



ISAKOS

news letter

ISAKOS Newsletter 2012 • Volume II

Onderwys

Arsim

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Hezkuntza

Адукацыя

Образование

Educació

教育

Obrazovanje

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Uddannelse

onderwijs

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koulutus

éducation

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Εκπαίδευση

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eğitim

Osvita

Giáo dục

ISAKOS Counts Down to Toronto



ISAKOS hopes you will join us for the 9th Biennial ISAKOS Congress! This exceptional educational event will be held in the beautiful city of Toronto, Ontario, Canada on May 12–16, 2013.

Held at the Metro Toronto Convention Centre, the ISAKOS Congress is a unique educational event, bringing together the world leaders in the specialties of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine to engage in a dialogue about the advancement of technology and patient care. Known for its diversity, the ISAKOS Congress includes a variety of topics ranging from sports medicine and the treatment of athletes, to joint-specific surgical procedures. Instructional course lectures, symposia, paper presentations, electronic posters, lectures and debates will be used to explore every facet of ISAKOS' core specialties of arthroscopy, knee surgery and sports medicine.

The 9th Biennial ISAKOS Congress will include expanded educational content including four pre-courses. The Pre-Courses will be held at the Metro Toronto Convention Centre on Saturday, May 11th, and will offer something for every Congress attendee. The Pre-Courses include:

- *Advances in the Knee: Patellofemoral Instability, ACL Reconstruction and Meniscal Repair*
- *Clinical Research Methods: From Idea to Publication*
- *International Update on Surgical Controversies of the Shoulder and Elbow*
- *ISAKOS & FIFA: Key Issues and Challenges in Safety and Health in Soccer 2013*

ISAKOS Pre-Courses will require an additional registration fee for each course.

Additionally ISAKOS will offer a concurrent course focusing on Sports Rehabilitation. This course will be aimed at physicians, athletic trainers, physiotherapists and coaches concerned with the management or prevention of injuries to the athlete. Topics covered by this course will be viewed through the international perspective of a diverse and multinational faculty of orthopaedic surgeons and physical therapists.

Selected as "the best convention city in North America," the city of Toronto is a fantastic destination for an ISAKOS Congress. A wide variety of activities are available in the city and surrounding areas, including museums, sporting events, wine tasting, gourmet food, shopping and more! The Metro Toronto Convention Center is a less than 10 minute walk to many of the attractions downtown Toronto has to offer, including the CN Tower, the Toronto Blue Jays stadium, the Saint Lawrence Farmers Market, and the Toronto Harbor waterfront district.

We hope to see you in Toronto
for another exciting and
educational ISAKOS Congress!

9TH BIENNIAL
ISAKOS CONGRESS **2013**
MAY 12–16, 2013 • TORONTO, CANADA

www.isakos.com

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James Lubowitz, USA, Editor

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For more on the
**ISAKOS
CONGRESS,**
please see page 12



EDITOR'S NOTE



The Newsletter is the News

The focus of our ISAKOS Newsletter 2012: Volume II Editorial is the **Newsletter** itself.

First, we turned your attention to the ISAKOS website, at www.isakos.com. There you will find the Newsletter, as well as Newsletter archives, and in addition, a fully updated and upgraded, dynamic, informative, and educational website worthy of repeated exploration.

Next, in this issue of the Newsletter, we preserve old favorites and introduce new Features. Included, with some embarrassment, is the new Feature: *Worst Case Scenario*, where contributors share some of their worst complications. This is embarrassing because, as Editor-in-Chief, leadership was required, especially when sharing a complication. As a result, as your Editor-in-Chief, it is I who has "volunteered", (or perhaps I was "volunteered" by the Newsletter Editorial Board) to contribute the first case, worst case for this new feature. In the future, members are invited to submit their *Worst Case Scenario* complications for publication in the ISAKOS Newsletter. Submissions may be sent by electronic mail to newsletter managing editor Katie Anderson at katie@isakos.com.

Also, among the fine Features in your current Newsletter, be sure not to miss is the poetic ode to Toronto, Canada by Newsletter Committee member, Kivanc Atesok, MD. Titled *Maple Leaves in Spring: A Whisper of Serenity in the Wind*, Atesok reminds us that there is more to life than work. As I personally grow more and more excited about attending the May, 2013 ISAKOS Congress, I look forward not only to the educational opportunity and social benefits derived from reconnecting with our ISAKOS family; but also to the cultural opportunity that a springtime visit to the dynamic, international metropolis of Toronto, Ontario, Canada will offer. Therefore, I look forward to seeing you next year in Toronto. In the interim, enjoy the current issue of your ISAKOS Newsletter.

James H. Lubowitz, MD
ISAKOS Newsletter Editor, 2011–2013

**What are
all these codes
about?**

ISAKOS has included QR Codes throughout this Newsletter to link you to the latest information on our website! Simply scan the code with the bar code reader app on your smartphone and get connected to up-to-date ISAKOS content!



"Think Big and Do Big Things"

This simple quote has become the cornerstone of my presidency with ISAKOS. As has been stated in previous Newsletters – we stand on the shoulders of giants, both professionally in our various specialties, and also those of our early ISAKOS leaders. Now is the time for ISAKOS to "**Think Big and Do Big Things!**" ISAKOS is hard at work on a variety of initiatives that we are very excited to share with our membership.

Many of these ideas are years in the making, and we are thrilled to have them come to fruition as ISAKOS emerges as the world leader in education for Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine.

It has been a busy year thus far for ISAKOS. The Executive Committee had the opportunity to visit the physical location of the ISAKOS Office in San Ramon, California immediately preceding the American Academy of Orthopaedic Surgeons meeting in February 2012. This was the first opportunity for most members of the Executive Committee to visit the Office, and we had a very productive day reviewing both what ISAKOS has recently accomplished, and what projects are still to come.

Our hard work continued for two days following our visit to the Office with ISAKOS Committee meetings held in San Francisco, California during the AAOS Annual Meeting. More than 15 ISAKOS Committees held meetings over two days. These meetings were very productive, and full reports on the Committees' activities can be found on page 8 of this Newsletter.

My efforts on behalf of ISAKOS continued with a visit to Mumbai, India on March 24–25, 2012 for the ISAKOS & India Arthroscopy Society combined meeting on *Surgical Technique and Case Presentations for the Knee*. This course combined case presentations with didactic lectures to provide an optimal learning environment for more than 400 Indian surgeons. ISAKOS Industry Partners Arthrex, Smith & Nephew and Stryker provided model workshops and special lectures to supplement the scientific program. A special thanks to Joao Espregueira-Mendes, Willem Van der Merwe, Vic Goradia, and Luigi Pederzini for their participation as faculty in this meeting. Additional thanks to Parag Sanchetti for his tireless efforts as our local host! For a full review of our experience in India, please see page 40.

ISAKOS continued our around the world journey with the *9th International Forum on Orthopaedic Sports Medicine & Arthroscopic Surgery*. This course was a collaborative effort between ISAKOS and the Chinese Sports Medicine Society and the Chinese Orthopaedic Association. Additional support for the meeting was provided by the Asia Pacific Orthopaedic Society for Sports Medicine and the Arthroscopy Association of North America. The IFOSMA was attended by nearly 1,000 international orthopaedic surgeons. The ISAKOS Presidential Line, including Masahiro Kurosaka, Philippe Neyret and myself, participated as faculty in addition to many other international experts. ISAKOS would like to thank our industry partners Arthrex, DePuy Mitek, Smith & Nephew and Stryker for their support of the hands-on Shoulder and Knee cadaveric workshops. For a full report on the IFOSMA, please see page 36.

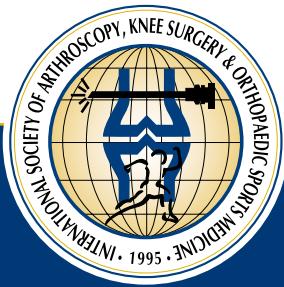
As ISAKOS travels around the world, we would also like to take an opportunity to remind our members about the ISAKOS Global Link online education portal. The ISAKOS Global Link has recently expanded to include online courses based on Surgical Demonstrations presented during the 2011 ISAKOS Congress. To take these courses and explore the ISAKOS Global Link, please go to www.isakos.com/globallink.

Thank you for your support of ISAKOS, whether you are attending an ISAKOS Approved Course, teaching at an ISAKOS Teaching Center, participating in an ISAKOS cooperative course, or submitting an abstract for the 2013 ISAKOS Congress. We hope you continue to "**Think Big and Do Big Things!**" and we look forward to seeing you at the 2013 ISAKOS Congress!

Best Regards,



Moises Cohen, MD, PhD
ISAKOS President 2011–2013



ISAKOS WELCOMES NEW MEMBERS

Amr Ahmed Abdelrahman, MD,
EGYPT

Asparouh Asparouhov, BULGARIA

Emmanuel A Audenaert, MD,
BELGIUM

Mario Arthur Rockenbach Binz, MD,
BRAZIL

Carlo Angelo Virrey Borbon, MD,
FPOA, PHILIPPINES

Leandro Machado Dias E Silva, MD,
BRAZIL

Kim Doo Sup, MD, PhD, KOREA

Mingchang Du, PhD, CHINA

Mosbah Salem Elkhodary, MD,
UNITED ARAB EMIRATES

Bilal Elyafawi, MD, UNITED ARAB
EMIRATES

Albert Cesar Silva Faller Jr, MD,
PHILIPPINES

Stephen J. French, MD, FRCS(C), Dip.
Sports Med, CANADA

Atsushi Fukai, MD, PhD, JAPAN

Facundo Federico Gigante, MD,
ARGENTINA

Gonzalo Godoy, COLOMBIA

Shiguo Gong, MD, CHINA

Juergen Hoehler, MD, GERMANY

Febry Siswanto I Gusti Made, MD,
INDONESIA

Tomoya Iseki, MD, JAPAN

Philip Quentin Johnson, MD, USA

Krister Julinder, DVM, SWEDEN

Alper Kaya, MD, TURKEY

David Knourek, MD, CZECH REPUBLIC

Abhay Mohan Kulkarni, MS
(Orthopaedics), INDIA

Victor Luiz Baitelli Leite, BRAZIL

Zhihan Li, MD, CHINA

Bernard Kuo Hung Lin, MBBS,
MRCS(Edin), MMED(Ortho), FRCS
(Edin) (Ortho), SINGAPORE

Timothy Douglas Lordling, MBBS,
FRACS Orth, AUSTRALIA

Paul Marks, BA, MD, FRCSC, CANADA

Paul André Martineau, MD, CANADA

David McCall, MD, U.S. MINOR
OUTLYING ISLANDS

Julian E Molina, MD, VENEZUELA

Albertus Djarot Noersasongko, MD,
INDONESIA

Mauro Núñez, MD, COSTA RICA

Bandulasena Palapitige, MBBS, MS,
FRACS, AUSTRALIA

Steve Park, MD, KOREA

Enrique Leonardo Crisostomo Pasion,
MD, FPOA, PHILIPPINES

Sachin P. Patil, MS, INDIA

Jayaprasad Savaranna Pedda
Bhemanna Vari, MS (Ortho), INDIA

Hannu Penttilä, FINLAND

Esteban Rozzi, MD, ARGENTINA

Miguel Eduardo Sanchez Otamendi, MD,
VENEZUELA

Sanil Sathyadasan, Master of Surgery
(ortho), UNITED ARAB EMIRATES

Aniket Nitinkumar Shah, MS, INDIA

Prahalad Kumar Singhi, MBBS,
D'ORTHO, DNB (ORTHO), INDIA

Salami Onimisi Sunday, MBBS,
FWACS, NIGERIA

Hisayoshi Tachihara, MD, PhD, JAPAN

Eduardo Campelo Tavares, MD,
BRAZIL

Humberto Verdugo, MD, CHILE

Anthony Viste, MD, FRANCE

Clive White, MRCS(London),
FC(Orth)SA, MMed(Orth)(UCT),
SOUTH AFRICA

Mohamed Mostafa Zada, Professor
- MD Orth (SCU), MCh Orth
(Liverpool), EGYPT

ISAKOS Mission Statement

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





FRANCESCO FRANCESCHI MD, PhD

Campus Biomedico University of Rome
Rome, ITALY
ISAKOS Member Since 2009

Q & A

I like cooking, particularly pasta dishes and Mediterranean foods.

Q Favorite hobbies.

A In my free time, I like listening to rock music, playing guitar, and reading about contemporary architecture.

Q Family status.

A I am in a relationship and the father of a 14 year old son and 12 year old daughter.

Q Preferred sport and beloved team.

A I play tennis twice a week and I am a fan of the Lazio football team.

Q What do you like most with your country/home town?

A I love Italy for its world famous life-style, its friendly and lovely people, I also enjoy the history of the Roman Empire, Italy's foods and landscapes.

Q When did you first hear about ISAKOS and what was your first congress?

A I heard about ISAKOS for the first time in 1992 and delivered my first lecture at the Congress in Buenos Aires in 1997.

Q What was your experience from the meeting attended?

A I had an amazing experience which allowed me to enhance my scientific knowledge, surgical skills and establish international scientific relationships.

Q What is your main area of expertise and where did you initially gained this one?

A Shoulder arthroscopy is my main area of expertise, which I gained in 1994.

Q What is your preferred surgery? Why?

A My main field of interest is the arthroscopic management of shoulder instability.

Q Which study which you have read lately made you change your clinical or surgical approach to a specific entity?

A The study which has most impressed lately is the paper by ISAKOS Members Burkhardt and Kibler which is a report on the sick scapula syndrome.

Q Why did you decide to be a sports surgeon and why did you pick up the area you are involved in?

A I decided to become a sport orthopaedic and trauma surgeon because I love sports and I have practiced sports all my life. After my graduation, I had several options for specialization and decided to focus on shoulder disorders because it was a field of growing interest.

Q A nice case you have had lately which made you think, read or research about it or left you with a "after work" thoughts or emotions.

A I have recently managed a case of rotator cuff recurrence by using a balloon.

Q What would you do if you would not be an orthopaedic surgeon?

A I would be an architect.

Q If you had the power to change something in our field—what would it be and why?

A A man of the govern to give more importance to minimally invasive procedures. If I could change something in my field, I would try to emphasize the need to use minimally invasive procedures as often as possible.

Q What studies are you currently involved in?

A At present I am involved in clinical studies. In addition, I am trying in concert with other colleagues to develop new guidelines for the management of shoulder instability by using bone block technique.



MEMBERS

NEW MEMBERS

We depend on our members to make the society what it is today and to embrace the potential it has in the future. It is the responsibility of members to recruit NEW MEMBERS to join ISAKOS and its goal to reach across the world.

Download an application online at www.isakos.com or contact the ISAKOS office at (925) 807-1197 for a NEW MEMBER Recruit Packet.

ISAKOS MEMBERSHIP BY CATEGORY

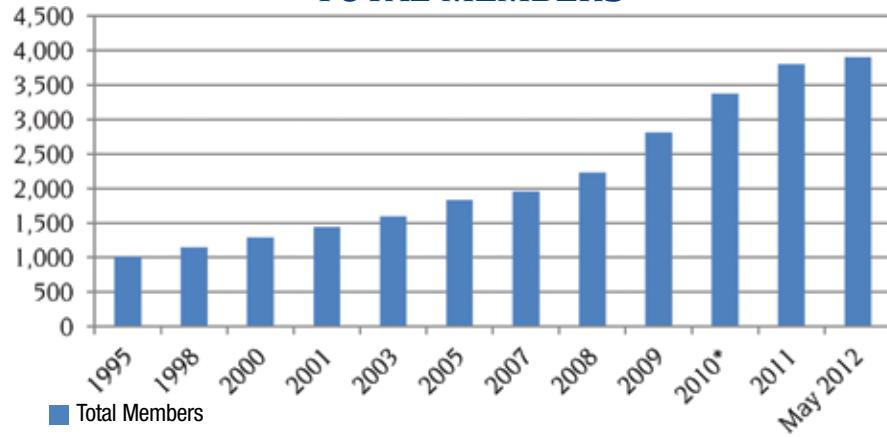
| # of Members | Category |
|--------------|------------------------|
| 1,967 | Active |
| 17 | Affiliate |
| 25 | Applicant |
| 775 | Associate |
| 890 | Corresponding |
| 192 | Emeritus |
| 14 | Honorary |
| 22 | Fellow |
| 3,902 | - Total Count - |

ISAKOS MEMBERSHIP BY GROWTH

| Year | Total Members |
|----------|---------------|
| 1995 | 1,005 |
| 1998 | 1,141 |
| 2000 | 1,282 |
| 2001 | 1,437 |
| 2003 | 1,598 |
| 2005 | 1,828 |
| 2007 | 1,958 |
| 2008 | 2,231 |
| 2009 | 2,809 |
| 2010* | 3,374 |
| 2011 | 3,798 |
| May 2012 | 3,902 |

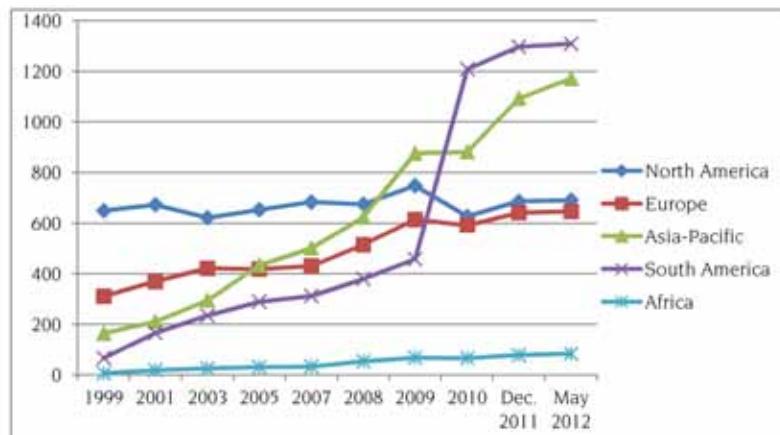
* ISAKOS frequently suspends members who have failed to pay their ISAKOS Membership Dues.

TOTAL MEMBERS



ISAKOS MEMBERSHIP GROWTH BY REGION 1999 TO MAY 2012

| Growth by Region | 1999 | 2001 | 2003 | 2005 | 2007 | 2008 | 2009 | 2010 | Dec. 2011 | May 2012 |
|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| North America | 650 | 673 | 622 | 653 | 684 | 675 | 748 | 627 | 687 | 691 |
| Europe | 311 | 369 | 421 | 418 | 430 | 514 | 615 | 592 | 642 | 647 |
| Asia-Pacific | 165 | 211 | 295 | 433 | 500 | 624 | 876 | 881 | 1094 | 1172 |
| South America | 66 | 166 | 235 | 289 | 312 | 379 | 457 | 1209 | 1297 | 1309 |
| Africa | 6 | 18 | 25 | 30 | 32 | 53 | 67 | 65 | 78 | 83 |
| TOTAL | 1,198 | 1,437 | 1,598 | 1,828 | 1,958 | 2,245 | 2,763 | 3,374 | 3,798 | 3,902 |





Search for something amazing today!

Anatomy

Sports Medicine

Keyword

Visit the **ISAKOS Global Link** to view **Featured Surgical Skills Demonstrations** from the **2011 ISAKOS Congress!**



Featured demonstrations include Anatomic Single-Bundle Hamstring ACL Reconstruction with Dr. Charles H. Brown Jr., MD



All-Inside ACL R reconstruction with Dr. James Lubowitz, MD



Arthroscopic Double-Row Rotator Cuff Repair with Dr. Stephen Burkhart, MD



Advanced Arthroscopy of the Ankle with Dr. Annunziato "Ned" Amendola, MD

YOUR COMMITTEES AT WORK

DEVELOPMENT COMMITTEE



As ISAKOS continues to grow, our need to provide resources for Education and Research activities also grows. When we started our recent ISAKOS Global Connection Campaign, the goal was to raise enough funds to provide sustainable funding for all of our initiatives. Part of our efforts required organizing and prioritizing all of the wonderful educational and research initiatives within our organization. Many individuals and committees have provided significant input in allowing us to build an inventory of these activities which has helped with our fundraising efforts. For this, I would like to thank our dedicated ISAKOS members for their input. However, our job is not done and we need to continue to define what our short-term and long-term goals and needs are in order to match our resources appropriately. As part of this ongoing process, the ISAKOS Development Committee convened during the 2012 AAOS meeting in San Francisco, California, and discussed many of the achievements and new goals leading up to the 2013 ISAKOS Congress in Toronto, Canada.

Fund development has been divided and focused into three main areas; industry partners, member initiatives, and external funding sources.

INDUSTRY UPDATE

The Campaign has secured multi-year commitments from many of our industry partners including; Arthrex, ArthroCare, Biomet, Breg, ConMed Linvatec, DJO, DePuy Mitek, Smith & Nephew, Stryker Orthopaedics, Tornier and Zimmer.

INDIVIDUAL GIVING

In addition to traditional avenues for ISAKOS member donations, a new initiative called "The Godfather" Campaign has been developed. Many of our members and leaders have already become members of this new prestigious group. Current members of ISAKOS can sponsor a deserving member from any region in the world for five years. A portion of his or her multi-year pledge would be allocated specifically towards the individual's membership and attendance at one ISAKOS Congress. The minimum donation to be included as a member of this group is \$5,000, or \$1,000 per year for five years. The donor would then be recognized as a Global Connection Campaign supporter, and specifically as an ISAKOS Godfather. Benefits to Godfathers include special membership recognition, an invitation to a special reception with new members at each ISAKOS Congress, an ISAKOS Godfather ribbon and pin, and more membership benefits to be planned. This is a means for our members to contribute to the society,

allow for the development of new members and to establish an exclusive group for the advancement of our society. Godfather Membership recipients will apply for a membership scholarship, that will include ISAKOS Membership for five years, and free Congress registration for one Congress during their membership term.

EXTERNAL FUNDING

One of the areas that has not been well explored in the past is the opportunity to pursue support outside of our society members and industry partners. To this end, multiple partners and projects have been investigated to see what possibilities exist to provide a resource for ISAKOS. Partners include our own patients, international sport governing bodies, international businesses as well as internet-based ideas. As these ideas and possibilities become more developed, we will report our progress. It is clear that if we are to engage the outside world in supporting our initiatives, we will need direction and advice from personnel outside of our organization as to how to proceed and manage the funding—so that there is full accountability and distribution with a fair and transparent mechanism.

As promised, all of the raised funds to date are being directed towards research and educational endeavors.

CAMPAIGN FUNDS USED FOR:

Most Recently

ISAKOS & India Arthroscopy Society: Surgical Technique and Case Presentations for the Knee

• March 2012, Mumbai, India

ISAKOS, COA & CSSM Combined Meeting: 9th International Forum on Orthopaedic Sports Medicine & Arthroscopic Surgery

• April 2012, Shanghai, China

ICRS and ISAKOS Combined Symposium on Joint Preservation

• May 2012, Montreal, Canada

Upcoming

• October 2012, Naples, Italy

(SIGASCOT and ISAKOS Combined Meeting)

• October 2012, Cartagena, Columbia

(SLARD and ISAKOS)

• November 2012, Jaipur, India

(AAC, IAS and APOSSM: Arthroscopy and Sports Medicine)

• November 2012, Beijing, China

(Chinese Orthopaedic Association Annual Meeting – ISAKOS Specialty Day)

RESEARCH

Campaign donations have been allocated towards the new ISAKOS Research Grants Program, developed by the ISAKOS Scientific Committee. These grants have been established to foster international collaborative research with multi-national centers participating.

YOUR COMMITTEES AT WORK

ONLINE EDUCATION

Campaign funds have enabled ISAKOS to enhance the content of ISAKOS Global Link, the Society's online education center.

The past 2 years has been an exciting time for the development of our organization, and our committee feels proud to be a part of all the exciting growth. We are only scratching the surface of what can be accomplished, and I am convinced that with our members support, and our new initiatives, the possibilities are endless. Thank you for your support, hard work and dedication.



EDUCATION COMMITTEE



The ISAKOS Education Committee met during the AAOS Meeting on February 7th in San Francisco, California, USA. The Committee Charges for 2011-2013 Term & ISAKOS Strategic Plan were reviewed based on the ISAKOS Strategic Plan. It is the charge of the Education Committee to:

"Develop a multi-facet and multi-dimensional education program, meeting the scientific, clinical and practice-related needs for members" – Be the World Umbrella on Arthroscopy, Orthopaedic Sports Medicine and Knee Surgery

- Create a comprehensive CME program
- Review and approve ISAKOS Teaching Centers and Courses
- Identify world gaps in education and training
- Develop Level III Courses
- Long-term education strategy

Emphasis was laid on the need to update the requirements for ISAKOS Teaching Centers. ISAKOS Teaching Centers will be receiving an Information Update form this summer, as well as notification of the new requirements. Additionally, thanks to funding by the ISAKOS Global Connection Campaign, ISAKOS will begin offering Teaching Center Scholarships to ten students annually to visit ISAKOS Teaching Centers. Each scholarship will be for \$2,000, and applicants will visit a Teaching Center for 1–4 weeks depending on the interest of the student. Local expenses will be supported by the Center being visited.

Additionally, the Education Committee has increased the standards for ISAKOS Approved Courses to include a higher scientific level.

The ISAKOS Fellowship & Residency Program Registry is now available online. Any Fellowship or Residency Program specializing in Arthroscopy, Knee Surgery or Orthopaedics and Sports Medicine are invited to apply. Fellows and Residents in registered programs will receive a discounted ISAKOS membership for 18 months.

The Education Committee is thrilled to announce that the ISAKOS Global Link is now open! New content includes online surgical demonstration video mini-courses from the 2011 ISAKOS Congress. These mini-courses are not CME accredited, but do include pre- and post-course questions.

The Education Committee would like to congratulate our educational partners with the India Arthroscopy Society and the Chinese Orthopaedic Association and Chinese Society for Sports Medicine on the success of their recent cooperative meetings with ISAKOS. These courses were both major successes, thanks to the diligent work of our local partners. More information on these courses can be found in the back of this ISAKOS Newsletter.

The ISAKOS Education Committee will continue to strive to have ISAKOS be **the resource** for international surgical skills education in our specialties of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine.

As Chair and Co-Chair of the ISAKOS Education committee, we would like to thank all the committee members for their commitment and hard work. It is a fantastic team that has been able to fulfill and achieve education committee goals! Congratulations to all of you and keep up the good work!

João Espregueira-Mendes, Alberto Gobbi, Mark D. Miller



ISAKOS President Moises Cohen with the ISAKOS group in Mumbai

YOUR COMMITTEES AT WORK

KNEE COMMITTEE



The Knee Committee is trying to improve internal communications and advance the worldwide exchange and dissemination of information. The Knee Committee is sponsoring several projects to advance and disseminate scientific information. The committee is developing a format for one of the ISAKOS \$100,000 multicenter grants to be conducted by members at two or more international sites by members. The mechanism for selecting and coordinating the awards will be developed in conjunction with the Scientific Committee and the ISAKOS Board of Directors. The committee is also planning an annual educational knee surgery course in a less developed country. The first meeting will be held in South Africa and affiliated with the University of Uganda. The course will be chaired by Willem van der Merwe.

The primary educational activity of the Knee Committee this year has been planning the Pre-Course entitled **Advances in Knee: ACL Reconstruction, Patellofemoral Instability and Meniscal Repair** for the 2013 Congress in Toronto. The chairs, Allen Anderson, David Parker and Willem van der Merwe have put together a program with excellent speakers on the topics of the Pediatric ACL, ACL Revision, and ACL and Osteoarthritis. The patellofemoral topics include Patellofemoral Basic Science and various surgical techniques to treat dislocation, including tibial tubercle osteotomy, MPFL reconstruction and trochleoplasty. The topics of meniscal repair include Current Concepts and Meniscal Transplantation. The afternoon session will feature surgical demonstrations by international experts. This will be an exceptional course and well worth arriving in Toronto a day early.

The Knee Committee was invited by Francois Kelberine, EFOST President, to send two members to a closed knee meeting in London to develop a consensus statement on Return to Sports After ACL Reconstruction and Patellofemoral Dislocations. Elizabeth Arendt and Martin Lind will represent ISAKOS at this important meeting.

The next meeting of the Knee Committee will be held during the AAOS meeting in March 2013.

Allen Andersen, Willem Van de Merwe, David Parker

UPPER EXTREMITY COMMITTEE



The Upper Extremity Committee has been very active during this period. The two main projects were fully accomplished with great success.

The Classifications and Scores Consensus Project, led by the Arthroscopy and the Upper Extremity Committees, is almost finished and the results will be published shortly.

In Buenos Aires, from April 16 to April 19, fifteen members of the UEC met for the **Biannual UEC Closed Consensus Meeting**. We had two full days for an in-depth review of the main controversial topics in **Rotator Cuff, Tendinosis, Impingement, Ruptures and Reconstructions**. The schedule was to have 10 minute lectures followed by 20 minutes of discussion based on what is known, what isn't and the best evidence for each concern. The UEC members' commitment was outstanding and a thorough analysis of the controversial topics clarified the concerns and paved the way for future research direction.

The consensus statements and conclusions are being processed and the committee is working on the best way to share them with the ISAKOS members. The original lectures with audio will be uploaded to ISAKOS Global Link and the debated topics will be published soon.

The Upper Extremity Committee, which had a strong involvement at the ISAKOS Congress in Rio de Janeiro last year, is working hard to participate at the upcoming ISAKOS Congress in Toronto. We truly recommend this meeting point next year for all of you interested in the upper extremity issues.

Guillermo Arce

ISAKOS Upper Extremity Committee, Chairman
2011-2013

**Are you part of the
ISAKOS
Social Network?**



YOUR COMMITTEES AT WORK



From left to right; Greg Bain, Dan Guttmann, Gus Mazzocca, Buddy Savoie, Jaap Willems, John Uribe, Tom Ludvigsen, Ben Kibler, Giovanni Di Giacomo, Eiji Itoi, Klaus Bak, Benno Ejnisman, Francisco Vergara, Alberto Pochini, Yonk Sik Yoo, Guillermo Arce and Vicente Gutierrez.

SCIENTIFIC COMMITTEE



The Scientific Committee has been hard at work on a variety of ISAKOS initiatives. Most notably is the development of the ISAKOS & OREF Research Grants initiative. ISAKOS is pleased to partner with OREF to fund a multi-center, multi-continent research grant. Applications are currently under review and we look forward to announcing the winners at the end of the summer.

The ISAKOS Scientific Committee has also developed a pre-course on **Clinical Research Methods** for the 2013 ISAKOS Congress in Toronto. Chaired by Robert Marx and Stephen Lyman, this course promises to be a great day focused on all aspects of clinical research ranging from conceiving and preparing your research; studies and evaluation; outcomes & clinical trials; evaluation, variables and statistics; and presenting data. This course will cover all aspects of medical research and will not be limited strictly to the study of arthroscopy, knee surgery and orthopaedic sports medicine.

The ISAKOS Scientific Committee has recently completed a symposium during the International Cartilage Repair Society Annual Meeting. The symposium on Joint Preservation was chaired by Nori Nakamura. A full report on ISAKOS' participation at the ICRS Meeting can be found on Page 38 of the ISAKOS Newsletter. An additional symposium will be held with ICRS and ISAKOS during the 2013 ISAKOS Congress in Toronto.

Robert Marx, Norimasa Nakamura, Stefano Zaffagnini



The UEC preparing consensus statements at Villa Maria, Buenos Aires.



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9TH BIENNIAL

ISAKOS 2013



MAY 12–16, 2013 • TORONTO, CANADA

Call for Abstracts

ONLINE ABSTRACT SUBMISSION

The International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) is pleased to announce the Call for Abstracts for the 2013 Congress.

To submit an abstract, visit the
2013 ISAKOS Congress website
www.isakos.com/2013congress



Submit Online at
www.isakos.com/2013congress



Abstract Submission Deadline: September 1, 2012

Awards

Fellowships

ISAKOS Awards

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 1st, 2012.

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 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. Thus, orthopaedic residents and fellows, with a study related to arthroscopic treatment are encouraged to apply for this award.

Richard B. Caspari Award

Sponsored by DePuy Mitek

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 Richard B. 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 abstracts and presentations in the subject of the upper extremity.

Scientific Research Award

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 Scientific Research Award was created with the intention to stimulate and reward abstracts and presentations in the subject of Scientific Research.

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, Professor Albert Trillat was one of the pioneers 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 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.

ISAKOS Fellowships

The Patellofemoral Traveling Fellowship

Sponsored by the Patellofemoral Foundation, Inc. and DJO 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

This 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.





Explore Toronto



As you may already know, the 2013 ISAKOS Biennial Congress is being held in Toronto, Canada. If you plan on attending, it is the perfect opportunity to explore the exciting sites and take in this beautiful city!

Toronto is the provincial capital of Ontario as well as the largest city in Canada. It is considered to be one of the most cosmopolitan cities in the world—a place where international ideas intersect with Canadian culture. With over 2.6 million residents, it is the fifth most populous city in North America. A center of rare openness, warmth, energy and style, Toronto is enriched by the fusion of traditions, passions and perspectives on life of the more than 100 cultures found there.

A city of contrasts, Toronto's skyline includes the CN Tower—one of the Modern Wonders of the World—and glass skyscrapers juxtaposed with historic limestone facades. CN Tower is the second tallest free standing structure in North America. A glass elevator lifts you to the top of this 1,815 foot structure, where a glass floor offers spectacular views of the city. If you are an art lover, visit the Art Gallery of Ontario which houses over 73,000 works of art. If history is more your thing, check out the Edwardian castle of Casa Loma, former estate of Canadian financier, Sir Henry Pellatt. Even the Design Exchange, Canada's national design museum, is actually the original historic Toronto Stock Exchange building. Wait, there's more! Toronto even has three main sections of beach along Lake Ontario as well as the Toronto Islands that offer a paradise-like break from the hustle and bustle of the city.

No trip to Toronto is complete without a visit to some of the city's impressive museums. Ten historic museums work collectively to inspire passion for the city they are located in. These educational venues present Toronto's history in ways that engage visitors from all over the world. Please visit www.toronto.ca/culture/museums/locations.htm for a complete list of Toronto's historic museums and dwellings. The city also offers several medical and science-focused libraries, institutes and museums that ISAKOS members may find of particular interest. If these opportunities might be of interest to you, please visit www.historyofbiologyandmedicine.com/canada.htm for more information. Additionally, there is the Royal Ontario Museum which is located in the heart of downtown Toronto.

Explore



The Royal Ontario Museum is Canada's largest museum of world cultures and natural history. While visiting, one can explore special exhibitions, permanent galleries of dinosaurs, ancient Egypt, Canada's First Peoples, gems, minerals and more—alongside world-class dining, shopping and breathtaking architecture. This museum is a must see! Also, do not miss out on the Toronto Aerospace Museum or the Ontario Science Center, if you are interested in hundreds of engaging interactive exhibits and daily science demonstrations.

If you are looking to stroll through and take in Toronto by foot, wander to the vibrant Distillery Historic District. It is Toronto's newest centre for arts, culture, food and entertainment. This national historic site includes 44 heritage buildings and numerous brick-lined courtyards. Explore the district's many restaurants, art galleries, artisan boutiques, specialty retail stores and more. If you find yourself in the mood to shop, delight in the trendy Queen Street West, Yorkville's designer boutiques, malls such as the Toronto Eaton Centre and Vaughan Mills and the PATH—which features more than 1,200 shops in over 16 miles of underground concourses. Toronto offers visitors the best opportunity for a quality shopping and touring experience.

Multiculturalism is reflected the most in Toronto's cuisine scene. From quaint street food to white linen dining, innovation and fusion are the watch words in the city's tastes. With more than 7,000 restaurants dishing out anything one's stomach desires, it is hard to go hungry in Toronto. There, you are also able to enjoy international delights without leaving the city limits. Toronto has its very own Little Italy, Portugal, Chinatown, Koreatown and Little India to round out the city's global flavors. Toronto's surrounding fertile farmland also creates the perfect opportunity for abundant local farmers markets. The St. Lawrence Market and Riverdale Farm are two of the most notable markets, where fresh produce and local ingredients can be found year-round.

Night owl? You are in the right city! Toronto has an array of hot spots that are guaranteed to please any visitor. Finish off the day with a drink from any of the local bars, clubs and lounges. Or if you prefer, grab a bite to eat while enjoying a show at one of Toronto's cabaret or dinner theaters. You can also catch an opera, dance company or theater performance at one of the many arts venues throughout the city. If you are feeling like fortune is on your side, try your luck at one of Toronto's casinos or bet on your favorite thoroughbred at Woodbine Racetrack. With all these options to choose from, Toronto definitely promises a good evening out.

If you dare to venture past the city limits, you are sure to view breathtaking attractions within bucolic countryside. Experience the wonder of Niagara Falls, a renowned wine region, outstanding theatres and outdoor adventures—all within a short drive from the city. However, nothing is quite like Toronto's miles of waterfront, boardwalks, parks and trails that nestle together with urban delights such as cafés, artisans' exhibits and one-of-a-kind shops. So, enjoy your stay and explore Toronto!

To customize your experience in Toronto and maximize your time, please go to: www.mytorontomeeting.com/isakos and click the 'Explore Toronto' tab in the upper left hand corner.

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The maple is one of North America's most versatile and best-loved deciduous trees.

Depending on the variety, maples are used for rough

construction or in the making of fine furniture. The sap of sugar maples is the only ingredient in maple syrup; a delicious elixir produced in Ontario, Quebec and New England. Maples are also a major tourist attraction; their breath-taking leaves enchanting visitors to eastern North America every fall. A single maple leaf is the proud centerpiece of Canada's national flag.

According to many historians, the maple leaf began to serve as a Canadian symbol as early as 1700. In 1848, the Toronto literary annual *The Maple Leaf* referred to it as the chosen emblem of Canada. By 1860, the maple leaf was incorporated into the badge of the 100th Regiment (Royal Canadians) and was used extensively in decorations for the visit of the Prince of Wales that year. During the First World War, the maple leaf was included in the badge of the Canadian Expeditionary Force. At the time of World War II, many Canadian troops used the maple leaf as a distinctive sign, displaying it on regimental badges and Canadian army and naval equipment. In 1957, the colour of the maple leaves on the arms of Canada was changed from green to red, one of Canada's official colours. In year 1965, the red maple leaf flag was inaugurated as the National Flag of Canada and the maple leaf has become the most-prominent Canadian symbol!

Historical facts show that well before the coming of the first European settlers, Canada's aboriginal peoples had discovered the food properties of maple sap, which they gathered every spring. They were tapping maple trees to make a tasty, sweet treat called maple syrup. Originating from these aboriginal seasonal activities, every year during spring traditional

Maple Leaves in Spring: A whisper of serenity in the wind

Kivanc Atesok, MD, MSc
Toronto, Canada

Maple Syrup Festivals are held in Ontario attracting many Canadian and international tourists. The Elmira Maple Syrup Festival is the biggest yearly festival held in Elmira, Ontario which began in 1965. In that year the Organizers anticipated 2,500 attendees, but instead it drew a crowd of 10,000 visitors, thus ensuring its continuation. It continued to grow as an annual tradition in subsequent years, peaking in popularity with 66,529 visitors in 2000, making it the world's largest one day consumption of maple syrup according to the Guinness Book of World Records.

Canada's wineries and wines have come of age in recent years, garnering international awards, not only for their flagship Icewines, but for intriguing, delicious table wines as well. Ontario produces the largest percentage of Canada's homegrown wine from approximately 15,000 acres of wine grape vineyards. Over 60 varieties of classic European grapes can be grown in Ontario, including several that are emerging as capable of creating wines of great distinction. In springtime, visitors from around the world are drawn to Canada's Wine Regions, to see for themselves the phenomenal growth that has taken place in Canada's wine industry. Small cottage wineries nestled amidst verdant vineyards; expansive cutting-edge architecture; always welcoming winemakers and on-site restaurants serving exquisitely prepared local cuisine have created a new mecca for travelers and wine lovers. To taste the wines of Canada is to experience joy and excellence.

Visiting Canada in spring will give valuable ISAKOS members the opportunity to live through all these worthwhile experiences while becoming familiar with some of Canadian customs and traditions.

Canadians are well known for their politeness. For example, failing to hold a door open for another person is seen as very impolite, especially when doing so would require no special effort. The third most courteous city of the world, Toronto is already holding the doors open for the 9th Biennial ISAKOS Congress in May 2013!

References: 1. Canadian Heritage. <http://www.pch.gc.ca>. 2. Wines of Canada. <http://www.canadianvintners.com>. 3. Readers digest online magazine - Canada. <http://www.readersdigest.ca>. 4. Canada Blooms. <http://www.canadablooms.com>.



Picture 1. Maple leaves in spring. Picture 2. Maple trees in autumn. Picture 3. Canadian flag. Picture 4. Bottled maple syrup. Picture 5. Niagara wineries, Ontario. Picture 6. Grapes from Ontario vineyards.

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in your Tweets and join the global conversation!

TEACHING CENTER SPOTLIGHT

Department Of Orthopaedic Sports Medicine

Steadman Philippon Research Institute

Vail, Colorado, USA

The Institute is dedicated to keeping people of all ages physically active through orthopaedic research and education in the areas of arthritis, healing, rehabilitation, and injury prevention.

Background

Founded in 1988 by orthopaedic surgeon Dr. J. Richard Steadman, the institute moved to Vail in 1990 with one researcher. In 2010 Dr. Marc Philippon's name was added to mark the succession of the Institute and recognize his research efforts and contributions to the fields of hip arthroscopy and sports related injuries of the hip. Today there are 32 employees including scientists, researchers, medical fellows, visiting scholars, and interns.

The Institute is known throughout the world for research into the causes, prevention, and treatment of orthopaedic disorders. Some of our pursuits include joint restoration and preservation, youth sports injury prevention and treatment, and osteoarthritis. We are committed to solving orthopaedic problems that limit an individual's ability to maintain an active life.



Our research perspective is based on clinical relevance, with a goal of improving the care of the patient. This pairing of scientific research and clinical evidence with patient preference defines "outcomes-based medicine", and it enables orthopaedists to provide the best diagnosis and treatment to their patients, while taking into account the level of performance that each individual would like to maintain.

We collect data and publish research related to knees, hips, shoulders, spine, foot and ankle, hand and wrist, and imaging, and have become one of the most published and innovative organizations in sports medicine research and education. We publish our findings in relevant peer reviewed scientific and medical journals and present our research results at medical meetings worldwide.

Surgical Skills Laboratory

Following the vision of SPRI's mission, the Surgical Skills Laboratory (SSL) is equipped to implement new surgical technologies and train surgeons in new techniques. Because of the proximity of the Surgical Skills Laboratory to The Steadman Clinic, it is not uncommon to find some of the world's best surgeons offering assistance to visiting physicians practicing their trade and enhancing their skills. To further improve the educational experience, our SSL was designed to simulate the hospital operating room as closely as possible. With 10 fully outfitted arthroscopy training stations complete with drop-down panels containing electricity, water, vacuum, and data ports, we have succeeded in development of a state-of-the-art facility. To further enhance educational courses, the SSL is supported by a conference room that will accommodate more than 60 people for lectures, and it is integrated with a two-way audio and video link to the SSL. This feature allows users to view proceedings in the SSL while accommodating simultaneous question and answer sessions. Following construction of the new SSL in 2011, we have hosted an international contingent of more than 500 surgeons, fellows and residents. We offer full management of cadaveric specimens and ensure a complete supply of surgical equipment. Ancillary services such as catering and housing can also be arranged.

Biomechanics Research Department

Biomechanics research studies dynamic joint function using motion analysis, computer modeling, and dual-plane fluoroscopy imaging in an effort to understand injury mechanisms and to enhance rehabilitation techniques and outcomes. The Biomechanics Research Department has grown and added expertise, technology and equipment, and increased the quality and quantity of research and collaborative efforts with national and international institutions. The SPRI Biomechanics Research Department, completely renovated in 2011, includes a separate BioMotion Laboratory and a Biomechanical Testing Laboratory.

TEACHING CENTER SPOTLIGHT

The BioMotion Laboratory uses a biplane fluoroscopy system, EMG systems, and a motion capture system complete with a sports performance area and force plates to measure motions, forces and muscle activation patterns needed to perform sports activities in normal, injured and treated patients. Two primary testing devices in the Biomechanical Testing Laboratory are a six-degree of freedom KUKA KR60 robot and an Instron ElectroPuls E10000 linear-torsion testing machine. We also have a Tekscan joint pressure system, a TruVidia HD In-Light surgical light/camera, a Polhemus Liberty tracking system and a Microscribe 3D digitizer.

Clinical Research Department

SPRI maintains a clinical research registry that has been tracking several thousand data points from every patient seen at The Steadman Clinic, some for more than 20 years. By querying this database - one of the largest of its kind in the world - SPRI's researchers can derive targeted insights into specific orthopaedic disorders and conditions. The Clinical Research Department recently updated the data collection software to all digital collection to create a more efficient and accurate method of data collection. The goal of this department is to provide a mechanism for our physicians to do clinical research and provide outcomes-based analysis on a timely basis. The data registry currently has over 50 million data points.

Basic Science Research Department

The purpose of our basic science research is to gain a better understanding of factors which lead to: (1) degenerative joint disease, (2) osteoarthritis, (3) improved healing of soft tissues such as ligaments, tendons, articular cartilage, and meniscus cartilage, and (4) novel and untried approaches of treatment modalities. Our focus is to develop new surgical techniques, innovative adjunct therapies, rehabilitative treatments, and related programs that will help to delay, minimize, or prevent the development of degenerative joint disease. We believe that our efforts will lead directly to slowing the degenerative process, as well as finding new ways to enhance healing and regeneration of injured tissues.

Imaging Research Department

Imaging research develops and evaluates noninvasive imaging techniques of the joints for the purpose of improving clinical diagnosis, directing and monitoring clinical treatment and outcomes, and to enhance the clinical relevance of research conducted in all of the departments at SPRI. New staff members recently were added; the clinical imaging database was expanded to include data points involving the hip, shoulder, knee, foot and ankle; and imaging research screening has become an increasingly important component of studies being conducted by SPRI physicians and scientists.



Combined Reconstruction of the Medial Patellofemoral and Medial Patellotibial Ligaments for Chronic Patellar Instability

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Introduction

The medial patellofemoral ligament (MPFL) is the primary passive restraint to lateral translation of the patella when the knee is between 0-30°. Accordingly, multiple surgical techniques were developed to address chronic instability of the patella by reconstructing this ligament. These procedures most commonly use a hamstring tendon which is passed and fixed on the patella through transverse tunnels. Such reconstruction techniques are designed to recreate the MPFL restraining effect but they do not address the medial patellotibial ligament (MPTL). Since it was shown that the MPTL provides more than 20% of the restraining force against lateral patellar shift in extension, with larger contributions as the knee flexes beyond 30°, it could be argued that recreating the MPTL may play a role in treating cases of chronic patellar instability.

Since 2006, we have been using a reconstructive technique that recreates both the MPFL and MPTL for patients that present with chronic lateral patellar instability.

Surgical Technique

Prior to performing the surgery as an isolated patellar stabilization procedure for recurrent lateral patellar dislocations the following morphological characteristics should be confirmed: Patellar height index within normal limits, normal sulcus angle (< 140°), and TT-TG within normal limits (10-20mm).

Steps of the procedure: With the patient under anesthesia, the knee is thoroughly examined for range of motion, cruciates and



Figure 1



Figure 2

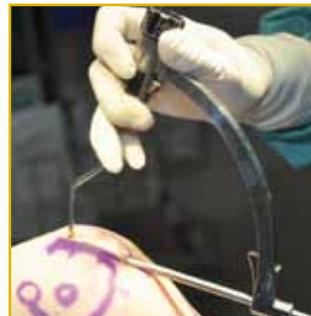


Figure 3



Figure 4



Figure 5



Figure 6

collaterals stability, and positive lateral patellar dislocation is then confirmed (Video 1 available on-line); Arthroscopy is then performed in order to evaluate cartilage damage, remove any loose bodies, and assess the menisci. Lateral dislocation of the patella with lateral translation force is then reassessed (Video 2 available on-line); The hamstring tendon (usually the Gracilis, unless it is extremely thin, and in that case the Semitendinosus is used) is harvested with an open tendon stripper and left attached at the Pes Anserinus; The tendon is whip-stitched (Figure 1); A 3-5cm-long incision is made over the medial border of the patella, and the soft tissue is dissected without disrupting the joint capsule;

A 3.5mm diameter longitudinal tunnel is drilled at the medial third of the patella, using a hollow drill over a Kirshner wire (Figure 2). An ACL guide with a guide pin can be used to facilitate wire aiming (Figure 3). The proximal aperture of this tunnel should be located just lateral to the upper medial corner of the patella; After subcutaneous dissection with Metzenbaum scissors from the Pes Anserinus area to the patellar incision, the hamstring tendon is passed from distal to proximal and then through the patellar tunnel (Figure 4); A 3cm-long incision is made over the medial epicondyle; The tendon is then passed just over the joint capsule in the direction of the medial epicondyle (Figure 5); A 5.5mm double-loaded anchor is placed at the medial epicondyle (Figure 6); The tendon is tied with the knee at 60° flexion (Figure 7), confirming that proximal passive motion of the patella does not result in tensioning the "MPTL" and "MPFL" parts of the graft before the patellar tendon is under tension (to avoid extension lag). The 60° flexed knee position is used to remove slack from the tendon and to confirm the "MPFL" part is not over tensioned. Before tightening the knot, adequate lateral motion of the patella is confirmed, making sure not to overtighten the graft and at the same time, not allowing patellar dislocation; The remaining part of the tendon beyond the anchor is then looped back towards the patella and tied over itself and to the patella for additional strength (Figure 8); Location of the "MPFL" part of the graft just over and outside the medial joint capsule is then confirmed arthroscopically with adequate lateral translation of the patella (Video 3 available on-line); The subcutis and skin are then closed (Figure 9).

Postoperative Protocol:

- (1) First 2 weeks: The knee is immobilized in a hinged brace with full weight bearing and flexion allowed from 0° to 30°.
- (2) Weeks 3-4: ROM is allowed from 0° to 60°.
- (3) After 4 weeks: ROM is allowed from 0° to 90°.
- (4) After 6 weeks: The brace is removed and full motion is allowed.

Return to sports is allowed at the fourth post-operative month after confirming full ROM, normal patellar tracking, and symmetric Quadriceps strength.



Figure 7



Figure 8



Figure 9

Discussion

Chronic instability of the patella is a relatively common sequelae following primary dislocation, with reported rates of up to 45%. Multiple techniques that were designed to address such cases aimed to reconstruct the MPFL.

The currently described technique provides several advantages in our opinion. First, both MPFL and MPTL are reconstructed, resulting in a medial restraint against lateral patella translation through a wide range of knee motion. Second, using only one anchor as the single hardware in this technique can be considered an advantage in terms of saving costs compared to techniques that use multiple anchors or additional interference screws or endo-buttons. And third, avoiding transverse tunnels in the patella may reduce the risk of transverse patellar fractures which were described after MPFL reconstructions with transverse tunnels. We are currently in a process of performing our minimum 2-year follow-up on the series of patients that underwent this procedure.

Full article and references also available online at www.isakos.com.

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ACUTE PATELLAR DISLOCATION: *Review of Literature*

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Introduction

The traumatic dislocation of the patella can be regarded as the second cause of knee hemarthrosis after trauma. It occurs mostly on the second decade of life and its incidence varies from 6 to 50 cases per 100,000 habitants.

Conservative treatment has been considered the gold standard even though the latest studies have demonstrated lower rates of recurrence in surgically treated patients.

The aim of this paper is to perform a review of the literature regarding the approach of acute patellar dislocation focused in dilemmas concerning surgical and conservative treatment.

Methods

The authors have searched Pubmed for studies on acute patellar dislocation. The term "acute patellar dislocation" yielded 145 articles which were analyzed by the authors. It is relevant to point out that only English-language studies that described the medial patellofemoral ligament (MPFL) reconstruction or repair, rehabilitation, and patient outcome information were included. That said, case reports were excluded from the list.

Literature Review

LOCATION OF THE INJURY

Concerning the location of injury Sillanpää et al (2009), evaluating 53 patients in a cohort study, with a level of evidence III, observed damage at the femoral insertion of the MPFL in 35 patients, at the patellar insertion in seven patients and in the substance of the ligament in 11 patients. The femoral insertion was considered to be related to progression to chronic instability. Ahmad et al. (2000) observed avulsion from the adductor tubercle in all their eight cases treated surgically. Camanho et al (2009) reported a higher incidence of injury at the patellar origin (10 out of 17 patients). Seeley et al retrospectively analyzed the MRI of 111 children and demonstrated medial patellofemoral ligament (MPFL) injury

in 87 patients (78.4%). The authors reported an isolated patellar insertion injury in 34 patients (31%), an isolated femoral insertion injury in 16 patients (14%) and MPFL injury in more than one location in 37 patients (33%). Kepler et al (2011) in a cohort study regarding MRI in a pediatric and adolescent population, with a level of evidence II, reported that MPFL injury occurred at the patellar attachment in 61% of the patients and at the femoral attachment in 12%. They observed that 12% of the patients had injury at both the patellar and femoral attachments, 6% had no identifiable MPFL injury and 9% had combinations of midsubstance and either patellar or femoral attachment injuries. The relationship between MPFL femoral insertion and physis was also described. Eighty-six percent of patients had an MPFL insertion distal to the growth plate, 7% had an insertion at the physis, while only 7% had a proximal insertion.

ASSOCIATED LESIONS

Lesions of the MPFL associated with the medial retinacular structures was considered to occur in almost 100% of the cases in the adult population. In adolescents, as noted by Seeley et al, MPFL lesion was less frequent and was associated to VMO edema in 56% of the cases. The same authors identified osteochondral fracture in 38 out of 111 knees (34%), 25 in the medial patellar facet, 5 in the lateral femoral condyle, and 8 in both locations.

Stenfancin & Parker, in a systematic review of 70 papers, with evidence levels I through IV, observed 24.3% of osteochondral fracture.

CONSERVATIVE X SURGICAL TREATMENT

Fithian et al, in an epidemiological study in southern California, divided the patients with acute patellar dislocation in two groups: those who showed the first episode of dislocation (125 patients) and those with antecedents of dislocation or subluxation (64 patients), with a minimum follow-up of two years. There were only 17% further dislocations in the first episode of dislocation group, whereas on the group with prior history of luxation or subluxation, 49% of the patients had a dislocated patella. The authors did not observe a positive correlation between retinacular injury and subsequent patellar instability. It was concluded that female gender, younger patients and previous history of patellofemoral instability have greater risk of subsequent patellar instability.

Fisher et al (2010), in a systematic review, evaluated 21 studies with a total of 488 patients (184 male and 304 female). They concluded that MPFL reconstruction and rehabilitation are supposed to improve patient's ability to perform activities of daily living. Poor study methodology including outcome

surveys with lack of either sensitivity or validity to measure the influence of patellofemoral joint dysfunction on sports participation, as well as limited exercise rehabilitation information, make it difficult to determine efficacy of each treatment.

Sillanpää et al (2008) in a cohort study, with a level of evidence II, prospectively evaluated 26 patients with arthroscopic repair of the medial patellofemoral ligament and 35 patients treated conservatively. The rate of redislocation after a mean follow up of 7 years was 19% in the operated group and 23% in the conservative group ($p = 0.84$). Eight patients in the conservative group and three in the surgically treated group reported painful patellar subluxations ($p=0.18$). The mean Kujala score was similar for the two groups. The pre-injury activity level was recovered in 81% of the surgically treated patients and in 56% of patients of the conservative treated group ($p = 0.05$). There was no difference in the rate of arthrosis between the two groups. The authors concluded that the arthroscopic medial retinacular repair did not improve patellar stability nor reduced the incidence of redislocation, but it allowed the patients to better regain their pre-injury levels.

Sillanpää et al (2009) published a prospective randomized clinical trial in which 38 patients were followed for 7 years. They found a higher rate of redislocation (6 in 21 cases, $p = 0.02$) and four cases of subluxation in the group treated conservatively. There was no dislocation and only two cases of subluxation in the surgically treated group. The study included only three female patients because it was performed in a military hospital. The authors concluded that even though the rate of redislocation was significantly lower in the operated group, there was no clear subjective benefits of initial stabilizing surgery.

Christiansen et al (2008) prospectively studied 80 patients comparing MPFL surgical repair to conservative treatment, with a mean follow-up of 2 years, in a well defined and randomized studied population, with a level of evidence I. A delayed arthroscopy (mean 50 days after injury) had been performed and during this procedure they randomized the patients to surgical repair or conservative treatment. At the final follow up, they observed a rate of dislocation of 16.7% in the operated group and 20% in the conservative group, with no statistical difference. The authors concluded that late reinsertion of MPFL did not provide superior clinical results compared to conservative treatment.

Palmu et al (2008) compared the outcomes of surgical treatment with non-operative treatment in patients younger than 16 years for a period of 14 years. Sixty-two patients were randomized and prospectively evaluated. There was no difference in the rate of new dislocation and the degree of satisfaction between the

groups. The episode of dislocation occurred after the second year of follow up in more than half of the cohort studied. The authors concluded that routine repair of the torn medial stabilizers should not be advocate.

Camanho et al (2009), in a randomized controlled trial with a level of evidence II, evaluated 33 patients (16 treated conservatively with immobilization and subsequent physiotherapy and 17 treated surgically with repair of the MPFL). They observed recurrence of the dislocation in eight patients in the non-operated group and none in the surgical group and a better functional outcome (Kujala score) in the surgically treated group (82 points against 69 points in the conservative group). The authors concluded that surgical treatment afforded better results.

In two different publications, Nikku et al (2005, 1997) prospectively evaluated patients with a history of acute patellar dislocation (first episode), comparing surgical and conservative treatment. A two and a seven-year evaluation revealed no statistical difference between surgically and conservatively treated subjects regarding the rate of new dislocation and functional scores. Initial contralateral instability and young age were considered risk factors for instability and the worse results were found in girls with open physis. In both papers the authors do not recommend surgery for primary dislocation of the patella.

Apostolovic et al (2011) evaluated 37 adolescents with age between 12 and 16 years, with a mean follow up of 6.1 years. The presence of a significant loose body, confirmed by precise imaging, was the key for selecting operative or arthroscopic treatment. There was no statistically significant difference ($p=0.091$) between operatively and conservatively treated groups with regard to functional results or other major patellar instabilities ($p=0.856$). The author concluded that the individual treatment indication may help to balance results of surgical and conservative treatment.

Stenfancin & Parker, in a systematic review of 70 papers, with evidence levels I through IV, observed a dislocation recurrence rate of 48%. In evaluating the five studies that compared surgical and conservative treatment, the authors reported that all of them recommended initial conservative treatment since there were similar results between conservative and surgical treatment. According to the authors the arthroscopic or open surgery is indicated only in cases of osteochondral fracture and major complications occurred only after the surgical treatment.

In a recent meta-analysis, Smith et al (2011) examined 747 knees undergoing conservative and surgical treatment after the first patellar dislocation. Eleven studies met inclusion criteria, 5 randomized controlled trials and six non-

ACUTE PATELLAR DISLOCATION: *Review of Literature* (cont.)

randomized. Although there was considerable heterogeneity among the studies analyzed, there was a higher incidence of recurrent dislocation in the group treated conservatively ($p = 0.04$). However, in the surgically treated group, the rate of patellofemoral osteoarthritis was higher ($p = 0.002$).

Nietosvaara (2009) described the long-term of both subjective and functional results of a randomized controlled trial of non-operative and operative treatment of primary acute patellar dislocation. Operative treatment consisted of direct repair of the damaged medial structures if the patella could be displaced with the patient under anesthesia or lateral release alone if the patella was stable. The rehabilitation protocol was the same for both groups. The first redislocation occurred within two years after the primary injury in 52% of the knees with recurrent dislocation. They reported good or excellent results in 75% of the non-operated group and in 66% of the surgically treated patients. The rates of recurrence of the instability were 71% for the non-operated group and 67% for the operated group. The authors concluded that initial operative repair of the medial structures combined with lateral release did not improve the long-term outcome, despite the high rate of recurrence. A positive family history was a risk factor for recurrence and for contralateral patellofemoral instability.

Buchner et al. (2005), evaluated 126 patients who underwent either a conservative treatment, a diagnostic arthroscopy, a reconstruction of the MPFL or a medial fixation of the osteochondral fragment. It was found that 26% of overall dislocation recurrence rate, with 85% excellent and good results in the Lysholm evaluation, and 71 % of good subjective results. They did not observe differences between the groups regarding dislocation recurrence, reoperation, activity level and clinical and functional results. The authors concluded that non-surgical treatment seems to be the choice for patients with acute patellar dislocation.

Vainionpää (1990) reported a prospective study of 55 patients with acute primary patellar dislocation, all treated by operation and followed up for at least two years. Subjective results of the operation were excellent or good in 44 of the 55 at two years with a redislocation rate of only 9%. Most patients were able to return to the same level of sporting activity as before the injury.

Ahmad et al., evaluating the treatment of eight patients with acute patellar dislocation, with rupture of the vastus medialis oblique (VMO) and distal rupture of the MPFL, all of them treated surgically, did not observe recurrence in any case, although there was limited flexion in four patients.

Bitar et al (2012) in a randomized controlled trial, with level of evidence I, compared conservative treatment (18 patients, 20 knees) to reconstruction of the MPFL with the patellar tendon (21 patients, 21 knees). Considering the Kujala score, the surgical group showed 71,43% and the conservative group 25,00% of good/excellent results. There were 35% of recurrences and subluxations in the nonoperated group and none in the surgical group. The authors concluded that the reconstruction of the MPFL produced better results than non surgical treatment.

LATE OSTEOARTHRITIS

Arnbjornsson et al (1992) and Sillanpaa et al (2008) observed a higher incidence of osteoarthritis in patients with chronic instability which was treated surgically.

DISCUSSION

When the topic acute patellar dislocation is addressed, there are many subjects that remain unclear. Probably this is due to the fact that there is a lack of randomized studies, with a good level of evidence and sufficient number of patients studied.

The current literature is not unanimous about the location of the injury and the majority of the studies does not make reference to it. The adductor tubercle remains the most frequent place where the MPFL injury occurs and this can be confirmed by many studies. However, the patellar attachment was more frequent in some studies that include surgical treatment and in those with MRI evaluations. If taken in account that many studies report femoral avulsion of the MPFL, the arthroscopic repair of medial retinaculum and MPFL seems to be inappropriate, because at that situation, the point of rupture is not addressed.

Osteochondral fractures of the patella and of the lateral femoral condyle are considered to be the most frequent associated lesions and the majority of the literature relates its presence to the indication of surgical treatment. Another frequent finding is medial retinacular rupture, even though it is considered less frequent in a pediatric and adolescent population.

Many papers have been trying to establish which patients will have recurrence of their instability. The factors to be considered that indicate a worse prognosis are the female gender, younger ages, a positive family history, initial contralateral instability or previous history of patellofemoral instability. Patients with predisposing factors for dislocation such as an increased "Q"angle, "patella alta", a lateral tilt of the patella tend to have a worse prognosis. On the other hand, traumatic episodes seem to be related to lower rates

of recurrence, hence they occur in general, in patients without predisposing factors. The medial retinaculum rupture, which precludes a truly traumatic lesion, is often considered to be a good prognostic factor, when we consider recurrence rates.

Current literature is unclear about the best treatment for first patellar dislocation. While a few papers show better clinical results with repair or reconstruction of the MPFL, there are many which report similar clinical outcomes. Nonetheless there is a trend concerning lower rates of new dislocations in the group treated surgically. Moreover operated patients tend to better regain their pre-injury levels or to improve their ability to perform activities of daily living, even though the functional scores, personal satisfaction and episodes of subluxation are similar in both groups.

The studies comparing operative and non-operative treatment of acute patellofemoral dislocation, with a longer follow up show an increased incidence of patellofemoral osteoarthritis in the patients treated surgically. There are also reports of major complications related mainly to surgical treatment and not to conservative treatment.

CONCLUSION

Although there are several controversies about acute patellar dislocation, it can be argued that:

1. Female gender, younger ages, positive family history, bilaterality and the presence of predisponent factors are considered factors of bad prognosis for recurrence
2. Formal indications for surgical treatment are: dislocation with a large osteochondral fragment and recurrence of the instability.
3. Clinical scores and subjective results are quite similar among patients treated conservative or surgically, even though there are lesser rates of dislocation in the operated patients
4. Late complications like loss of flexion or osteoarthritis are more common after the surgical treatment

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Possible Applications of Platelet Rich Plasma to the Treatment of ACL Injury—Review and Future View

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A platelet contains the majority of biologically active molecules required for blood coagulation, such as adhesive proteins, coagulation factors, and protease inhibitors. In addition to the factors that coagulate blood, activated platelets are known to release many kinds of growth factors, such as platelet-derived growth factor (PDGF), transforming growth factor-beta 1 (TGF- β 1), epidermal growth factor (EGF), and vascular endothelial growth factor (VEGF), which are thought to play a key role in the healing process of many tissues. Platelet rich plasma (PRP) was developed in the early 1970s as a fraction of plasma in which platelets are concentrated; thus, higher concentrations of the fundamental protein growth factors also exist in platelet-rich plasma. These growth factors are known to induce biological changes in the cell proliferation and matrix metabolism of a variety of connective tissues.

PRP has been used as an autologous source of the growth factors that are able to induce tissue regeneration in several clinical settings, such as wound healing, bone regeneration in periodontal and maxillofacial surgery, otolaryngology, plastic surgery, and cardiovascular surgery. The same approach involving the use of PRP has been attempted in the field of sports medicine, including chronic tendinopathy, rotator cuff lesion, cartilage lesion, meniscal lesion, osteoarthritis, bone defect and ligament injuries. Among the ligament injuries, the use of PRP to enhance anterior cruciate ligament (ACL) healing has received special attention, in part because of the relatively poor healing potential of this intra-articular structure compared with extra-articular tissues like medial collateral ligament (MCL).

Animal Studies

The material properties of a tendon autograft deteriorate during the remodeling phase after ACL reconstruction. Therefore, PRP treatment is expected to enhance the graft maturation or accelerate the restoration of the deteriorated graft after surgery as a new biological therapy approach. A series of studies by Yasuda et al. on in situ frozen-thawed ligament in rabbits and ACL reconstruction with the autologous bone-patellar tendon-bone graft in dogs have shown that a combined administration of TGF- β 1 and EGF inhibits the deterioration of the grafts mechanical properties. These results suggest that PRP, which include these growth factors, has positive effects on the remodeling and maturation of ACL autograft.

In ACL reconstruction, secure graft attachment to bone allows the patients' early return to their original activities. In terms of this aspect, autologous bone-patellar tendon-bone (BTB) graft has an advantage because of its bone to bone integration.

While PRP is expected to have an enhancing effect on the BTB graft integration, the usefulness of PRP on bone graft integration remains unclear, because the effects of PRP on osteointegration are controversial, and some studies have even showed a negative effect on bone healing and regeneration.

Another potential of PRP is to enhance primary repair of torn ACL. In contrast to extra-articular ligaments like MCL, ACL does not form a fibrin-platelet clot at the site of the defect and the gap between the two torn ends remains open. This lacking clot formation, which may be caused by circulating plasmin in the synovial fluid, is thought to be the biggest reason of the relatively poor healing potential of ACL. Murray et al. reported that collagen-PRP gel treated with thrombin enhanced bovine ACL cell proliferation and migration in the gel and that the use of a collagen-PRP scaffold stimulated healing of a defect in the canine ACL. They concluded that collagen-PRP scaffolds achieved superior results compared with studies that used PRP alone.

Human Studies and Clinical Trials

For the clinical application of PRP to ACL-deficient patients, it is desirable to examine whether PRP has an enhancing effect on ACL cell metabolism with use of human samples. We examined the effect of autologous PRP on viability and collagen synthesis of adult human ACL fibroblasts in vitro (Figure 1). PRP was shown to enhance viability of ACL cells (Figure 2), total collagen production and gene expression on collagen type III significantly. Magarian and Murray et al. examined the response of immature human ACL fibroblasts to collagen-PRP scaffold and showed that both migration and proliferation were higher in immature cells than cells from older individuals. These findings suggest immature patients respond more favorably to treat with PRP, which consequently might translate into better results in ACL tissue engineering.

There are three prospective randomized controlled clinical studies applying PRP to ACL reconstruction with autologous graft (Table 1). Orrego et al. applied platelet concentrate (PC) and/or bone plug to the femoral bone tunnels, and showed an enhancing effect on the graft maturation process as evaluated by MRI signal intensity, but no significant effect of the PC on the osteoligamentous interface or tunnel widening evolution was observed. Silva and Sampaio used PRP in the femoral tunnels and/or as intra-articular injections after hamstring ACL reconstruction, showing that knee MRI performed after 3 months failed to show an acceleration of tendon-to-bone integration. However, in this study, there are some limitations such as the low number of patients for each group ($n=10$) and the possible insufficient sensitivity of MRI in detecting small changes in the fibrous interzone. Radice et al. attempted ACL reconstruction using autologous graft (hamstring or BTB) augmented with PRP and a bioabsorbable synthetic gelatin. This study demonstrated a 48% reduction in the time required to achieve a complete homogeneous graft signal when PRP was used for surgical ACL augmentation.

Limitations

There are some studies that do not show any benefits from PRP. This discrepancy in data may be attributed mainly to the fact that PRP preparation techniques vary. Many variations of blood products have been evaluated in the literature. Within the realm of PRP, clinicians and investigators have differing protocols for producing PRP solutions. Although the basic principle of the preparation of PRP is similar, centrifugation systems also produce varying products and no clear comparative evidence is available to date. Moreover, some PRP protocols include white blood cells, some involve activation with thrombin or calcium, and the concentration of platelets can differ, depending on the system used. Dohan et al classified platelet preparations into four main categories depending on the amount of leucocytes and fibrin in the preparation; Pure-PRP, Leukocyte-PRP, Pure-Platelet rich fibrin and Leukocyte and Platelet rich fibrin. We need to consider which type of blood products is the best for ACL repair.

There are a lot of interesting animal studies using PRP for ACL repair. Although animal models provide important knowledge to develop more effective treatments, intra-species and interspecies variability and several other conditions make still results difficult to interpret and compare. Unfortunately, the literature contains only a limited number of studies on the effects of PRP on ACL using human materials up to now. Therefore, well-designed human studies are essential to demonstrate clearly the efficacy of PRP on ACL.

Future View

Applications of PRP can bring advantages in the treatments of ACL injury; 1) to enhance the graft maturation process after ACL reconstruction, 2) to achieve better attachment of the graft to bone tunnel after ACL reconstruction and 3) to enhance primary repair of torn ACL. Among these, enhancement of primary ACL repair seems to be the most attractive as an ultimate target, especially in skeletally immature patients. Vavken and Murray stated that regeneration of the ACL, rather than replacement with a similar type of tissue, has the potential to preserve the proprioceptive nerve fibers and the complex architecture of the ligament insertion side, features that are usually not reproduced by tendon grafts. They advocate bio-enhanced ACL repair, in which primary sutured ACL is augmented with PRP and collagen scaffold. Development of this type of procedure uncovers new therapeutic approaches to optimize the efficacy of PRP.

Although there still remain problems to be solved for clinical application, concerning protocol, safety, cost and so on, the regenerative properties of PRP give it potential for use in the management of ACL injury.

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Figure 1: Human ACL fibroblasts cultured with 5% platelet poor plasma (PPP) (A), 5% PRP (B) and 5% fetal bovine serum (FBS) (C)

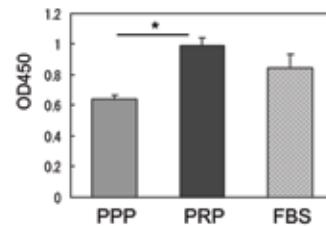


Figure 2: Cell viability of human ACL fibroblasts (MTT assay)

| | Evidence Level | No of Patients | Follow Up | Results |
|----------------------|----------------|----------------|-----------|--|
| Orrego et al. (2008) | 2 | 108 | 6M | + Enhancing maturation in MRI - No effect on tunnel widening |
| Silva et al. (2009) | 3 | 40 | 3M | - No MRI difference compared to controls |
| Radice et al. (2010) | 3 | 50 | 3-12M | + 48% reduction in the time required to achieve a complete homogeneous graft signal in MRI |

Table 1: Clinical application of PRP to ACL reconstruction with autografts

GRAFT SIZE AS A PREDICTOR OF EARLY REVISION After Anterior Cruciate Ligament Reconstruction

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Introduction

Anterior Cruciate Ligament (ACL) rupture is a very common pathology. It occurs as frequently as 1 in 3000 people. The success rate of the primary surgery is over than 85%. However, that leaves a substantial number of patients with unsatisfactory results.

The failure of an ACL reconstruction is often hard to explain. The patient can have many types of complaints. This includes knee instability, pain, stiffness, or the inability to return to desired activities or previous sports level.

The ACL revision surgery does not have the same great results as a primary ACL reconstruction.

Failures that occur within the first 6 months can be due to poor surgical technique, failure of graft healing, or too aggressive rehabilitation. Failures that occur after 1 year are usually due to a new trauma.

The diagnosis is made based on patient complaints, physical examinations and complementary imaging studies such as x-rays, MRI and CT scan. Those studies help analyzing and planning the needed steps of a revision surgery.

The indication for a revision ACL reconstruction is based on patients complaints of instability both subjectively and objectively. The cause of the failure must be investigated and the outcome results must be discussed with the patient. This simple act can prevent further legal discussions due to over expectancy results.

The causes of failure reported in the literature includes:

- Incorrect technique and tunnel placement (the most common)
- Graft fixed in lax position
- Failure of fixation
- Synthetic grafts
- Failure of graft incorporation (biologic failure)
- Host factors
- Missed associated instabilities
- Re-injury (new trauma)
- Arthrofibrosis
- Deep infection
- Partial meniscectomies

Materials and Methods

I perform ACL reconstructions since 1997 on an average of 70 cases a year. My experience with anatomic ACL reconstruction began in September 2009. Since then, 172 surgeries were performed until December 2011. Patients with a minimum follow up of 12 months were phone call contacted, which resulted a number of 111 patients.

We asked them if / to:

- Presence of complaints?
- Returned to practice sports activities he performed prior to surgery?
- Give a subjective rate to his knee, between 0-10, corresponding a scale between very bad and very good.
- While this is not a validated functional outcome score, it is the most pertinent single outcome in the patient's perception of his/her results.

Results

This questionnaire brought us the following results:

Among the 111 patients, was able to contact 80. The other 30 did not return calls and one died from external causes.

Analyzing these 80 patients group, 4 (5%) had neoligament re-tear, 59 (73,75%) returned to pre-injury sports level. The evaluation rate was 8.8 points, and 31 (38,75%) had some type of complaints, being the most common mild pain and muscle atrophy.

| # of Patients complaints | # of patients | # of Patients complaints | # of patients |
|--------------------------|---------------|--------------------------|---------------|
| Mild pain | 9 | Mild swelling | 4 |
| Constant pain | 2 | Click | 1 |
| Paresthesia | 2 | Atrophy | 7 |
| Instability | 1 | Neoligament retear | 4 |
| Fear | 3 | No Complaints | 47 |

Among our four cases of yearly failures, there was no technical errors to justify the new tear. Two patients had meniscal and chondral lesion and other 2 did not have any associated lesion. Two had graft diameter 7mm and the other 2 had 8mm graft diameter. The 4 patients were of ages 20, 29, 37 and 48 years.



Right knee of a patient undergoing anatomic ACL revision. The neoligament tear occurred nine months after primary surgery. The patient complained of instability even before the new sprain (he played soccer just 3 times before the new injury), playing soccer. In this case, the primary surgery was performed in 2008 with isometric technique using a 7mm hamstring graft. The revision surgery was made using anatomic technique and a 10mm thickness patellar tendon graft. Currently the patient is 29 months follow-up, no complaints and playing sports (soccer and tennis) 3 times a week.

CT image of the same patient above showing the presence of tunnel position in isometric and anatomic position.



Discussion

The basic causes of failure of primary ACL reconstruction have already been widely studied and the conclusions do not vary among authors. It is known that the technical problem is the main cause of surgical failure.

The revision surgery is a more complex procedure that must be performed by an experienced surgical team. These knee surgeons should be able to circumvent complications that may arise during surgery, events that occur more frequently in revision surgery.

Today we discuss some new factors that could cause failure of primary ACL surgery, among them the most relevant factor would be the thickness of the graft used and patient age under 20 years during the time of index surgery, accordingly to Magnussen et al.

We seek in our cases of failure to find some more relevant factors, including the thickness of the graft and age group, but we need more follow up time to make more definitive conclusions. In general we achieved great results with minimal failure rates.

Conclusion

On this sample group of ACL reconstructions with quadrupled ST/G autograft we have the impression that the size of the graft is the key point to influence on a poorer surgery result, leading to the rupture of the neoligament. We found no age correlation to failure.

Full article and references also available online at www.isakos.com.



3D CT reconstruction showing the anatomic tunnel of the revision surgery.



CT scan reconstruction anatomical femoral single tunnel

THE ART AND SCIENCE OF *the Diagnosis and Treatment of Muscle Injuries*

Sam Oussedik, MD, UNITED KINGDOM

Myles Coolican, FRACS, AUSTRALIA

Muscle injuries represent the commonest reason for loss of playing time with professional athletes and are a problem for athletes at all levels. Surgical treatment is rarely required but the injuries are a recurring problem for athletes, coaches and team physicians. A better understanding of the diagnosis, classification, pathophysiology and therapeutic options would allow treating clinicians a chance to speed recovery and minimize time away from participation. From a coach's prospective, a reduction in incidence would be a welcome change.

To this end, in October 2010, a coming together of great minds in the field of Orthopaedics and Sports Medicine in Doha, Qatar, occurred to discuss this often overlooked topic. At a Closed Meeting of the ISAKOS Sports Medicine Committee with invited guests, delegates heard from experts in the field of orthopaedics and sports medicine, each addressing a different aspect of muscle injury.

Francois Kelberine, current Chairman of the Orthopaedic Sports Medicine Committee provided a very workable classification to muscle injuries and Xavier Biggard gave an excellent dissertation on the biology of muscle injury and healing. We had been taught at medical school that skeletal muscle healed with scar but the ability of skeletal muscle to regenerate after injury is one of its major characteristics, and we heard of the healing process at the cellular and molecular level.

Alberto Pochini spoke on the imaging of muscle injuries with some wonderful MRI examples and Lucio Ernlund spoke about the primary care of muscle injuries. Myles Coolican presented some of David Young's work on the role of surgery in proximal hamstring avulsions and Karl Eriksson also spoke on the very limited role of surgery for chronic injuries. Stephane Bermon gave a compressive dissertation on compartment syndromes and John Bergfeld led us through the problems and solutions in communicating with the athlete, coach, agent and media after an elite athlete suffers a muscle injury.

The sports pages of our daily newspapers are filled with novel therapies for all forms of athletes' injuries, often unproven and untested.



*Orthopaedic Sports Medicine Committee, Aspetar Doha Qatar
October 2010*

Over the years, we have seen hyperbaric oxygen, calf blood injections, various combinations of growth factors and more recently, platelet rich plasma. Jacques Menetrey gave an excellent dissertation of muscle healing and the potential areas for growth factor enhancement. Geoff Verrall has collected a large amount of data over several years on muscle injuries in Australian Rules Footballers,

particularly the hamstring. He provided a comprehensive report on the incidence of these injuries, factors in the decision to return to play and the surprising news that it is the second game back after a hamstring injury which sees the most recurrent injuries. Willem Van Der Merwe spoke on the prevention of muscle injuries, and in addition, Joseph Lowe and Gabriel Agar have prepared an article on rehabilitation following muscle injuries.

The Closed Meeting was supported by both ISAKOS and Aspetar and all presentations including abstracts, scholarly articles and PowerPoints are available on the ISAKOS website. It is the sincere wish of the Orthopaedic Sports Medicine Committee and ISAKOS that the knowledge assembled will benefit sports physicians and surgeons worldwide and improve both the prevention and treatment of the athletes in their care.

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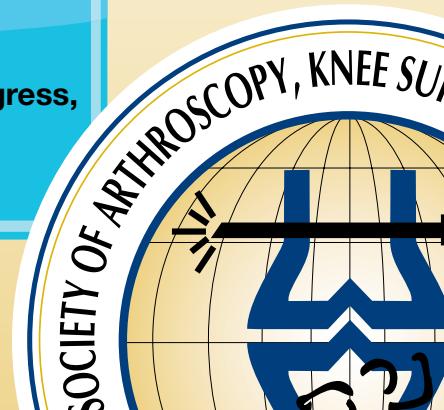


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The WORST-CASE SCENARIO

The Case of the Errant Anterolateral Portal

– James H. Lubowitz MD



Taos Fellows Nick Crawford, Honolulu, Hawaii (left), Ryan Pflugner, Birmingham, Alabama (third from left), and Cory Lamblin, Landers, Wyoming (right), with Fellowship Director James H. Lubowitz (arms folded in disgust after his worst-case scenario). Dr. Pflugner demonstrates his biggest smile after teaching Dr. Lubowitz the Alabama anterolateral spinal needle slide, while Dr. Lamblin in his shirt-and-tie looks relieved that he was assigned to clinic on the day of the worst-case scenario.

As arthroscopists, knee surgeons, orthopaedic sports medicine specialists, and related researchers, we all face complications, some minor and some major, some preventable and some non-preventable. We learn from these complications, and share our knowledge so that other surgeons and their patients may avoid the same fate.

After 18 years of clinical practice, I have experienced my share of unfortunate complications, and more than one worst case scenario. The most recent occurred in August 2011, which was particularly embarrassing because it was my first month with new Fellows, and my Fellows were not impressed.

The case was routine knee arthroscopy. The patient was moderately obese. Obesity is common, but knee surgeons are fortunate, because it is rare that most of the patient's fat is located in front of the knee joint. However, this case was an exception, and the patient in question had approximately 4 inches of prepatellar adipose tissue, making it difficult to palpate the most basic bony and soft tissue landmarks required to establish the anterolateral arthroscopic portal. I therefore took a professorial tone, and explained to the new Fellows that a clinical pearl is to press hard, in the knee arthroscopic soft spots, with the knee at 90°, using the surgeon's left and right thumb tips. Eventually, I explained, if we were patient, the fatty tissue would compress or disperse, and the landmarks would become clear, and the portal could then be established. With that, I took my #15-bladed knife, establish the portal, and proceeded to attempt to place the arthroscopic cannula and blunt trocar into the knee joint—without success! All I could feel was bone, and

I eventually realized that my portal was adjacent to the tibial tubercle, and I was smashing the trochar into the tibia. As usual when things are not going well, it was quite tempting to blame the Fellows or even the unfortunate patient, because the anatomy was disorienting, because the tourniquet and drapes were placed

extremely low as a result of the patient's cone-shaped thigh, but in reality the fault was entirely my own.

Luckily, one of the Fellows was from Alabama, USA, which claims its fair share of the morbidly obese. This Fellow shared with me a very effective tip: In cases of morbidly obese knees, it is prudent to use a spinal needle to confirm the location of, not only the anteromedial arthroscopic portal under direct visualization, but of the initial anterolateral portal, before cutting the skin with the knife. Point taken, I proceeded proximally, placing a spinal needle in the correct anterolateral soft spot, confirming the portal location, and establishing the portal. The good news is that the initial, misplaced portal, seem to have no adverse clinical significance. In fact, due to obesity, we were unable to shave the patient's chondromalacia patella our standard arthroscopic portals, due to the difficult angles created by the thick, subcutaneous adipose tissue. On a whim, I placed my shaver through the initial errant portal, bluntly popped through the joint capsule, and in a stroke of good fortune, had a perfect angle to perform patella chondroplasty. In the end, the errant portal proved useful, and the patient's anterior knee pain ultimately resolved. Nevertheless, my fellows still tease me about the errant portal, an embarrassing "Worst Case Scenario."

The History of Rizzoli Orthopaedic Institute

Bologna, ITALY

S. Zaffagnini

A. Cioni

G.M. Marcheggiani Muccioli

L. Bragonzoni

M. Marcacci

The Rizzoli Orthopedic Institute hospital is set in the monastic monumental complex of San Michele in Bosco, situated on the hills south of Bologna, Italy.

The current monumental complex was built on previous monastic settlements, dating back to the IV century AD. After several setbacks the monastery entered a new phase with the arrival of the Olivetan monks, in 1364 by concession of Pope Urban V. In fact, it was the Olivetan monks that in the following century began the construction of a new monastery, a part of which still remains today. The final shape was determined by architectural additions characterized by different architects, styles and historical periods, although it is historically placed in the sixteenth century when the fundamental works were carried out: the church, the bell tower, and the cloisters.

The monastery has extraordinary architectural and artistic value and houses works of art spanning four centuries: the octagonal cloister by Ludovico and Paul Carracci and Guido Reni (built between 1602 and 1603), the monks' ex refectory adorned by George Vasari in 1539, and the superb library frescoed in 1600 by Domenico Maria Canuti, only to name a few of the main ones.

Few hospitals can boast a history like that of Rizzoli, a history that is closely linked with that of the development of orthopaedics in Italy. Founded thanks to a donation by the surgeon and philanthropist Francesco Rizzoli, the Rizzoli Orthopaedic Institute was inaugurated in 1896 with the aim of setting up an institute for treating rickets and congenital deformities in general.

It was part of the expansion, in the second half of the nineteenth century, of specialized institutes in the treatment of deformities, such as the Pio Istituto dei Rachitici in Milan in 1881 (now the Gaetano Pini Orthopaedic Institute), or the Turin institute for rickets in 1887, which later became the "Regina Maria Adelaide" Orthopaedic Surgical Institute.

Alessandro Codivilla (1861-1912), considered to be the founder of modern orthopedics in Italy, was the first director of Rizzoli. The institute had already begun to admit patients from the furthest regions of Italy, and even from South America, and by the time Codivilla died, in 1912, the Rizzoli institute was well established nationally.



G.Rosaspina, Veduta di San Michele in Bosco da ponente (1820-1828)



Inauguration of the Rizzoli Orthopaedic Institute (june 28, 1896) with the Italian King present.

TEACHING CENTER SPOTLIGHT



Codivilla was followed by Vittorio Putti (1880-1940) who was soon to be regarded internationally as one of the best orthopedic surgeons, in the first half of the century. Putti is credited with organizing and developing the Rizzoli institute (the foundation of the Rizzoli Workshop in 1914 and the "Codivilla" heliotherapy institute in Cortina d'Ampezzo in 1923), besides making advances in orthopaedic research (innovations in the field of the treatment of ankylosis, congenital hip dislocation, post-traumatic deformities, lengthening of the limbs, etc.). In 1917 Putti also founded the journal Chirurgia degli organi del movimento and, two decades later, promoted the integration of orthopaedics and Traumatology. At the 1936 Bologna Congress, the Société Internationale de Chirurgie Orthopédique (SICO) became the Société Internationale de Chirurgie Orthopédique et Traumatologie (SICOT) and Putti was its first vice-chairman. When he died in 1940, the New England Journal of Medicine commemorated him by stating that he had made the best-known orthopedic center in the world.

In 1948 the institute was recognized as a first class specialized hospital for orthopaedics and traumatology. Throughout the '60s and '70s, Rizzoli followed the scientific and healthcare progress made in orthopedics, characterized firstly by the introduction of cemented hip joint arthroplasty (Charlney, 1960) and the stabilization and diffusion of the principles of rigid bone fixation (Müller, Allgöver and Willenegger, 1963).

Today, actually, hip and knee arthroplasty is the most common type of surgery performed at Rizzoli Orthopaedic Institute, involving around 20% of the patients. In addition, in recent decades, Rizzoli has made important progress both in scientific research and in the diagnosis and treatment of tumours of the musculoskeletal system, and has become an important international center in this field.

In 1981 Rizzoli was recognized by ministerial decree as a "Scientific Research Hospital" and enhanced by the addition of the Codivilla-Putti Research Centre, which houses research laboratories and administration offices.

Timeline



The first operation performed at the Institute in 1896



An operation performed by Putti on the occasion of the International Meeting of 1924

The 9th International Forum on Sports Medicine and Arthroscopy



The 9th International Forum on Sports Medicine and Arthroscopy, sponsored by Chinese Society of Sports Medicine (CSSM), Chinese Orthopaedic Association (COA) and International Society of Arthroscopy, Knee & Orthopaedic Sports Medicine (ISAKOS), was held at the Shanghai International Convention Center (SICC), Shanghai, China from 26th to 28th April. The conference was a great success, with more than 1200 attendees – one of the largest meetings for Sports Medicine and Arthroscopy ever held in China! Owing to the participation and contribution of our wonderful faculty, IFOSMA was able to fulfill its mission with great successful and lot of high appraisal. As an executive Chairman of IFOSMA, I represent of above organizers and host, Fudan University Sports Medicine Center and Huashan Hospital, sincerely to deliver my heartfelt thanks to all of you, my faculties, colleagues and friends for your participation and contribution!

During this conference, we also got several support and dedication from both of international organizations and Shanghai government. I have a privilege to thank for the following organizations for their friendship and collaboration, they are the International Federation of Sports Medicine (FIMS), North American Society of Arthroscopy (AANA), European Federation Orthopaedic Sports Traumatology (EFOST), Asia-Pacific Orthopaedic Society of Sports Medicine (APOSSM), Federation Internationale de Football Association (FIFA), Asian Football Confederation (AFC), World Endoscopic Doctor Association (WEDA), Shanghai Medical Association (SMA), Chinese Journal of Orthopaedics, Orthonline, Shanghai Municipal Bureau of Foreign Experts, Shanghai Municipal Sports Bureau, and Shanghai Municipal Health Bureau.

Further, we must thank our distinguished VIPs for their participation in the Opening Ceremony including Mr. Duan Shijie, the Vice Chairman of the China National Sports General Administration; Mr. Liu Yanfei, Secretary-General of the Chinese Medical Association; Mr. Xu Jianguang, the Director-General of Shanghai Municipal Health Bureau; Mr. Li Yuyi, the Director-General of Shanghai Sports Bureau; Dr. Li Guoping, Chairman of CSSM and CASM, and Dr. Wang Yan, President of COA.

Fudan Sports Medicine Center and Huashan Hospital were crucial partners in the successful execution of this course, and we thank them for their remarkable contribution to the conference organization.

This meeting was highly praised by its scale and academic standard. Sixty five internationally renowned faculty members with expertise in sports medicine and arthroscopic surgery contributed 100 wonderful presentations in this meeting.

Twenty seven of the participating faculty were present or past presidents of various international organizations, including ISAKOS PResdeint DR. Moises Cohen, ISAKOS Past President Dr. Freddie Fu, and future ISAKOS Presidents Dr. Masahiro Kurosaka and Dr. Philippe Neyret. Meanwhile, 30 Executive Committee Members from FIMS participated in and give lectures in the Team Physician Courses of this IFOSMA meeting. We also received 87 overseas registrations from 36 countries, and 230 free papers for speech or poster presentation. 48 stations of cadaver workshop and 5 surgical demos were shown via video during this meeting.

Most exciting is that this conference received 22 industry sponsors. On behalf of the host, Fudan University Sports Medicine Center and IFOSMA organizer committee, I would like to thank all of sponsors from domestic and international, the forum could not get such a success without your support!

During this conference, we also developed 49 Chinese orthopaedic surgeons for new registration of ISAKOS membership.

Michele Johnson, the Executive Director of ISAKOS, stated that this conference had fantastic response for organization, academics, exhibition and reception. The 9th IFOSMA was a milestone for ISAKOS, as it marked our third cooperative course in China since 2008 – ISAKOS is proud of our local Chinese partners and how the course has grown in just four short years.



ISAKOS APPROVED COURSES IN REVIEW

This course is viewed to be a milestone step and added a brilliant page to development history of sports medicine for large scale, high grade, tremendous influence and far reaching significance in China. IFOSMA's contribution to the development of Chinese Sports Medicine is believed to be a name-card of China to the world. Almost all leaders and faculties of international associations have set a high value on successful conduct of IFOSMA for successive 9 sessions held by Huashan Hospital, deemed that Fudan University Sports Medicine Center made an outstanding contribution to the development of orthopaedic sports medicine in China.

We deeply appreciated the efforts and supports from all of you, and we sincerely believed that the success of this conference was built on every one's contribution. In the future, more efforts should be taken to promote the education of arthroscopic surgery and international communication between China and international society. And we are looking forward to see a more advanced 10th IFOSMA to provide more ways of communication, more advanced knowledge, and better quality of service in future!

Better City, Better Life. Sports Medicine, Safety Lifestyle!

See you next year!

Chen Shiyi, MD, PhD

Professor & Director, Fudan University Center of Sports Medicine

Professor & Director, Dept. of Orthopaedic Sports Medicine, Huashan Hospital

Director, ISAKOS Approved Teaching Center for Arthroscopy & Sports Injury, CHINA

Vice Chairman, World Endoscopy Doctor Association (WEDA)

& Asian-Pacific Knee-Arthroscopy Orthopedic-Sports Medicine Society (APKASS) & Chinese Society of Sports Medicine (CSSM)

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ICRS – ISAKOS Symposium “Joint Preservation”



10th World Congress of the International Cartilage Repair Society

MAY 12–15, 2012
FAIRMONT - THE QUEEN ELIZABETH
MONTREAL, CANADA

The first ICRS-ISAKOS Joint Symposium was held in Montreal, Canada, on May 13, 2012 at Fairmont the Queen Elizabeth. This symposium was organized as one of the main sessions during the 10th World Congress of the International Cartilage Repair Society (ICRS) under the president of Professor Daniel Saris.

The concept of a joint project has been developed in order to formalize relationship between ISAKOS, the most internationally recognized and biggest society in the field of orthopaedic sports medicine and joint surgery, and ICRS, the most recognized international specialists in cartilage repair, which has been one of the hottest topics in the field of medical science. The collaboration between ISAKOS and ICRS could potentially produce synergy to share the strength of both societies. Based on the concepts, a series of two joint symposia have been planned. Following the Montreal symposium, the second one will be held at the ISAKOS Congress, Toronto, 2013. These two symposia focus on “Joint Preservation”, which is the common important topic for the both societies.

The first symposium invited four distinguished speakers who represent each society moderated by Rocky Tuan (Pittsburgh, USA) and Norimasa Nakamura (Osaka, Japan).

The first two lectures were from ICRS. The president of ICRS, Professor Daniel Saris (Utrecht, Netherlands) introduced the symposium to the audience with emphasizing the significance of the joint program, followed by his lecture “Cartilage Repair to Prevent Osteoarthritis—Fact or fiction?” This lecture comprehensively reviewed the significance of cell therapy in early osteoarthritis (OA) and showed some exciting preliminary results of cell-based therapies. However, in conclusion, Professor Saris stressed the importance of accumulating knowledge of long –term results in controlled clinical trials in order to obtain the true answer for the question as titled of his lecture. The second lecture was done by Professor Susan Chubinskaya (Chicago, USA) with the title of “What is the Key Pathway to Prevent Post-Traumatic Arthritis for Future Molecule-Based Therapy?” In this lecture, Professor Chubinskaya reviewed the recent progress in research on the key molecules which could be applied to biotherapies to arrest and prevent the development and progression of post traumatic OA based on the mechanisms of: 1)Chondroprotection, 2)Anti-inflammatory, 3) Matrix protection and 4) Pro-anabolic, stimuli of cartilage remodeling and regeneration.

In closing her lecture, Professor Chubinskaya stressed the importance of promoting translational research towards the development of appropriate effective therapy in reality.

The latter two speakers were on behalf of ISAKOS, focusing on ACL reconstruction and post traumatic OA. Professor Philippe Neyret (Lyon, France) had the lecture titled “ACL Reconstruction and Osteoarthritis: Evidence from Long-Term Follow-up and Potential Solutions.” He did comprehensive review on the following topics: (1) What is the natural history of ACL deficiency?, (2) Does ACL reconstruction prevent the development of osteoarthritis in the long term?, (3) Can we predict which patients will develop osteoarthritis? ,with introducing his conducted studies with long term follow-up over 35 years. Professor Neyret stressed that meniscus status appears to be a much strong predictor of subsequent development of osteoarthritis in cases of ACL reconstruction and thus the importance of meniscal preservation at the time of initial ACL reconstruction. The final speaker was Professor Freddie Fu (Pittsburgh, USA). Although he was not able to come to the venue, he instead appeared remotely and spoke on “Anatomic ACL Reconstruction – Current Concept and Future Perspective.”

ISAKOS APPROVED COURSES IN REVIEW

With the series of experimental and clinical Pittsburgh studies, he reviewed the functional anatomy of ACL, transition in graft positioning in ACL reconstruction, and how anatomic ACL reconstruction contributes to the restoration of joint kinematics following surgery. In conclusion, Professor Fu pointed out the importance of the development of improved, more objective outcomes measures, including biology, kinematics and imaging.

The course organizers are happy that the symposium was very successful, and highly evaluated by more than 200 participants to the symposium. This was truly attributable to the great work by the four faculties and also very nice discussion lead by Professor Tuan.

As mentioned above, the next joint symposium will be held at the ISAKOS Congress at Toronto, 2013. This symposium promises to be exciting and educational – do not miss it!

Finally, special thanks to the ISAKOS Executive Committee and Office, Stephan Seiler (ICRS) and Bert Mandelbaum (Santa Monica, USA), in addition to all the faculty members of the Montreal symposium, who did tremendous contribution to the embodiment of this exciting project since the initial discussion held in February 2011.

Norimasa Nakamura, MD, PhD

The Secretary General, ICRS

Members at Large, ISAKOS Board of Directors

Deputy Chair of the Scientific Committee, ISAKOS



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ISAKOS & India Arthroscopy Society

MUMBAI, INDIA • MAY 24-25, 2012

The first ISAKOS & India Arthroscopy Society co-sponsored course was held in Mumbai, India on May 24–25, 2012 at the Hotel Hyatt Regency. This course was held in association with Indian Arthroscopy Society (IAS) under the Presidentship of Dr Kanchan Bhattacharya and secretariatsip of Dr Debasis Chatterjee. Also associated was Poona Orthopaedic Society (POS) under the Presidentship of Dr Rajan Kothari and secretariatsip of Dr Neeraj Adkar. The Convenors for this course were Dr Parag Sancheti and Dr Dinshaw Pardiwala.



Over 400 delegates attended this meeting. The presence of Eminent foreign faculty like Dr. Moises Cohen (President of ISAKOS), Dr. Joao Espregueira Mendes (President Elect of ESSKA), Dr. Willem M. Van der Merwe, Dr. Vipool K. "Vic" Goradia and Dr. Luigi Pederzini added value to the course.

The conference was inaugurated at the hands of Dr. Moises Cohen and Dr. Anant Joshi. In his inaugural speech, Dr. Cohen stressed the importance of transferring the latest knowledge, skills, and technology pertaining to knee arthroscopy and knee surgeries to the Indian arthroscopic surgeons. He expressed desire to integrate ISAKOS with Indian Arthroscopy Society to explore various other avenues of mutual interest, including additional regional courses. Dr. Cohen noted the importance of spreading knowledge through the international community regarding the latest knowledge and update on knee surgeries.

The delegates have expressed immense happiness with the format and contents of the program. They have, in particular, highly appreciated the case discussion session and lively interactions with the learned faculty during discussion time. Value addition to knowledge and sharpening of professional skills was experienced by all those present as their bags of take home messages were over flowing.

Dr. Espregueira-Mendes impressed the delegates with his talks and interactive sessions. Dr. Espregueira-Mendes gave a commitment to young orthopaedic surgeons, to design and execute more such programs to give them exposure to newer concepts in knee surgeries and techniques. Dr. Van der Merwe, Dr. Goradia & Dr. Pederzini gave excellent lectures and also conducted workshops.

ISAKOS Executive Director, Michele Johnson noted the appreciation, inquisitiveness and enthusiasm displayed by the younger generation of orthopaedic surgeons participating in this course.

The major sponsors for this meeting were Arthrex, Smith & Nephew and Stryker. Stryker and Arthrex hosted hands-on model workshops, while Smith & Nephew provided an additional lecture on Anatomical ACL Reconstruction. All the delegates were very happy and satisfied with these additional sessions.

The social programs gave a distinctive flavor to the conference. The faculty dinner was held on Friday, March 23, 2012 at Hotel Grand Maratha Sheraton, Mumbai. The Gala dinner was held on Saturday, March 24, 2012 at Hotel Hyatt Regency where the delegates got an opportunity to informally interact with the international faculty on issues of knee surgeries as well as other connected issues.

Dr Parag Sancheti, Convenor of the course, found the response to the course over-whelming. He said the presence of ISAKOS in India will be more visible in the years to come which will help in education and training of budding arthroscopy surgeons in India.



ISAKOS APPROVED COURSES IN REVIEW



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A Discussion on Recalcitrant Osteitis Pubis

CASE DISCUSSION

- Omer Mei-Dan, MD

University of Colorado Orthopaedic
Sports Medicine
Boulder, CO, USA



Treatment prior to orthopaedic referral consists of rest, core stability exercises, corticosteroid injection to the pubic symphysis, pool and bike aerobic work with complete avoidance of running. On referral he is now 5 months into this above conservative protocol and is no better. Examination reveals a 180cm, 79kg very fit elite athlete. He has good general flexibility (Forward flexion knuckles to the floor, SLR 80 degrees bilaterally). Both hips have a good range of motion (40 degrees IR at 90 degrees hip flexion, hip flexion -



The Case. The 24 year old professional national level footballer gives a history of niggling groin pain which started a year and a half ago and then, over the last six months becomes significant right sided adductor and pubic symphysis pain. The player manages to complete an intense preseason training but just prior to first game of the season, a ball kicking activity was followed by severe right adductor origin pain and 'general' groin weakness. Being an important player he continues into the competitive season playing with these symptoms but 5 games later the pain has spread to whole of the groin and deep posterior gluteal regions. He recalls feeling significant adductor and hip flexor weakness and can no longer play.

knees to chest). Hip impingement tests are all negative. Squeeze test using sphygmomanometer measures 120mm Hg and produces right adductor pain and retro scrotal and inguinal pain, all on the right side only. Hernia/Sportsman hernia were excluded and spinal examination proved normal.

Investigations:

Ultrasound inguinal region - no evidence occult inguinal hernia or conjoint ligament pathology. Plain x-rays Normal hip morphology but changes within pubic symphysis consistent with active osteitis pubis. Blood inflammatory markers are normal. XR, CT and MR scan of the pubic symphysis shown below. What is your opinion to the team physician?

WHAT WOULD YOU DO NEXT?



EXPERT COMMENTS



**Christopher M. Larson, MD
Eden Prairie, Minnesota, USA**

This is certainly a very challenging case from a treatment and diagnostic standpoint. There are multiple areas of pain including the right inguinal region, right adductor, pubic symphysis, as well as posterior gluteal region. Normal range of motion and negative impingement testing make symptomatic hip joint pathology unlikely. Osteitis pubis is a frequent finding in these athletes and we found that over 50% of radiographs in elite American football players reveal osteitis pubis even when asymptomatic. The key is to define the pain generators that are limiting with respect to the patients athletic activity. In addition, with the multiple areas of pain anterior, posterior, and in the testicular region it is critical to rule out any GI, GU, or neurogenic (pudendal, ilioinguinal, genitofemoral nerve, etc.) disorders in this particular case. Osteitis pubis alone does not explain all of the complaints in this case.

Despite a "sports hernia" being ruled out I would still have a high index for suspicion for athletic pubalgia and would obtain a specific athletic pubalgia MRI protocol to evaluate the rectus abdominus / adductor apponeurosis. Pain with resisted sit-ups and resisted adduction if recreating the primary complaints during athletics would further support this diagnosis and I would recommend a repair of the apponeurosis with possible partial adductor tenotomy on the right. If there was no lower abdominal component I would consider a pubic cleft injection on the right and if excellent relief would consider a fractional lengthening of the adductor longus if symptoms persisted. If the limiting pain was isolated to the pubic symphysis then an open or endoscopic symphyseal debridement / decompression could be considered but I have typically seen this in lower level athletes with a characteristic waddling gait pattern. I believe there is more going on in this particular case than simply osteitis pubis, however, and further more detailed evaluation and diagnostic injections are warranted in my opinion.



**Victor Ilizaliturri, MD
Mexico City, MEXICO**

The case of a male elite 24-year-old athlete with chronic osteitis pubis represents a challenge. In general most of these cases must be treated initially with conservative therapy and corticosteroid injections as were indicated for the present case. In a non-athletic population, osteitis pubis is generally self-limited and conservative treatment is very successful.

For the elite athlete, recalcitrant osteitis pubis for more than one full competitive season should be considered a failure of the conservative treatment and an orthopaedic consult must be obtained.

In the case that is currently discussed symptoms have been present for a year and a half and adequate conservative treatment has not been successful after a 5-month protocol. Hip joint pathology, spine and sports hernias were investigated and discarded in this patient. Surgical treatment should be indicated.

Several surgical modalities for the treatment of osteitis pubis have been described ranging from curettage to arthrodesis of the pubic symphysis.

In published literature elite athletes seem to respond better to curettage without fusion of the pubic symphysis.

Complete resection of the pubic symphysis may result in posterior instability and pain and may prematurely end the professional career of an elite athlete. Arthrodesis of the pubic symphysis may also result in posterior instability and pain and can present complications such as non-fusion and loosening of osteosynthesis hardware. Published literature regarding surgical treatment of osteitis pubis in elite athletes is limited but seems to support the concept of minimal surgical intervention. Curettage of the pubic symphysis in my view is the most adequate treatment modality for this patient.

The postoperative management is important to reestablish adequate function without pain. Weight bearing should be indicated as tolerated. No strength exercises should be indicated within the first 4 weeks, after this core stability exercises and sport specific training should be gradually introduced.

1) Mulhall KJ, McKenna J, Walsh A, et al. Osteitis pubis in professional soccer players: a report of outcome with symphyseal curettage in cases refractory to conservative management. Clin J Sport Med 2002; 12: 179-81.

2) Williams PR, Thomas DP, Downes EM. Osteitis pubis and instability of the pubic symphysis. When nonoperative measures fail. Am J Sports Med 2000;28:350-5.

A Discussion on Recalcitrant Osteitis Pubis



**Ramon Cugat, MD, PhD
Barcelona, SPAIN**

A 24 year old professional football player with the deterioration showed by the radiological study indicates a chronic pathology of various years of affliction.

Signs and symptoms should be sought out: palpation of the muscle mass of both adductors (Adductor Longus), of the myotendonous junction and especially the insertion of both adductor tendons to the pelvis. Palpation is usually painful or very painful in acute phases radiating to the groin and scrotum in men and perineum in women. Palpation of both inguinal rings with the patient standing to appreciate the degree of the pain, dilation symmetry or asymmetry and rule out any hernias (with the latter usually being negative).

We also perform dynamic ultrasonography for the evaluation of the inguinal rings revealing their status, the presence of a lipoma, the degree of weakness in the abdominal wall and the presence of micro-calcifications in both Adductor Longus tendons. Plain radiographs of the pelvis should also rule out any bone tumor as the age range of the affected population fits in to that which may have bone sarcomas. Hip and spine and lower extremity symmetry should be evaluated.

All this information presented in the case with regard to the players history, examination and imagine used, ratifies the chronicity of the pathology and that conservative treatments have failed to solve the problem.

With certainty obtained our diagnosis is: chronic dynamic osteopathy of pubis preventing playing football for which the treatment should be surgical:

Our surgery technique consists of:

- Epidural anesthesia
- Incision of about 3 cm centered at the origin of the adductor longus
- Longitudinal fasciotomy of the common femoral fascia
- Tenotomy of the adductor longus at the pubic bone insertion,
- Tendon distalization, cut for its ultimate relaxation
- Femoral fascia suture
- Skin suture
- This process is performed on both sides, right and left.

Post operative:

24 hours bed rest. Although once the effects of the anesthesia have worn off, isometric exercises and mobility of the ankles, knees and hips can begin, all without pain.

Physiotherapy and rehabilitation must be progressive and painless.

At no time should concentric or eccentric exercise be performed on adductors having been operated on. Stretching exercises are carried out until good balance between right and left is achieved.

Recover function and physical fitness in order to return back to the discipline of the coach at around two months.

A warm up of about 30 to 45 minutes before each workout and before every game, excluding toning exercises of the aforementioned adductor longus.



EXPERT COMMENTS



**David Young, MB, BS, FRACS (Ortho)
Melbourne, AUSTRALIA**

The history of greater than 6 months groin pain preventing running, sports participation and groin weakness (squeeze test less than 140mm Hg when normal is greater than 180 in an elite athlete) defines this case as recalcitrant Osteitis Pubis (OP) in our clinic. Given the severe changes on radiology including CT fine slice and MRI of the pubic symphysis we would now recommend surgical intervention. In our professional players in Australian Rules Football we monitor for subclinical OP with twice weekly squeeze test screening using either a sphygmomanometer or purpose build squeeze test machine to record falling values as the season progresses. All players usually show some fall but above 180 mmHg is considered normal, 160 starting to be a concern and below 140 the player needs to stop playing and running. At this level pain has usually begun. Core stability work with enforced rest will usually return the player within a few weeks. If pain is severe options in early stages include bisphosphonates if erosive OP is developing, radio frequency denervation for pain and relatively normal scans, anti-inflammatories if squeeze test is above 160mm Hg and pain is a main concern but above all REST for the symptomatic case with typical pain and groin weakness. Excluding compromising FAI in the hips is very important and addressing FAI in the off season is usually performed. Once rest and physical therapy has been followed for 6 months or more without improvement then surgery is considered. If the pubic symphysis is 'intact' on CT scans and MRI simple adductor relief may be considered. Conjoint tendon surgery or repair of 'occult' inguinal hernias is no longer 'fashionable'. For this case presented we would recommend pubic symphysis clearance and repair of the separating adductor enthesis as seen on the MRI by the 'dreaded' white line undermining the adductor origin on the right side. 4 months rehab before running is very important and this athlete would take 6 months to return to sport participation.

Outcome:

The outcome for an athlete with very similar presentation was exactly that scenario and indeed he not only came back recovered but went on to win the MVP in the next season. Now in his third season post surgery he remains symptom free and one of the quickest players in his team. Follow-up pelvic XR is presented:



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June 20–23, 2012

Chair(s): James C. Esch, MD

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AMC
Amsterdam, NETHERLANDS
June 21–22, 2012

Chair(s): Prof. dr. C.N. van Dijk

For further information, please contact:

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Fax: 31-020-5669117
www.ankleplatform.com

BIRMINGHAM PATELLOFEMORAL INSTRUCTIONAL COURSE

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Birmingham, UNITED KINGDOM
June 22–23, 2012

Chair(s): Tanweer Ashraf

For further information, please contact:

David Penford
Tel: 44-(0)1476-860759
Fax: 44-(0)1476-860843
www.birminghampatfem.org

BARCELONA HIP MEETING 2012

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Chair(s): Prof. Enrique Caceres/

Prof. Reinhold Ganz

For further information, please contact:

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www.barcelonahipmeeting.com

ARTHROSCOPY & ARthroPLASTY

University Medical Center
Utrecht, NETHERLANDS
July 2–5, 2012

Chair(s): Jaap W. Willems

For further information, please contact:

Ton van Loon
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Fax: 31-30-2769251
www.shoulder-elbow-knee.nl/

4TH JAPANESE ORTHOPAEDIC SOCIETY OF KNEE, ARTHROSCOPY & SPORTS MEDICINE 2012

Okinawa Convention Center
Naha, JAPAN
July 19–21, 2012

Chair(s): Hiroshi Mizuta

For further information, please contact:

Hiroshi Mizuta
Tel: 81-96-373-5226
Fax: 81-96-373-5228
<http://kumadai-seikei.com/>

ORTHOPEDIC SURGERY CONTROVERSIES 2012

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September 19–21, 2012

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Mark H. Getelman, MD

For further information, please contact:

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Chair(s): David Dejour, MD

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JW Marriott Hotel Ankara / TURKEY
Ankara, TURKEY
October 2–6, 2012

Chair(s): Prof. Sinan Karaoglu MD.

For further information, please contact:

Sinan Karaoglu
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Fax: 90-212-2586078
<http://www.tusyad2012.org/>

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Chair(s): Paolo Adriavanti, 1st Vice President of SIGASCOT and Incoming President

For further information, please contact:

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Queen Elizabeth II Conference Centre
London, UNITED KINGDOM
October 17–20, 2012
Chair(s): Nicola Maffulli MD, MS, PhD, FRCS(Orth) BOSTAA & EFOST

For further information, please contact:

Claudine Thoma
Tel: 31-184-496999
Fax: 31-184-421065
www.wstc2012.com

5TH INTERNATIONAL HIP ARTHROSCOPY MEETING

Alte Kongresshalle
Munich, GERMANY
November 16–17, 2012
Chair(s): Michael Dienst MD, Richard Villar FRCS

For further information, please contact:

Michael Dienst
Tel: 49-89-206082-0
Fax: 49-89-206082-333
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INTERNATIONAL SYMPOSIUM ON CARTILAGE REPAIR OF THE ANKLE-ASIA 2013

Roppongi Hills
Tokyo, JAPAN
August 2, 2013
Chair(s): Prof. Masato Takao, Prof. Jin Woo Lee, John G. Kennedy MD FRCS (Orth)

For further information, please contact:

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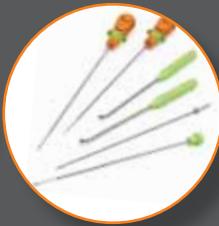
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