periphery or extra-articular components to restrain internal rotation in ACL reconstruction, as Hughston et al. described in 1979 lateral structures.

ACL Remnants and Clinical Outcomes

ACL remnant was also in highlight in the 10th Biennial ISAKOS Congress. Some authors presented data showing that 22.7% of ACL deficient knees have normal femoral insertion site. According to Nakase et al. (KSSTA, 2013) type III remnants contributed to AP and rotatory laxity control at 30°.

Presenters concluded that preservation of ACL remnants during reconstruction should contribute to knee stability, better graft revascularization and less tunnel enlargement. However, clinical outcome was not presented as different yet.

ACL Deficient Knee and Associated Lesions

The last, but not the least, topic of interest is discussed here. Professor Norimasa Nakamura and Professor Alberto Gobbi led a Symposium about cartilage and ACL injury treatment with regenerative medicine. After torn ACL, serum biomarkers for cartilage lesion increases. It shows the importance to treat these associate lesions due to osteoarthritis.

It was presented that stem cells and scaffold tissue engineering could be a future possibility for treating these concomitant lesions. Some sort of induced pluripotent cells were presented for cartilage regeneration (Yamashita, 2015)

In another Symposium, Professors João Espregueira-Mendes and Stephano Zaffagnini discoursed about chondroprotective effect of biomaterials as tissue engineered scaffolds and allografts.

Sunday Onimisi Salami, MBBS, FWACS, NIGERIA

I got one of the best mails in my life on February 24th this year from ISAKOS informing of award the of 2015 Young Investigators Award, I was excited and looked forward to attending the Congress and having an opportunity to meet great clinicians and scientists from all over the world.

Sadly for some reason I was refused visa to enter France. To say I was disappointed would be an understatement. As surgeons we constantly try to make the best of every situation bad or good. Thanks to technology I was able to attend the meeting with ISAKOS Scientific Committee via Skype! Despite not being there physically I could feel the energy level in the room. All the surgeons who interviewed me felt passionately about arthroscopy and sports medicine. Their key concern seemed to be to select a candidate who would teach others, and help to spread and advance the practice of this very exciting specialty. I was also able to catch some high points of the conference such as Dr. Fu's talk on the future of ACL surgery.

As a surgeon working in a developing country I feel getting a research scholarship will help in documenting the current practice of arthroscopy with the intention of changing behavior of surgeons. A properly done research project can also influence government to see the need to develop and fund more arthroscopy units, which would go a long way in improving and further spreading the practice of arthroscopy.

Some people say arthroscopic surgery in my country should only be for the rich who can afford to travel out of the country but we say no – arthroscopic surgery can be safely conducted in a developing country with good planning and resource utilization. Yesterday I saw a woman who had arthroscopic meniscectomy for a medial meniscal tear of 1 year duration 3 weeks back. She is a trader and has since returned to her job. She paid only 700 dollars due to our current programme of personally subsidizing the cost to expand the availability to more patients. When I looked into her eyes I saw the look of appreciation and amazement she told me people kept asking her where the “big” scar is, they could not believe she had a surgical operation – it was like magic to them! Our plan is to train more surgeons and also expand the programme to involve shoulder joint.

My main area of research will be arthroscopic treatment of meniscal injuries hoping to demonstrate improved outcomes and low morbidity.

Other challenges I have identified is poor knowledge on the part of general medical practitioners and also orthopaedic surgeons on common sports medicine conditions and aetiology of joint pain with loss of joint space on plain radiographs. We hope going forward to organize educational activities aimed at this target audience. Early diagnosis will lead to prompt treatment and better outcomes.

I will be glad if I am chosen for the ISAKOS research mentorship program. I believe this will greatly improve my practice, help me become a better ambassador of our great society, leading to more converts to this very exciting field of medicine.

Thank you!

Apply for an ISAKOS Arthroscopy Traveling Fellowship!

Dr. Masaki Watanabe developed the first device for minimally invasive surgery. Created in honor of Dr. Watanabe's accomplishments, the Masaki Watanabe Arthroscopy Traveling Fellowship Award is a new traveling fellowship sponsored by the ISAKOS Arthroscopy Committee. The fellowship will provide funding for two young arthroscopic surgeons to learn more about the current practice of arthroscopic surgery from well-respected experts in the field.

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ISAKOS Watanabe Arthroscopy Travelling Fellows 2015

Dr. Jorge Hurtado Fernández, PERU

Dr. Awadhesh Kumar Pandey, NAMIBIA

*Report prepared by Dr. Awadhesh Kumar Pandey

Fellowship Hosts:

Philippe Landreau, MD

Aspetar, Doha, QATAR

Andreas Imhoff, MD, Prof.

*Hospital Rechts der Isar University of Munich,
Munich, GERMANY*

Bertrand Sonnery-Cottet,

Centre Orthopedique, Santy, Lyon, FRANCE

We would like to express our deep gratitude to the ISAKOS Committee for selecting and giving us this great opportunity to participate in the highly valuable Masaki Watanabe Travelling Fellowship.

We would like to thank, from bottom of our heart, all our hosts: Philippe Landreau, Andreas Imhoff and Sonnery Cottet who really put forth great efforts to teach us about Arthroscopy and Sports Medicine.

Planning for ISAKOS Travelling Fellowship began almost a year ago in July 2014. We got the good news from the ISAKOS Office that we were selected for 2015 ISAKOS Watanabe Arthroscopy Traveling Fellowship. That moment was extremely pleasant. We spoke with Dr. Kevin Shea, chair of the ISAKOS Arthroscopy Committee confirming our invitations and they discussed in detail our primary areas of interest in Sports Medicine.

Our interests centered around advances and techniques in ACL and PCL reconstructions, meniscal repairs, and shoulder surgeries. The centers and hosts were planned accordingly.

ASPETAR, Doha, QATAR

Our fellowship trip started on May 25, 2015. We arrived in Doha early morning on the 26th of May. We were transported from Doha Airport to Aspetar where we were accommodated in their dorm rooms. We received a grand welcome reception from hospital staffs Khloud and Fawaz, and Dr. Philippe Khloud took us on a tour of Aspetar's facilities. We visited the Radiology, Physiotherapy and Surgery departments inside the hospital and Aspire Sports Academy, National Sports Medicine Programme (NSMP) all together well known as Aspire Zone. It was really was one of a kind – amazing, state of the art facilities.



01

On May 27, our day started with the morning Sports Medicine meeting with all kinds of clinical and radiological discussions. It was very informative. After meeting Dr. Philippe Landreau, he took us to Operation Theatre where we observed ACL reconstruction with minimally invasive technique for PTB graft harvesting, which was beautifully done and explained by Dr. Landreau. ACL Reconstruction was combined with Lateral Iliotibial Tenodesis which was really nice. Second case was ACL and PCL combined Reconstruction, ACL reconstruction with Hamstrings and PCL with Allograft. It was worth observing, considering the infrequent nature of simultaneous double reconstruction which we don't often get an opportunity to observe. We also observed Shoulder arthroscopy. Dr. Landreau is a very generous, modest and excellent teacher. He explained all the procedures thoroughly. We had enough time for discussion in theatre. On May 28, Dr. Landreau gave a nice presentation and lectures on shoulder Latarjet reconstruction, and taught us many secrets of successful Latarjet.



02



03



04

We visited the Physiotherapy and Rehabilitation Department which is full of modern equipment and facilities with world class physiotherapists. In the evening, Fawaz took us to watch the Qatar National Basketball Championship at Ali Bin Hamad Stadium where Dr. Landreau arranged VIP pass and seats for us. It was really a fantastic match.



05

On May 29, Dr. Landreau invited us for a dinner party at his residence, which was superb, especially with mind blowing French cognac and snacks. We met many hospital staff at the party. On May 30th, Dr. Landreau arranged and sponsored a tour of Doha for us where we visited all the important places, particularly the Qatar Foundation and Museum of Islamic Arts.



06

Over all, our stay at Aspetar was quite useful and we learned a lot from Dr. Philippe Landreau. We had nice accommodation, food, learning and party.

We departed from Doha for Munich on 31 early morning.

What we learned from Dr. Philippe Landreau:

- ACL reconstruction with Lateral Tenodesis in high level sports (e.g. Soccer) to protect reconstructed ACL, high grade Pivot shift with high rotational instability
- ACL (hamstring) + PCL (Allograft) double reconstruction
- Minimally invasive BTB graft harvesting
- Latarjet for anterior shoulder instability

Hospital Recht der Isar, Munich, Germany

We arrived in Munich on May 31 in the evening where we were accommodated in a hotel near the hospital. On June 1, we were welcomed by Dr. Andreas Imhoff and his residents. We joined the morning clinical meeting where we had an intense interactive discussion about preoperative complex cases especially high tibial and distal femoral osteotomy.



07

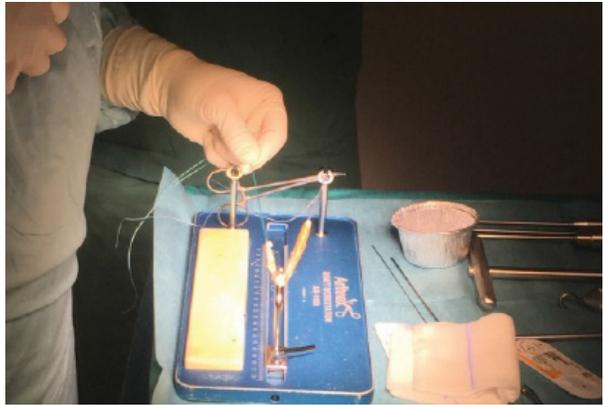
We joined the surgical theatre with Andreas and team. We managed to observe many cases on Day 1, particularly ACL reconstruction with femoral tunnel inside-out techniques and Endobutton fixation. After finishing in the surgical theatre, we joined clinics where we really learned a lot about basic physical examination and radiological diagnosis in sports medicine. Dr. Imhoff is an excellent teacher of the diagnostic aspects of sports medicine.

- 01 ASPETAR
- 02 | 03 | 04 FIFA Medical Center of Excellence
- 05 A reception in the home of our host, Dr. Philippe Landreau
- 06 Ali Bin Hamad Al Attiya Arena, VIP section, basketball final match of the Emir Cup
- 07 Hospital Recht der Isar

ISAKOS Watanabe Arthroscopy Travelling Fellows 2015 (continued)

On June 2, we again started our day with morning clinical meeting and went straight to OR, where we observed Latarjet shoulder operation, SLAP repair, and a double osteotomy in a complex valgus knee where Dr. Andreas simultaneously performed Tibial Medial Closed Wedge and Distal Femoral Lateral Open Wedge Osteotomy. It was a very interesting and educational case. The next, a Discoid meniscal repair in a 9-year-old girl, was really a unique case for us. We enjoyed watching complex posterolateral corner repair with PCL internal brace in a post-traumatic case.

On June 3, we had the good fortune to observe autologous cartilage implantation on femoral condyle localized full thickness cartilage defect. Due to our short stay in Munich, we did not have the opportunity to tour the city.



09

Lyon, France

On the evening of June 3, we departed from Munich to Lyon. We were warmly received at the Airport and dropped to our hotel near the ISAKOS Congress Centre.



08

Lessons Learned with Dr. Imhoff:

- Meniscal Repair–All inside-out technique
- Double osteotomy for complex valgus knee
- PLC repair+PCL internal bracing for complex knee dislocation soccer injury
- Physical examination of Shoulder: supraspinatus, subscapularis and biceps injuries
- Autologous chondrocyte implantation

On the morning of June 4, we received a warm welcome from Dr. Sonnery-Cottet and his fellows. We met various other fellows from Japan, Switzerland and Australia. We observed 8 ACL Reconstruction combined with Anterolateral Ligament (ALL) Reconstruction. It was our first exposure to the ALL reconstruction and a special learning experience. The unique style of Dr. Sonnery-Cottet for passing ACL graft through ACL remnant, ACL massage, outside-in femoral tunnel technique, and SAMBBA technique were really the great learning experience. He was operating and teaching us simultaneously. With his smooth surgeries and excellent techniques, we couldn't feel tired!



10



10

On June 5, we again observed almost same number of cases of ACL Reconstruction combined with ALL and complex Posteromedial Meniscal root tear repair. We also got a chance to see ACL revision surgeries with BTB graft and MPFL Reconstruction with suture anchors. During the operation, Dr. Sonnery-Cottet practically showed us ALL Isometric points proximal and posterior to lateral femoral epicondyle. He also showed us how to look for proper seating of Endobutton on Femoral shaft by arthroscope in the lateral gutter. After finishing the theatre, Dr. Sonnery-Cottet took us to his clinic and showed few of his post-op patients in rehabilitation.

**What we learned from Dr Sonnery-Cottet:
ACL & ALL KING**

- ALL reconstruction with isometric point. PPLFE
- ACL reconstruction outside-in technique femoral tunnel
- SAMBBA: Single-anteromedial bundle biological augmentation technique for ACL
- Hamstring graft remain attached to donor site
- ACL remnant preservation; ACL massage
- Complex posterior medial meniscus repair
- MPFL repair with suture anchors
- Revision ACL with BTB graft harvest by 2 incisions

On June 6–12, we attended the ISAKOS Congress, and had the opportunity to meet many amazing ISAKOS surgeons. We visited various places within Lyon, and were able to visit Paris and the Eiffel Tower.

Overall, the Watanabe Arthroscopy Travelling Fellowship proved to be a great learning and exposure in our career. All the centers we visited were state-of-the-art. The host surgeons are experts in the field of sports medicine and have a great capacity for teaching.

We thank ISAKOS again for giving us this great opportunity to travel and learn from experts.



11

- 08 With Professor Andreas Imhoff
- 09 In OR–Graft Preparation
- 10 Clinic with Dr. Imhoff–Physical Examination
- 11 In Theatre Day 1: 8 ACL, Day 2: 9 ACL with combined ALL reconstruction with 6 complex meniscal repair

ISAKOS Teaching Centre Fellowship Report

May 2015, Munich, Germany

While drafting my fellowship proposal to ISAKOS, I felt an exquisite interest to visit centers of excellence in the world, especially in Shoulder Arthroscopic surgeries. Shoulder surgeries are beginning to gain popularity in India and there couldn't be anything better than learning them from the masters.



01

I chose Klinikum Recht Der Isar, Technische Universität München, Germany under the aegis of Prof Andreas Imhoff for learning arthroscopic surgeries. I arrived at Munich for a 4-week fellowship, and was greeted by the Prof Imhoff and his team and guided about the schedule for the day and the week. It started with the early morning clinical meeting discussing about the cases accomplished and to be done. We then headed to the patient wards where Prof. introduced me to the conditions of the patients and the postoperative protocols. I was amazed to see the up to date logs and protocols at the Clinic. Later we headed to the state of art OR complex where daily about 7–8 cases are done. I had an extremely good experience when I scrubbed in with Prof. Imhoff for the repair of a massive Rotator Cuff tear. He explained me the complaints of the patient and the reason for the techniques used. The arthroscopic visualization was fantastic. After the surgery he explained me the postoperative protocol and other salient points of the surgery, including the “Do’s and Don’ts.”

01 Arriving at Klinikum Recht Der Isar,
Technische Universität München, Germany

02 In the Operating Room with Prof. Imhoff

03 Prof. Imhoff and Dr. Potdar



02

Every day we used to discuss various aspects of arthroscopic surgeries and I really appreciate the whole team under Prof Imhoff to clear my doubts and endow me with their experiences. During the 4-week duration of the fellowship I was able to independently observe and assist in more than 70 surgeries of the shoulder, knee, ankle and the elbow. I was able to assist in few non-arthroscopic surgeries like Patellofemoral Arthroplasty, Inverse shoulder arthroplasty, hamstring, rectus femoris and distal biceps ruptures apart from the usual arthroscopic procedures. I also observed cartilage surgeries like OATS of Knee and Ankle. During the end of my fellowship I also got an opportunity to visit the Arthrex headquarters at Freiham, Munich, where I could have a hands-on experience on a cadaveric shoulder.

During my stay I also managed to grab a glimpse of the Bavarian (South Germany) culture and tour beautiful city of Munich.

I would like to thank ISAKOS for giving me this opportunity and Prof Andreas Imhoff for teaching me the core principles and advanced techniques in Sports Orthopaedics.

Regards,

Prabodhan Potdar, MBBS, MS, DNB, INDIA
ISAKOS fellow (2015)



03

ISAKOS ISMF Conference

15th

Comprehensive Approaches
to Articular Cartilage Repair
and Hip Arthroscopy

January 23–25, 2015
Carlsbad, California

**INTERNATIONAL
SPORTS MEDICINE
FELLOWS CONFERENCE**

Attending the ISMF Conference was a great opportunity to meet the most advance techniques of hip arthroscopy and knee cartilage preservation procedures. ISMF Conference was divided to two separate knowledge blocks. Each one consisted of theoretical information followed by practical surgical skills lab. International lecturers provided latest information concerning labral tears, cartilage defects and peripheral musculotendinous region lesions of hip joint. Second section was focused on knee cartilage preservation techniques with case presentations. Lecturers created a field of open discussion between the faculty and fellows.

After each section surgical skills lab was introduced. Instructors gave us tremendous help in each step and gave an opportunity to try every procedure which was discussed during theoretical section.

Ultrasound lab provided us with basic skills of radiographic imaging in sports medicine. Thanks to our faculty we had an opportunity to try not only the basic program skills but also to detect pathologies not mentioned in the programme.

Bed and breakfast as I heard from other fellows is always great. It was the same this year. Beautiful accommodation and very tasty meals gave us a chance to talk about every aspect of our work in the unofficial way.

Thank you ISAKOS!

Lukasz Lipinski, MD, POLAND



16th

**INTERNATIONAL
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Comprehensive Approaches
to Articular Cartilage Repair
and Hip Arthroscopy

January 22–24, 2016
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Deadline: November 1, 2015

Multi-ligament Injured/Dislocated Knee: Could Amputation have been Avoided?



Bruce A. Levy, MD
 Professor
 Department of Orthopedic Surgery
 Mayo Clinic
 Rochester, MN, USA

This 16 year-old high school football player sustained a contact injury to his left knee while being tackled. He was unable to move his knee because of pain and on-field assessment demonstrated intact skin with no obvious deformity and a markedly positive Lachman exam consistent with complete anterior cruciate ligament (ACL) disruption. He was carried off the field and taken to the local emergency department (ED).

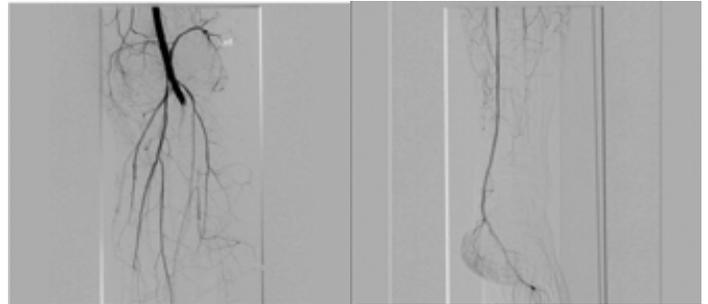
Initial ED examination documented strong 2+ symmetric pedal pulses and normal neurologic sensation and motor function. Presentation radiographs showed an anterior tibial plateau rim fracture that was reported as an "ACL avulsion fracture" (Fig. 1).



01

Rim fractures are a clue to more ominous knee injuries. The rim fracture occurred in this case when the knee joint dislocated and the femur rolled over the anterior aspect of the tibia and then, as with many knee dislocations, it spontaneously reduced.

The patient was placed in a knee immobilizer and was told to follow up with an orthopedic surgeon for his ACL tear. The patient, however, was writhing in pain, and was unable to be discharged because of the pain. Several hours later, with increasing pain and paresthesias, the medical staff noted his skin was cool, pulses were difficult to palpate and he was unable to dorsiflex his ankle. An angiogram was obtained which was positive for a complete popliteal artery occlusion but also showed collateral flow to the foot (Fig. 2).



02

It is well known that patients can have a palpable pulse distal to a major arterial lesion. This is an excellent case example where the popliteal artery was completely occluded but the collateral blood flow to the foot led to a palpable pulse.

At our institution we perform ankle brachial indices (ABI) for all high-energy knee trauma including known or suspected knee dislocations, tibial plateau fractures, distal femur fractures and floating knees. If the ABI is less than 0.9, we obtain a CT angiogram to rule out popliteal injury.

The patient was then transferred by air ambulance to our institution and arrived after 12 hours of warm ischemia. This delay was due to the lack of recognition of the severity of the knee injury (missed knee dislocation) and also a delay in recognizing the vascular injury (missed popliteal artery injury).



03a



03b

He then underwent emergent popliteal artery reverse saphenous bypass graft by the vascular surgery team, and four-compartment fasciotomies and a spanning external fixator by our orthopedic trauma team (Fig 3a). Exploration of the posterior popliteal space showed a completely transected common peroneal nerve (Fig. 3b).

With this nerve transection, a thorough neurologic examination would have demonstrated absent dorsiflexion and lack of sensation over the first web space and dorsum of the foot. Knowing that knee injuries that present with Peroneal nerve dysfunction are associated with vascular injuries, the ED medical staff may have been clued in to a more significant knee injury had they discovered the neurologic compromise.



04

Magnetic Resonance Imaging (MRI) was consistent with complete disruptions of the ACL, Posterior Cruciate Ligament (PCL), Fibular Collateral Ligament (FCL) and the posterolateral corner (PLC) structures (Fig. 4).



05

The patient then returned to the operating room 48 hours later for compartment irrigation and debridement at which point it was noted that all the muscles in all four compartments were necrotic (Fig. 5).

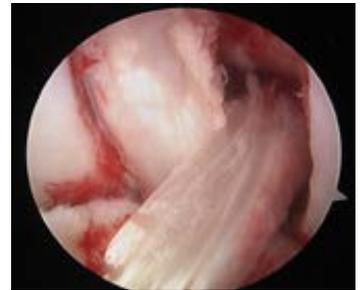
Our recommendation given the patient's age was to get control of the infected wounds with debridements and eventual coverage, regain range of the motion (ROM) of the knee, stabilize the knee with multi-ligament reconstruction and then perform a delayed below knee amputation (BKA). We felt this would give him better overall function compared to an above knee amputation (AKA).

It's important to note that the increase in energy expenditure for an AKA is roughly 65%, whereas for a BKA it's only 25%. This has significant long-term ramifications whereby the ability to ambulate will depend on the patients cardio-pulmonary health.

We successfully gained control of the soft tissues, and four months post injury we performed ACL/PCL/FCL and PLC reconstructions. For the ACL, we used a tibialis anterior allograft, single bundle, with suspensory fixation on the femur and interference screw fixation on the tibia. For the PCL, we used an Achilles tendon allograft, single bundle, transtibial technique. Extreme care was taken when drilling the tibial tunnel as the bypass graft was in close proximity (Fig. 6a). Final arthroscopic views of the ACL/PCL reconstruction are shown (Fig. 6b).



06a



06b

For the FCL and PLC, we performed the "Anatomic Technique" described by Laprade et al, using a split Achilles tendon allograft. This procedure necessitates a tibial tunnel and caution must be used as the bypass graft can be injured during this step (Fig. 7a). Intra-operative photos of the graft construct are shown (Fig. 7b).



07a



07b



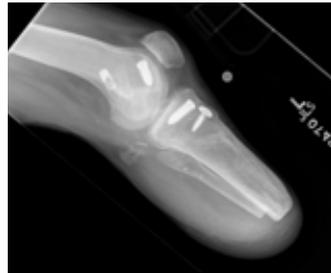
08

Multi-ligament Injured/Dislocated Knee: Could amputation have been avoided? (continued)

Eleven months later, the patient's knee demonstrated excellent stability and the patient successfully regained ROM (Fig. 9a). As planned, he returned to the operating room and underwent delayed BKA (Fig. 9b).

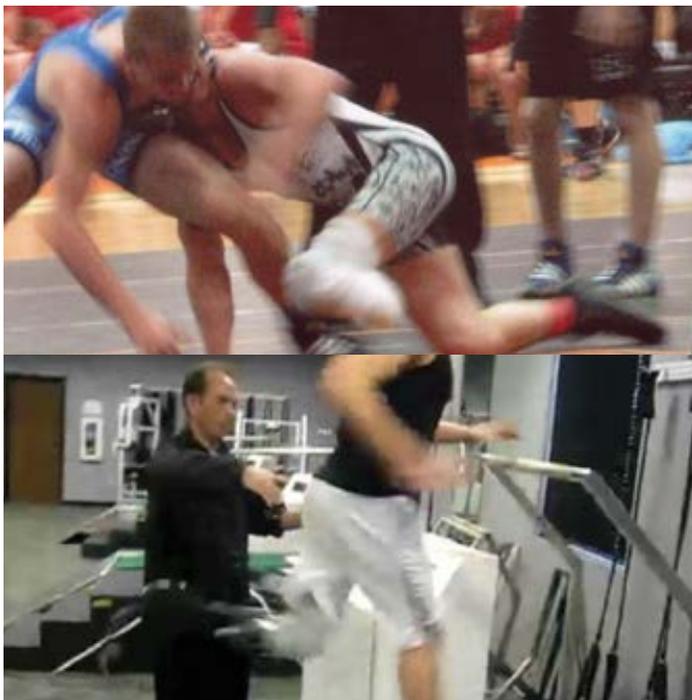


09a



09b

Six months later, he returned to sport and competed thereafter at the National level (Fig 10). Currently, he is fully functional with his Cheetah lower limb prosthesis and enjoys a healthy and active life.



10

To summarize, this is a case where numerous key findings were missed ultimately leading to amputation. A proper neurovascular assessment would have revealed the peroneal nerve palsy which would have been a clue to a more severe knee injury. Understanding how tibial plateau rim fractures occur also would have been a clue to more ominous knee injury. If a simple ABI had been obtained in the ED, it would have been abnormal which would have led to further advanced vascular imaging. More than likely, the delay in recognition and the 12 hours of warm ischemia would have been avoided. It's important to recognize that the multi-ligament injured/dislocated knee is a limb-threatening injury. Moreover, it's critical that we all learn from this case so we can prevent further patients from losing their limbs.

Disclosures:

Consultant: Arthrex, Inc.

Royalties: Arthrex, Inc.

Research Support: Arthrex, Stryker, Biomet, NIH

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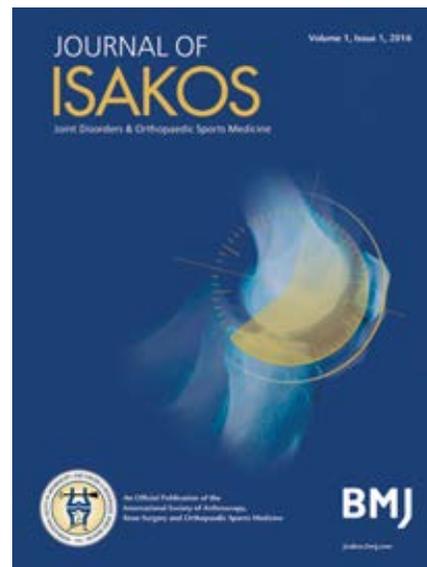
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C. Niek Van Dijk, MD, PhD
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BMJ

Vail International Complex Knee Symposium

June 25–27, 2015
Vail, CO, USA

The second Vail International Complex Knee Symposium in Vail, Colorado on June 25–27, 2015 was a huge success. In the spirit of ISAKOS, over 100 surgeons and faculty from all over the globe participated.

The theme of the course was on the anatomic principles, clinically relevant biomechanics and anatomic treatment of complex knee pathology. In a unique way of instructing participants, two to three lectures on a topic were immediately followed by a live surgical demonstration to reinforce the presented principles. All participants participated in cadaveric labs with a faculty member to delve into the procedures they wished to learn more about or reinforce their familiarity of a procedure.

Topics covered included anatomic-based reconstructions of the medial collateral ligament, posterior oblique ligament, posterior cruciate ligament, lateral collateral ligament, posterolateral knee, popliteus tendon, proximal tibiofibular joint, and tensioning of multiple ligament knee injuries. Complex meniscal and root repairs and meniscal transplants were also demonstrated, along with both open and arthroscopic trochleoplasties.

Course co-chairs were Lars Engebretsen MD, PhD of the University of Oslo and the International Olympic Committee and Rob LaPrade MD, PhD of the Steadman Clinic in Vail, Colorado. The course was sponsored by Smith and Nephew.

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Fortius International Sports Injury
Conference 2015
Queen Elizabeth II Centre
London, UNITED KINGDOM

October 13–14, 2015

Chair(s): Mary Jones

For further information, please contact:

Harriet Webb
Tel: 02 031952434
Fax: 02 030700106
www.fortiusclinic.com

Meniscus Pathology: Remove, Repair,
Replace

Istituto Ortopedico Rizzoli, Sala Vasari,
Bologna, ITALY

October 16, 2015

Chair(s): Stefano Zaffagnini, MD

For further information, please contact:

Nives Sagramola
Tel: 0039 055 2399112
Cell: 0039 338 3837991
Fax: 0039 055 4641490
www.sigascot.com

Rome Joins the World Shoulder Instability
Hotel Sheraton Roma
Rome, ITALY

October 24, 2015

Chair(s): Dott. Giovanni Di Giacomo

For further information, please contact:

Giulia de Leva
Tel: +39 06 328121
Fax: +39 06 3222006
www.romeshoulder2015.ega.it

2015 61st, 62nd Severance Arthroscopy
Cadaver Workshop
Anatomy Center,
Yonsei University Health System
Seoul, KOREA

November 7–14, 2015

Chair(s): Sung-Jae Kim, MD, PhD

For further information, please contact:

Sang Woo Jeon
Tel: +82 2 2228 5679
Fax: +82 2 363 1139
www.iseveranscopy.com

8th EFOST Congress
Politecnico di Torino
Torino, ITALY

November 27–28, 2015

Chair(s): Gian Luigi Canata

For further information, please contact:

Gian Luigi Canata
Tel: +39 0115817566 +39 3356377427
Fax: +30 0115805014
www.efost2015.org

International Conference—Modern
Technologies in Arthroscopy, Sports
Traumatology, Orthopedics and Rehabilitation
Hotel Complex
Moscow, RUSSIA

November 28, 2015

Chair(s): Dr. Oleg Milenin

For further information, please contact:

Oleg Milenin
Tel: 007-495-740-66-88
Fax: no
www.artromost.ru

2015 Orthopaedic Summit: Evolving
Techniques

The Bellagio Hotel
Las Vegas, NV, USA

December 2–5, 2015

Chair(s): Kevin D. Plancher, MD

For further information, please contact:

Kevin D. Plancher, MD
Tel: 203-863-2003
Fax: 203-863-2003
orthosummit.com

International Elbow Course
ICLO Teaching and Research Center
Arezzo, ITALY

December 3–5, 2015

Chair(s): Luigi Adriano Pederzini

For further information, please contact:

Luigi Adriano Pederzini
Tel: 39 0575 1948501
Fax: 39 0575 1948500
www.iclo.eu

V Congress (ISMULT) Italian Society of
Muscles, Ligaments and Tendons
Grand Hotel Salerno
Salerno, ITALY

December 4–5, 2015

Chair(s): Alfonso Maria Forte

For further information, please contact:

Irma Petretti
Tel: 39 339 4513269
Fax: 39 089 223938
www.ewcongress.it/ismult2015/

Symposium Minimal-invasive
Schulterchirurgie Tips und Tricks
Berlin-Brandenburgische Akademie der
Wissenschaften Veranstaltungszentrum
Berlin, GERMANY

December 11–12, 2015

Chair(s): Ulf Kuhlee, MD

For further information, please contact:

Julie-Amandine Lamotte
Tel: +49 30 32708233
Fax: +49 30 32708234
www.congress-compact.de

16th International Sports Medicine Fellows
Conference
Sheraton Carlsbad Resort & Spa
Carlsbad, CA, USA

January 22–24, 2016

Chair(s): Bert R. Mandelbaum, MD

For further information, please contact:

ISMF Course Office
Tel: 925-807-1190
Fax: 925-807-1199
www.ismf-conference.com

Orthopedic Surgery Controversies 2016
Laguna Cliffs Marriott
Dana Point, CA USA

January 22–23, 2016

Chair(s): Wesley M. Nottage, MD

For further information, please contact:

Kathryn Snell
Tel: 949-632-7055
Fax: 949-581-8410
orthopedicsurgerycontroversies.net

6th Advanced Course on Knee Surgery
Congress Centre Henri Oreiller
Val d'Isere, FRANCE

January 31–February 5, 2016

Chair(s): Drs. Francois Kelberine &
Philippe Landreau

For further information, please contact:

Corine Bensimon
Tel: 33 1 40 25 74 01
Fax: 33 1 42 25 87 43
www.kneecourse.com

Metcalf / AANA Combined Arthroscopy
Meeting
Sun Valley Resort
Sun Valley, ID USA

February 4–7, 2016

Chair(s): Robert T. Burks, MD

For further information, please contact:

Sue Duncan
Tel: 801-587-5457
Fax: 801-587-7149
www.metcalfmeeting.org

The Stephen Copeland Memorial Reading
Shoulder Course—Challenges and Revisions
in Shoulder Surgery
Royal Berkshire Conference Centre
Reading, UNITED KINGDOM

March 10–11, 2016

Chair(s): Prof. Ofer Levy and
Dr. Giuseppe Sforza

For further information, please contact:

Ofer Levy
Tel: +44 1189028116
Fax: +44 1189028138
www.mededevents.net/RSU

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35th Annual Cherry Blossom Seminar
Hyatt Regency
Tysons Corner, MD USA

April 7–10, 2016

Chair(s): M. Mike Malek, VA

For further information, please contact:

M. Mike Malek, MD
Tel: 240-338-5304
Fax: 703-289-1273
www.cherryblossomseminar.com

Return to Play–Football Medicine Strategies
Queen Elizabeth II Conference Centre
London, UNITED KINGDOM

April 9–11, 2016

Chair(s): Peter Brukner & Stefano Della Villa

For further information, please contact:

Giulia Indelicato
Tel: +39 5 12986878
www.FootballMedicineStrategies.com

4th Biennial Congress of Iranian Society
of Knee Surgery, Arthroscopy & Sport
Traumatology
International Convention Center, Milad Tower
Tehran, IRAN

May 17–20, 2016

Chair(s): Dr. Javad Parvizi

For further information, please contact:

Keivan Ahadi
Tel: 98 2188777176, 98 2188782322
Fax: 98 2188777176
www.ISKAST2016.com

17èmes Journées Lyonnaises de Chirurgie
du Genou–The ACL
Convention Centre
Lyon, FRANCE

September 22–24, 2016

Chair(s): Professor Elvire Servien

For further information, please contact:

Audrey Martin
Tel: 33 4 95 09 38 00
Fax: 33 4 95 093 801
www.lyon-knee-surgery.com

XIII Turkish Sports Traumatology, Arthroscopy
and Knee Surgery Congress
Wyndham Grand Istanbul Levent
Istanbul, TURKEY

November 22–26, 2016

Chair(s): Prof. Mehmet Asik, MD

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www.tusyadistanbul2016.org/en/

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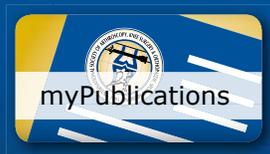
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