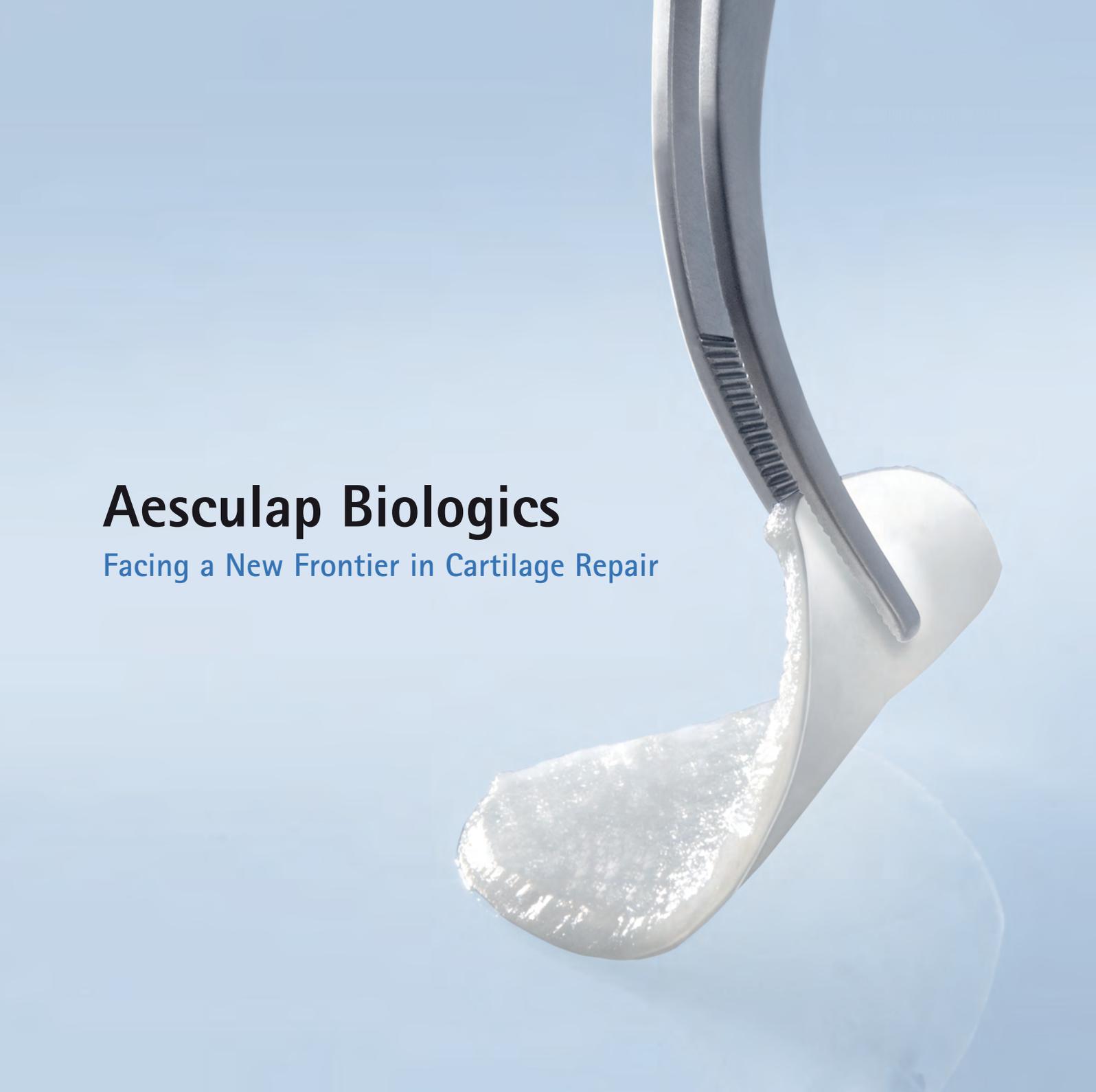


20th
Anniversary
of the ICRS



ICRS newsletter

Featured: ICRS Presidential Line 1997–2017



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OUR MISSION

***ADVANCING SCIENCE & EDUCATION
OF THE PREVENTION & TREATMENT OF CARTILAGE
DISEASE WORLDWIDE***

ICRS 2018

International Cartilage Repair Society

第十四届国际软骨修复协会年会
中国·澳门

Macao (SAR), China

April 09 – 12, 2018

14th World Congress of the
International Cartilage Repair Society

Abstract Submission: Sept 1 – Oct 27, 2017

www.cartilage.org

Mark your agenda!



PRESIDENT'S VOICE



Ken Zaslav

I am happy to inform the members of ICRS that the state of the society is solid. We have had a wonderful group of active board members contributing with hard work throughout the year and an exceptional young crop of new vice chairs and society members actively involved which gives me great hope for the future of

our society. Education chair Brian Cole and his committee have begun planning exceptional meetings for the coming three years and Andreas Gomoll and the regulatory committee are hard at work with both the EMEA and FDA supporting new guidelines to progress research in our fields and keep cell, scaffold and regenerative medicine related techniques available to patients worldwide.

Our communications committee under Stefan Nehrer has produced many wonderful newsletters and Tom Spalding and his finance committee are working actively on planning for a solid financial future. Alan Getgood is working to re-energize the Young surgeons and scientists committee to make our youngest, newest colleagues feel welcome in this growing society, and Jos Malda has been busy with his committee of scientists working to improve scientific training centres throughout Europe and increasing our scientist membership in the coming years. Our By Laws and membership committee under Marcel Karperien has remained busy and 87 new members have joined, and 28 new fellows have been named to the society. Our Scholarship & Fellowship committee chaired by Emmanuel Papacostas has been hard at work planning both surgeon and scientist travelling fellowships to end at both Gothenburg and Macao meetings. Lastly, our newest committee The Registry committee chaired by Leela Biant and the registry advisory board headed by Chris Erggelet are working diligently to bring the International Cartilage Registry

to our members and make it available in most of the world's languages.

We greatly appreciate our Diamond sponsors, Vericel & Aesculap for their continuing support at this unique level and all our corporate sponsors that allow the society to continue to produce great educational experiences year after year. Furthermore, we greatly appreciate the work of our executive office headed by Stephan Seiler who keep us on task in promoting and building this society.

This year and next, we will also have expanded our geographic footprint significantly having just completed our first meeting in the Middle East in Tel Aviv on subchondral bone and we will end my term as President with our first Congress in Asia in Macao. The Tel Aviv meeting hosted by Ron Arbel and Nogah Shabshin was a great academic success and was filled to capacity with members from many countries and many new guests from Israel. The Macao meeting which will be hosted by Yingfang Ao and the Chinese chapter of the ICRS will be an exciting cap and a brave new leap into our next 20 years as a society dedicated to research on, and the Diagnosis and treatment of, Articular Diseases and the treatment and prevention of cartilage injury and Osteoarthritis in the coming century.

To celebrate the first 20 years of our society and the 30th anniversary of the first in man cartilage transplant, we will meet soon in June, at the home of this great achievement, Gothenburg Sweden, Mats Brittberg. Lars Peterson and I invite you to join us at the Heritage Summit for this great celebration of these two important anniversaries in the land of the midnight sun just after the summer solstice on the banks of the Gota Alv. It promises to be a once in a lifetime experience, where a virtual who's who of cartilage repair scientists and surgeons will meet for two days in a single room venue to debate, discuss our past triumphs and failures and prognosticate about the future of our great endeavour.

Ken Zaslav, ICRS President

ICRS Social Wall Launched

The new ICRS's Social Wall on our website www.cartilage.org is a lace for interaction and discussion between ICRS members, staff, industry & friends, in fact anyone interested in cartilage. The purpose of the site is for the free exchange of ideas and commentary regarding issues of interest to those in the field of cartilage science. Posts are provided by the respective authors through the social media channels. The ICRS neither endorses nor verifies third part information.

Engage – Share – Post



ICRS OFFICE NEWS

Welcome to New Members (32 new members since Nov 2016)

New Junior Members

Aihara	Leandro	São Paulo	Brazil
Byrne	Christian	Glasgow	UK
Chae	Dongsik	Incheon	Korea
Chamberlain	Matt	Box Hill	Australia
Fernandes	Tiago	São Paulo	Brazil
Gatenholm	Birgitta	Gothenburg	Sweden
Goldstein	Todd	Manhasset	USA
Guimaraes	Rogério	Patos De Minas	Brazil
Kolbuk	Dorota	Warsaw	Poland
Nunez	Mauro	Cartago	Costa Rica
Tsuji	Akira	Yao	Japan

New Ordinary Members

Banffy	Michael	Los Angeles	USA
Bashingam	Naveen T.	Puducherry	India
Berkson	Eric	Foxborough	USA
Green	Daniel	New York	USA

Huber	Alexander	Virginia Beach	USA
Kanemitsu	Munekazu	Hiroshima	Japan
Massey	Patrick	Shreveport	USA
McGuire	Dawn	Atlanta	USA
Ngai	Aston	Doha	Qatar
Noh	Moon Jong	Rockville	USA
Ogura	Takahiro	Boston	USA
Parmar	Kalpesh	London	UK
Patnaik	Sarthak	Bhubaneswar	India
Roubenoff	Ronenn	Basel	Switzerland
Sandoval	Marcelo	Copiapo	Chile
Smith	Margaret	St Leonards	Australia
Strauss	Eric	New York	USA
Uchio	Yuji	Izumo	Japan
Urita	Atsushi	Chicago	USA
Yau	Peter Wai Pan	Hong Kong	Hong Kong
Ziolko	Rudolf	Köln	Germany

ICRS Member Database Migration

During the last few months, the ICRS has worked tirelessly in a major operation to change our entire IT Registration & Membership Software to improve general data security as well as our membership and registration services. All individual accounts (members and Non Members) have now been migrated to a brand new IT platform and we do hope that no major mistakes or other issues happened. Please inform us by return email if you feel that something is wrong with your account.

We kindly ask all members to access their online ICRS accounts to check/complete/update your personal details. During the very first access, the system will show your details page per page and you simply click on the “Save button” to go to the next page or edit/complete missing information. Your password has now been encrypted and our office has no access anymore to the password information. If you forgot your password, you need to use the “forgot password” options. An email will then be sent to your registered email address to reset your login details. If you have any problem feel free to contact our office at: office@cartilage.org

ICRS Patient Registry Launched – Take Part Now!

The International Cartilage Repair Society has launched the first global, web-based patient registry, offering a unique international data pool for articular cartilage injury, history and treatment worldwide. The Registry will dramatically expand the body of evidence available to clinicians, companies and health funders, providing pooled data that can be harnessed to better understand the most effective, safe, economical and clinically-relevant treatments, devices and practices in the treatment of acute cartilage damage and early osteoarthritis.

“This is a fast-moving field with many new techniques,” said Kenneth Zaslav, President of the ICRS. “The Re-

gistry will allow us to coordinate care and research between our members, and it will help companies see relevant problems sooner, and thereby get a feeling for usage of their technologies. In addition, our hope is that the Registry will serve as a pooled data source for comparing treatments, thereby facilitating more rapid enrolment in prospective, randomised studies – in turn shortening the overall time for improvements in patient care.”

Crucially, the Registry uses a simple, intuitive web-based interface – accessible from computers, tablets and smartphones – to harness the data. First, patients add themselves electronically, and consents to inclusion in the Registry. The clinician then inputs the clinical data, after which the Registry contacts the patient to record their outcome scores and any complications. Along with new data, the Registry is also able to assimilate existing data sets, little or large, thereby immediately bolstering the potential for longer-term follow-up of patients who have previously been in trials, or those already part of smaller registries. “Within the first year of the Registry, we will be able to incorporate 10-year data for some patients and techniques,” continued Leela Biant. Furthermore, in conjunction with core, pooled data sets, the Registry software allows clinicians to bolt on additional scores or unique outcome measures relevant to them.

Regular penetration testing is organised to ensure that security is upheld as storage expands to meet the needs of growing datasets. At launch, the Registry is available in English, with six additional languages planned for the Spring of 2017. Current data is restricted to the knee, with the ankle, hip and shoulder being incorporated in the near future. All ICRS Clinicians are invited to register and start adding their first patients. It is free of charge... See www.cartilage.org

20 YEARS ICRS PRESIDENTIAL LINE (1997 – 2017)

By Stefan Nehrer, Chair of Education Committee

The International Cartilage Repair Society was founded in 1997 in Fribourg as a small group of scientists and clinicians, who had a strong interest of solving the unsolved problem of insufficient cartilage repair. Since that time 12 persons have served as president of this society and developed the idea to a bigger scope and helped to create a worldwide society of clinical treatment, education and science in cartilage repair and beyond that to understand joint function as a complex process. The 20th anniversary of ICRS is a good opportunity to say thank you to our past presidents and also acknowledge the time and effort they have invested to support the society to bring it to the level it is right now.

The presidential line gives the past-presidents a word to remember, criticize or advise the society at this important moment, as they know best what happened and where we should head on to a prosperous future.



1997–1998 Roland Jakob, CH

Orthopädische Klinik, Orthopédie Motier, Switzerland

It was in 1997 that we proposed to a selected group of international clinicians and scientists that we felt it was time to unite the spirits and discuss techniques and results of “cartilage repair”. A First International Cartilage Repair Meeting was put up in Fribourg, Switzerland for which we asked Ernst Hunziker, renowned cartilage researcher from the University of Berne, Switzerland to propose names from the World of Basic Science and together with Pierre Mainil-Varlet, at that time my Research Fellow and spirit behind the idea at Cantonsspital Fribourg, Switzerland where I worked as a Head of the Department of Orthopaedics and Traumatology, we proposed names of clinicians.

We gathered 170 participants, scientists, clinicians and representatives of industry present at that first meeting. We showed Live Surgery: Lars Peterson did a Sandwich Periosteum-Chondrocyte technique for a big OCD of the femoral condyle. We did a mosaicplasty of the femoral condyle and my partner, E. Gautier performed a talar OCD repair using mosaicplasty. It happened to become a very fruitful four days’ exchange that united in friendship single step advocates of mosaicplasty with two-steps cellular ACI proponents which at that time presented the “en vogue” methods besides of course Microfracturing that everyone practiced. One Basic Scientist, a Biology Professor from Germany, mentioned at the end of the meeting with a smile that he had profited a lot of this event in company of Clinicians because “he had not known that cartilage was so close to bone!”

I was proposed First and Founding President; we gave the name to the Society and a friend of mine, graphic artist from Berne created the logo. It was agreed upon that as a rule, researchers and clinicians should alternate as Presidents

and many of those initially present have later become Presidents. As the first task, following up during a next working-meeting that we subsequently had only one year later in the Monastery of Villars les Moines, in the same area next to Murten, we reassembled the Core of the New Society and we were able to create the first accepted Clinical a Radiological Cartilage Classification System named “According to ICRS”, including MRI grading and we also attempted to define Recommendations for Basic Cartilage Research!

My Personal Credo: During my entire clinical activity and during the past 20 years as I was able to be part of ICRS I did not cease to try to convince the attendants of the need and the amazing benefit of generously bringing the axes in order as the first step in cartilage repair whenever there is compartmental overload. However this message is only slowly received and accepted. I keep working on it!

Today, ICRS has developed to a stimulating healthy, blooming and active Society. Three years after my 2-years Presidency I became President of ISAKOS and the two Societies since then began to collaborate well with each other, with ICRS taking the role of the younger sister. But good relations were also created and maintained with OARSI.



1999–2000 Alan J. Grodzinsky, USA

Massachusetts Institute of Technology, Cambridge, USA

At the end of the Second Fribourg International Symposium on cartilage Repair (October, 1997), Prof Roli Jakob (Chair) and Prof Ernst Hunziker (Vice-Chair) along with all the participants formed the ICRS, with Prof Jakob as its first President. This 1st ICRS in Fribourg was a tremendous success, and the level of excitement created by Roli Jakob was the foundation of our Society. With the bar set extraordinarily high to keep our society going, it was decided at that time to alternate meetings between Europe and North America. It was hoped that this approach would take advantage of the tremendous worldwide interest in cartilage repair, including both surgical and basic science approaches. The challenge then was to have an equally successful second meeting to keep the momentum going, and the Society chose Boston as the venue. I had the pleasure and honour of arranging this meeting as local arrangements co-chair with Dr Myron Spector along with an organizing committee including Drs. Jim Herndon, Art Boland, and Tom Minas. (It was at the end of this meeting, November, 1998, that Dr Jacob passed the baton to me as I then assumed the Presidency of ICRS).

We had an absolutely terrific meeting in Boston, in a venue on the shores of Boston Harbour. The conference was highlighted by two live surgeries (continuing the format set by Roli at the 1st ICRS in Fribourg). Dr Tom Minas per-

20 YEARS ICRS PRESIDENTIAL LINE (1997 – 2017)

formed an ACI procedure at the beginning of the second day of the meeting, and Dr Jacob performed a mosaicplasty procedure during the third day, with these live surgeries cabled into the auditorium from the hospital operating theater. As a basic cartilage scientist/tissue-engineer, I found these procedures to be an incredibly important part of the meeting to help identify and understand the challenges, patient population and criteria for performing these procedures (ca. 2000). While there has been tremendous progress in our field since that time, many of these challenges remain to this day. Along with these live surgeries, we continued the practice of combining invited talks from world leaders in the clinical and basic science of cartilage repair, along with short talks and posters chosen from submitted abstracts. It was then my distinguished pleasure to pass the baton, once again, this time to Dr Lars Peterson, one of the fathers of cartilage repair, who assumed the Presidency at the 3rd ICRS meeting in Gothenburg, Sweden.



2000–2001 Lars Peterson, SE

Sahlgrenska Academy, Gothenburg University, Gothenburg, Sweden

The most important decision in my professional life was to leave Sweden for a visiting professorship at The Hospital for Joint Diseases Orthopaedic Institute, New York, USA in September 1982–1983. My research hypothesis was “It is possible to grow chondrocytes in culture and re-implant them to regenerate new tissue in articular cartilage defects in the rabbit knee.” Professor Victor Frankel gave me all the resources in his hospital, laboratories, animal surgical facilities to isolate and grow rabbit chondrocytes, to operate the rabbit knees and with great collaborators Mark Pitman MD, David Menche MD and PhD student Daniel Grande.

Step 1 was harvest of cartilage from both knees. After culture step2 cultured chondrocytes from the same rabbit were implanted in a patellar defect under a periosteal flap. The results were presented in 1984 ORS meeting in Atlanta showing defects filled with hyaline cartilage.

Back home during 4 years in collaboration with Anders Lindahl the rabbit cell culture technique was transferred into humans using autologous serum in the culture media. In 1987 autologous chondrocyte transplantation was approved by The Ethical Committee of the Medical Faculty of the University of Gothenburg and in October 1987 the first cell transplantation in an orthopaedic patient was performed and in 1994 the results of the first 23 patients were published in NEJM. That is how it all started.

In 1997 ACT/ACI was approved by the FDA. Same year professor Roland Jakob, Pierre Mainil and Ernst Hunziker arranged the First International Conference on Cartilage Repair in Freiburg Switzerland. The enthusiasm was high and

we founded the International Cartilage Repair Society a Forum for interdisciplinary collaboration in basic and clinical research and education in cartilage repair. Roland Jakob was elected the first president of ICRS. Al Grodzinsky was elected 2nd president and I was elected the 3rd president.

As a clinician there are many societies to be part of but the unique platform built by interdisciplinary members and the organization by ICRS changing Presidency between clinicians and basic scientists, changing the World congresses from east to west and the educational programs have made ICRS the number 1 society for me. Over the years I have visited all 13 world congresses and taken part in the international educational programs when invited.

I have also these years had the pleasure being the Godfather for ICRS travelling fellows changing every other time with 3 doctors from the western hemisphere visiting selected outstanding universities in Europe and next time travelling with 3 doctors from eastern hemisphere travelling in the United States visiting outstanding research and clinical centres for cartilage repair. The travelling fellowships have been generously sponsored by Genzyme/Vericel. Thank You.

I wish for the young doctors that sponsors could be found to continue the travelling fellowships, an exceptional form of education and international friendship, but with a new Godfather.



2002–2003 Shawn O'Driscoll, USA

Mayo Clinic, Orthopaedics, Rochester, USA

I was blessed to have the opportunity to spend almost 4 years under the mentorship of Prof Robert B Salter at the Hospital for Sick Children, University of Toronto from 1981-1984. During that time my interest in cartilage repair and regeneration was born and grew. I devoted the early part of my career to developing techniques for growing cartilage from postnatal tissues in culture and focused my attention on studying the biology and regulation of chondrogenesis.

For a decade and a half, the field of cartilage research was a lonely one - few researchers or clinicians were presenting or publishing papers. That all changed following the October 1994 New England Journal of Medicine publication by our pioneering colleagues Mats Brittberg and Lars Peterson. As fast as could be imagined cartilage research centres began sprouting everywhere. Companies started investing as well. Start-up companies popped up overnight. The press jumped on any news they were fed about the promise of cartilage regeneration and repair. Arthritis sufferers suddenly had hope. The ICRS was formed and began to blossom.

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20 YEARS ICRS PRESIDENTIAL LINE (1997 – 2017)

I saw the need for organizational structure, accountability and self-governance if the ICRS was going to be a sustainable organization. I devoted my Presidency to accomplishing those three goals. After having served the ICRS as its president, I urged the membership to realize that the field of cartilage repair and regeneration was probably going to follow a 30-50 year timeline. This would necessitate great self-control on our part and a high degree of responsibility towards patients and the media. At that point we were 10 years into this timeline and with no scientific evidence of having advanced yet. Many cartilage repair or tissue engineering programs had ceased to exist when the promise of cartilage repair failed to materialize as expected.

We are now 22.5 years into this timeline. I think most would agree that we still have a long way to go. Future advances will need to provide explanations for why some joints hurt and others do not, given the same degree of cartilage damage or arthritis. We will have to be very clear as to the differences between biological/biochemical/biomechanical evidence of successful tissue repair/regeneration and clinical success as evidenced by improvement in the quality of life through improved function and relief of symptoms in the patient. Knowing expect these two to correlate they often do not.

The future of the ICRS is exciting to contemplate. The contributions that we will be made will no doubt be substantial and lasting. The early goals of bringing people together from multiple disciplines has been successfully accomplished and formed a foundation on which future growth will be possible. I encourage the current and future leaders to always keep a long-term perspective and temper what you think you can do for patients today by contemplating the importance of what will be able to be done for patients in the future.



2004–2005
Ernst B. Hunziker, CH
University of Bern
Center of Regenerative Medicine
Switzerland

When the idea of founding the ICRS was first conceived its pioneers had a very clear notion of what its aims should be and were committed to their pursuit. The intention was to bring together in triadic union (St. Patrick's shamrock: a trifoliate leaf) scientists, clinicians and commercial partners with mutual benefits being derived from a free interdisciplinary exchange of knowledge and experience. In the mind's eye, the annual meetings were perceived as a stage upon which participants drawn from the three branches each had their own particular but equally important part to play in the performance as a whole. The pioneers were sanguine in the belief that the enacted performance would be a rewarding experience for all concerned and that it would

perhaps afford unsought opportunities for future interdisciplinary collaborations.

In the early days of the ICRS, this ideal was respected and upheld. But alas! With the passage of time, the intertwining threads began to unravel, slowly, yet inexorably. Now, the three branches are no longer equally represented at the meetings and the parts they play in the performance are not equally weighted. And although the participants are nominally brought together, once on site "birds of a feather flock together". Had the vision of the pioneers been no more than a dream that could not be realized in the real world? – a castle in the air that was beyond reach? No! I think not. As Henry Thoreau once said (paraphrastically): "Yes! castles in the air; that is where they should be; but now we must build the earthly foundations to support them". My wish for the future of the ICRS is that the task of building these foundations that was enthusiastically taken in hand by its pioneers be not abandoned. Even in the regrettably materialistic world that now exists, there are surely still a few idealists who can believe in a dream in a reality and who would be committed to its realization.



2006–2007
Mats Brittberg, SE
Cartilage Research Unit
University of Gothenburg
Kungshälska Hospital, Sweden

I remember when I got an invitation from Roli Jakob and Pierre Mainil-Varlet to come for an up-start meeting for a cartilage society in Fribourg, Switzerland 1997. At that meeting ICRS was founded and the founding president was Roland Jakob. Almost 10 years later, I became myself president of ICRS in San Diego. ICRS had become an established society and in San Diego we decided that focus should be on globalization and collaboration on 5 continents in the field of cartilage repair. World series on cartilage repair was started during that time period as well as an increased number of local country cartilage clubs especially in Poland, Germany and India. That year the society also started up guideline groups for histology evaluations resulting in a guideline paper. Such guideline papers have been important contributions from the society during the years making our voices heard also to non-believers and decision makers.

After San Diego, we decided to go to Warsaw in Poland. We were suggested to have our meeting in a Hilton hotel. It sounded nice but the hotel was not even built just planned. With strong promises we signed the contract for the hotel but it was a bit stressing to visit the building area with plastic helmets 6 months prior to the meeting with a lot of remaining constructions. However, the hotel became ready in time and the meeting was successful.

20 YEARS ICRS PRESIDENTIAL LINE (1997 – 2017)

It is interesting to see how many cities and tourist organizations have been interested to get our society to their conference centres. During that time period, the society understood the importance of having a strong and continuous executive office being the expert of choosing the right venues and to the right costs. Besides the important science, the meetings have been very well organized and such an executive organization is the spine of the society making it stable.

The motto from start, 20 years ago, was to cover the cartilage area from the tip of the nose to the great toe. To do so, the society has involved basic scientists and clinical researchers from different specialties working on this intriguing tissue; cartilage. I am happy to have been involved in the birth of the society, its childhood, adolescence and now established as full grown up as a Society in collaboration with the other scientific dragons like ISAKOS, OARSI, ESSKA and EFFORT.

I hope the ICRS for the future years will be able to keep its peculiar nature with its even mixture of basic and clinical science. I hope also that the society will be able to reproduce the friendly cosy atmosphere that we experienced at our first pioneering ICRS meeting in Fribourg 1997 and since then during our grand meetings every other year!



2008–2009
Bert Mandelbaum, USA
*Orthopaedic & Sports Medicine
Group, Santa Monica, USA*

10 Lessons learned in 20 years of cartilage repair.

In twenty years of Cartilage science and practice our field has evolved with respect to concept and technology. In some areas there have been major steps forward, some backward and others a slow but steady progression. Here are the top 10 lessons and important reflections.

10. The only constant is change. In 1996 Cartilage was defined by deep, superficial and calcific layers leading to subchondral bone at our first ICRS meeting! Since we have defined the nature and importance of blood supply, hormonal receptors including estrogen, progesterone and androgen a range of cytokines, anti-friction molecules such as lubricin or PRGF-4 all of which with complex genetic regulation with response to forces over time.

9. There are complex and transformative details and factors that include biomechanical transduction, inflammation, biochemical approaches and a specialized team required for basic and clinical science and clinical practice. At all times one must consider organ, tissue, matrix and molecular details.

8. In athletes there is more Osteoarthritis earlier in life due to injury such as impact, overuse and ACL tears. In defining chondropenia as the journey to Osteoarthritis this evolu-

tion results in significant deficits in functional outcome. Cartilage repair is more challenging to get durable high performance repair for full participation in sports. Prevention program implementation is essential to reduce articular cartilage defects incidence and chondropenic progressions towards osteoarthritis.

7. Clinical results and outcomes have been linked to Patient Reported Outcomes (PROs) and are now the major determinants of efficacy. Translation of these tools and the impact of each Cartilage repair intervention over time have helped us craft the concept that one procedure doesn't fit all situations. Important patient and lesion factors include size, location, depth functional requirement, timing and age.

6. Allografts are immune privileged creating a myriad of options for cellular, chondral and Osteochondral transfer with studies revealing long term survivorship. Future innovation will focus on optimal methods for procurement, preservation, transplantation and performance.

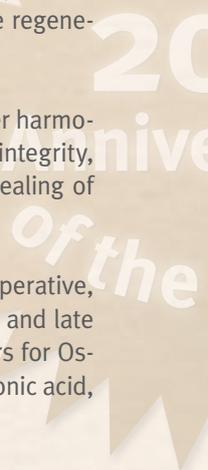
5. Comprehensive Regeneration requires cells (chondrocytes and stem cells), growth factors (PRP) and a spectrum of scaffolds. Stem cells have tremendous appeal to all patients and consumers. Results from Stem cell for cartilage and bone repair have revealed equivalence to other techniques. The future will focus on steps required to synergize Industry based intellectual properties to optimize regenerative potential and performance.

4. The knee joint is an organ and we must consider harmoniously all aspects alignment, meniscus, ligament integrity, size depth, location, Bone Marrow lesions and healing of bone is essential for ideal clinical management.

3. Orthobiological adjuvants are focused as non-operative, preoperative, intraoperative post-operative early and late interventions. These also can be disease modifiers for Osteoarthritis and may include Glucosamine, Hyaluronic acid, PRP, IRAP inhibitors and hormones.

2. Regulatory global issues and challenges remain our most significant challenge to performance fund pivotal trials. All stakeholders including clinicians, scientists, industry and regulatory agencies must collaborate more avidly to continue innovation in the areas of cartilage repair, facilitation and prevention of osteoarthritis

1. The ICRS is the ideal entity to lead, connect and transform this very dynamic field.



20 YEARS ICRS PRESIDENTIAL LINE (1997 – 2017)



2009–2010 Lisa Fortier, USA

*Cornell University, Clinical Sciences
Ithaca, USA*

Prior to becoming President, I served as Treasurer for the ICRS. These years of experience gave me tremendous insight into the financial aspects of the Society.

It became clear that we had not only grown in membership and in our Mission, but we had outgrown our financial management company. With the contract we were operating under, we had no mechanism to develop new initiatives nor to save for the unexpected. The management company had been with the ICRS since the beginning of the Society, so it was more than a simple business transaction, there were relationships at stake. I reached out the prior ICRS presidents for their wisdom, and that was the beginning of the Emeritus Committee! Although there is clear value in new leadership, the experience, perspective, and support of those that served before me was critical for gaining the trust of our society members to endorse the changes were needed to make to grow as a professional organization. We hired an expert attorney to help us establish the ICRS as a not for profit, terminated our relationship with the management company so that we could manage our own finances, and substantially revised our society by-laws. It wasn't all legal and finances, I was fortunate to preside as President of the ICRS when we launch our own scientific journal "Cartilage" and during the 9th ICRS World Congress in Sitges, Barcelona Spain where we had record attendance and participation by industry exhibitors. I am forever grateful for the experiences and life-long friendships that I have gained by being a member of the ICRS and look forward to learning about continued achievements by our members.



2010–2012 Daniël BF Saris, NL

*University Medical Center Utrecht
Orthopaedics, Utrecht, Netherlands
Mayo Clinic Orthopedics
Rochester, USA*

ICRS has grown and become not only a wonderful family by its self but also found its place and important function in the diversity of organizations we know in the field. We have made the step from a bunch of well-meaning volunteers to a well-run organization of professionals that many know and that is making a difference. This has been achieved while retaining our up close and personal feeling! Many of us see each other very frequently through ICRS related events and contacts and I am proud and very happy to call my ICRS buddies, current and former board members some of my best friends. ICRS has taught me a lot and I feel proud and confident to have made a meaningful contribution.

The single most important characteristic we have is that when things get tough we are there to address the challenge together. This was clear when we had financial challenges and legal dispute but also when personal events influence and change our daily lives. ICRS is a great TEAM and "together we achieve more" as Dr Mandelbaum says ;-)

I trust the founders are proud and happy to have seen their baby grow. I joined as research fellow just after the first meeting when my mentor Shawn O'Driscoll suggested this could be my thing, and oh was he right. His example and the start of professionalization we then made has helped set the stage for what we have done and become since. It also shows we can play a role, then transition elsewhere and perform again which is great. Just as the friendship, warmth and the very bright future ICRS has! The heritage meeting and the celebration of 30 years ACI and 20 years ICRS are of monumental importance. I salute and thank our Swedish trio Lars, Anders and Mats, the team around them and sometimes wonder where we would have been and what we would have been doing without the courage they had as did the patients who trusted them. Now we sing, drink, jam rock and roll shop mac products, banter, play hard, work hard, talk watches and travel the world with each other what a joy to be continued and cherished.



2012–2013 Anthony Hollander, UK

*University of Liverpool, Institute of
Integrative Biology, Liverpool
United Kingdom*

I first went to an ICRS meeting in Toronto in 2002 and realised from the first day that I had found my home. The unique hotchpotch of clinicians, scientists and industry experts all working towards the same goal of understanding how best to repair cartilage was a wonderful discovery. Of course, I didn't imagine at that time that a decade later I would be elected as the 10th ICRS president and get the chance to play a small role in the Society's history.

When I look back on my time as a member of the Executive Board, I can see clearly that ICRS is a highly innovative organisation that gives its elected leaders the opportunity to experiment with new ways of doing things. My Fellow Board members were uniformly open-minded in thought and wise in their counsel. Where I had good ideas they supported me in putting them into practice. The innovation I am most proud of is introduction of the "ICRS Presidential Summit" – a much smaller meeting than the World Congress, designed to keep everyone in one room to stimulate extended discussion of difficult topics in a relaxed atmosphere. The 2017 Heritage Summit is a further iteration on this theme and I am very happy that the basic format has stood the test of time.

20 YEARS ICRS PRESIDENTIAL LINE (1997 – 2017)

The other dominant memory for me is the occasion of my Presidential Dinner at Ephesus. The tradition of the dinner is a wonderful way for the out-going President to say thank you to the community that has support him or her in the preceding years. As soon as Izmir was chosen as the venue for the Congress I knew that the dinner had to be at Ephesus and indeed the Celsius Library was a truly memorable backdrop.

So what would I change about ICRS? In truth, not very much. I would like to see our female talent making it through to senior executive positions more frequently and of course I would like to see even more basic scientists playing a larger role at Board level. But on balance, I think ICRS has found a fantastic recipe for success and I wish it all good wishes for the next 20 years as this recipe is gradually allowed to evolve and improve.



2013-2015 Christoph Erggelet, CH

*University of Freiburg, Germany &
Alpha Clinic, Zürich, Switzerland*

Why did you become president of ICRS? - that was the first question from the editor of this newsletter edition. Well - I do not know. The members of ICRS made this decision by electing me into this position. The question should be: Why did I put myself on the line and proudly accepted the voting? After getting older with the society after day 1 in Fribourg/Switzerland and staying mentally, academically, geographically etc. close with the society it is normal that you see options, chances and problems as well. Ideas regarding new developments, education possibilities (Surgical skills, Focus meetings...) and admin solutions (e.g. foundation of an independent administration entity to limit liability for the society,) kept popping up and the best way to realize ideas is to take responsibility and appreciate the great team spirit in the boards of ICRS. Inside ICRS it was a strategic decision to further define the competences of executive board, general board and committees. Standard operating procedures vs. individual execution! Likewise, the relatively short presidential terms were discussed more than once but kept in the bylaws since they limit the chances of short term actions for self-profiling but require a more longitudinal planning to solve future problems.

Would you do it again? - question number two. YES - definitely. Presidential suites and large, attentive audiences compare well to domestic orders and nerdy hospital directors! ;-) Seriously - being president of ICRS took lots of time, cellular activity (more brain cells than chondrocytes), patience, money... - but it was well worth it to see sustainable results grow - like the cartilage registry - hopefully for a long and bright future of cartilage repair and the treatment of OA. Defining and reaching

goals in a team of dedicated people in an atmosphere of friendship and with lot of laughs - what else can you ask for? I am thankful as well for the chance to meet the brightest brains in the industry and share experiences and perspectives.

What do I hope for? - Continued dedication, ideas and willingness to share of all the members of ICRS - independent of position and admin ranking. This is the only chance to further advance the treatment of cartilage diseases and prepare ICRS for cartilage repair 5.0!



2015-2016 Norimasa Nakamura, JP

*Osaka Health Science University
Institute for Medical Science in
Sports, Osaka, Japan*

ICRS is a unique embodiment of the international group that consists of scientists and clinicians from diverse specialty fields with the special focus on cartilage. Thanks to the great efforts by the society in recent years, ICRS is now recognized as the top specialty society of bio-therapy and prevention in joint injury and pathology. Accordingly, ICRS now contributes to various collaborative programs of many international and regional society's meetings such as ISAKOS, OARSI, SICOT and ESSKA. This clearly suggests the increase in our presence in the orthopaedic and musculoskeletal research field.

On the other hand, with the advancement of science, the mechanisms of joint physiology and pathology have been revealed to show more diversity and complexity. Accordingly, it is clear that we need more drawers to address to the detailed problems based on scientific evidence. Also, we should always be ready to introduce any latest scientific information into our society. In this regard, what is our next stage? During my Presidency, the executive board agreed with the idea that ICRS needs to open the focus and embrace the entire spectrum of the „cartilage disease,“ that is osteoarthritis (OA). We should once revisit the simple question, “Why do we need cartilage repair?”

We may easily say, “It is to prevent from OA.” Yes, prevention of OA is one of our ultimate goals and thus, we should more straight make this goal as our principal mission. It is the time for paradigm shift! ICRS has been prioritizing the research with clinical relevance and this makes us very unique and different from other societies which are focusing on OA. Therefore, the shift of our direction does not mean the loss of our raison d'être. Now we want to be on the forefront of cartilage and early OA research internationally to move the field and the ICRS forward. In order to expanding our research circle without losing the scientific quality, we should not hesitate

20 YEARS ICRS PRESIDENTIAL LINE (1997 – 2017)

to incorporate new research specialists along with new ideas and technologies to our society. Such our new concepts must be well reflected to the scientific program of the next Macau meeting is 2018. Let's work hard towards the new direction.

Finally, it is my supreme pleasure to share the wonderful moment at the coming heritage summit meeting for the celebration of 30 years ACI and 20 years ICRS. Cheers for the successful history of our societies and once again, thanks the founding members for having developed the basis of ICRS.



2017-2018
Kenneth Zaslav, USA

*Advanced Orthopaedic Centres
Richmond, USA*

I am the most recent in this long prestigious line and I am surprised and honoured to be listed among these great men and women. I joined the ICRS as a young surgeon in private practice at the Boston meeting 1998, the second meeting of the society, and was immediately enamoured by its dual focus not just on clinical data but on basic science as well. As an American member, I felt immediately accepted by the membership and encouraged to get involved in clinical research. This group has been my closest worldwide medical and scientific family for the past 20 years and I have made many friends and garnered many mentors over my time here. I have been proud to watch this society, started by a few true pioneers, blossom into the largest multi-ethnic, multi-cultural society of both scientists and surgeons for scientific knowledge around articular cartilage.

I began to get involved in the board first as a board member with Drs Peterson, and Mandelbaum and then was asked to get involved in the executive committee by Dr. Lisa Fortier. All of them have encouraged me in my work over the years. Under Lisa's Presidency she, Anthony and I rearranged the board structure through a committee on committees and By-laws changes. Dan Sarris continued that strategic work and opened the board membership to more members bringing in new blood. As Treasurer I served two Presidents, Anthony Hollander and Chris Erggelet and was Vice President under Nori Nakamura. My main goal after the new independent ICRS organization was formed was to put it on a safe economic footing so we could pursue our work in a fiscally appropriate manner in this great field. I am proud to say that over the past 5 years the organization has been in the best financial shape it has been in through its first two decades while during this time staff has grown from 1 full time person to three with the ability to put on, not only our Scientific Congress, every One and One half years, but also at least 3-4 focus, summit and Laboratory course each and every year. These scientists and surgeons and staff have become great friends and I am sure if ever asked to do it again I would gladly serve.

This year as President has been an exciting and very busy cap to my time with this great organization and I look forward to shepherding the ICRS through its 20th year and into our future as the most relevant organization in Regenerative Medicine in Orthopedics and the most welcoming to interested new members, both clinicians and scientists. I hope I can serve as effective a role as mentor for our future leaders as the men and women listed before me have in my case.

OUR MISSION

**ADVANCING SCIENCE & EDUCATION
OF THE PREVENTION & TREATMENT OF CARTILAGE
DISEASE WORLDWIDE**

REPORT FROM PAST EVENTS

■ ICRS Focus Meeting – Bone Marrow Edema & Subchondral Bone February 09-10, 2017, Tel Aviv - Israel

By Massimo Berruto



Last February, Tel Aviv provided a wonderful setting for the ICRS Focus Meeting on Bone Marrow Edema and Subchondral Bone. Organized and directed by Ron Arbel, MD, and Nogah Shabshin, MD, this two-day event was created as an opportunity to take an in-depth look at the various aspects of bone

marrow edema syndromes and their relationship with subchondral bone. Although bone marrow edema is a very common condition, its name, which essentially describes a pathological MRI image, still generates confusion. Indeed, there is still no consensus about the terminology to use in reference to this pathology, and there are continue to be no clearly defined guidelines to help clinicians weigh up the different treatment options that have been proposed. The recent meeting may be seen as an initial step towards creating consensus on all aspects of this pathology, from the need for common terminology to the formulation of clear and correct definitions of the different expressions of the disease, as well as correct and appropriate indications for the different treatment options.



Tel Aviv, warm and sunny in early February, provided an excellent venue for this meeting. It is a young, rapidly-evolving city where crumbling old buildings are making way for new, modern ones. What is more, with countless nightspots springing up in the various old districts of the city, now refurbished, and attracting its young people (the real soul of the city), the place has a lively buzz well into the night. All this, together with the Mediterranean sea view, the traditional flavours of ancient and modern Jaffa, and the abundance of young artists' studios everywhere, is what today makes Tel Aviv one of the most exciting and interesting cities to visit and experience.

On the first day of the meeting, participants focused on the development and definition of correct terminology for referring to the different presentations of bone marrow edema,

and on efforts to understand its etiology and relationship with subchondral bone, cartilage and other intra-articular anatomical structures. With regard to the first of these aspects, it is now clear that the term spontaneous osteonecrosis of the knee (SONK) is to be considered a misnomer, and that the condition it indicates is actually a consequence of a subchondral insufficiency fracture (SIF) (Yamamoto) or a spontaneous insufficiency fracture of the knee (SIFK) (Shabshin). T. Yamamoto, from Fukuoka, Japan, opened his presentation by clarifying the marked differences between SIF and osteonecrosis (ON). Whereas ON starts with an infarction, which is followed by secondary development of bone marrow edema and subchondral collapse, in SIF, there is no previous ON and the bone marrow edema is secondary to a subchondral fracture, visible on T1-weighted images as an irregular line with low signal intensity. SIF mainly affects older women and shows correlations with obesity and osteoporosis, whereas ON affects younger patients, with equal distribution between the sexes, and is more frequent in those who use alcohol or steroids.



Nogah Shabshin suggested that bone marrow edema syndromes (BMES) might be classified into the following three groups:

1. Reversible: Transient osteoporosis of the hip (TOH), regional migratory osteoporosis (RMO) and complex regional pain syndromes (CRPS)
2. Irreversible: avascular necrosis (AVN) and SONK
3. Reversible or Irreversible: SIFK

In this classification, however, it is important to remember that, as mentioned above, SONK must be understood as the consequence of SIFK that has become complicated and evolved. In Shabshin's view, the condition of reversibility is denoted by the absence of subchondral bone modifications other than edema, while BMES should be considered irreversible in the presence of a > 4 mm-thick subchondral layer with low signal intensity and an abnormal contour. Shabshin went on to point out that from an epidemiological point of view, SIFK occurs in the over-50s, with equal frequency in men and women, and most often involves the medial femoral condyle. On MRI, soft tissue edema is the first and only sign of an imminent SIFK. Pain is obviously the main symptom of the condition.

With regard to the etiology, bone marrow edema lesions (BMEL) can be a result of: SIF (Yamamoto) / SIFK (Shabshin),

REPORT FROM PAST EVENTS



extrusion or degenerative meniscal lesions (Shabshin), meniscectomy (Linden Ganz), coagulopathies (Orth), hormonal factors (Galea), or altered homeostasis (Dye) secondary to osteoarthritis. In particular, Linden Ganz described a cadaveric study in which he demonstrated that medial partial or subtotal meniscectomy increased the peak pressure and contact pressure on the medial compartment, while at the same time reducing the contact area. These findings, which were statistically significant for the medial compartment, were less clear in the lateral compartment.

Orth presented a literature review and an experimental study on the role of coagulation abnormalities in BMEL onset. In 52 studies involving 2,908 patients, a total of 48 hypofibrinolytic and/or thrombophilic markers were found that could be correlated with the development of BMES or ON: these included raised lipoprotein levels (confirmed by Orth's own experimental study), decreased concentrations and function of fibrinolytic agents, increased concentrations of thrombophilic markers.



The second day of the meeting was given over to debate and discussion on the treatment of BMEL and osteochondral lesions. Conservative treatment plays an important role in the early stages following the onset of the edema. Ranen Debi demonstrated the value of using certain supports that, applied underneath shoes, allow unloading of the edema area. Yftah drew attention to good results obtained through hyperbaric oxygen therapy, while Massimo Berruto presented a re-appraisal of the currently available drug therapies, highlighting the effectiveness of bisphosphonates, and in particular neridronate in the treatment of BMES secondary to knee osteoarthritis.

Lisa Kon and Andrew Levy then presented promising results obtained following the use of intralesional stem cell injection (Kon) and subchondroplasty (Levy) to treat

conservative treatment-resistant BMES. Finally, Massimo Berruto and Francesca Vannini presented the results of treatment using a biomimetic osteochondral scaffold in selected knee osteonecrosis cases (Berruto) and fresh osteochondral allografts in osteochondral lesions of the knee and ankle (Vannini). The meeting's final podium presentation was given by Vincenzo Condello, who talked about results obtained using Nusurface or Kinespring in the early treatment of medial osteoarthritis of the knee. The proceedings ended with a faculty meeting led by Giuseppe Filardo, whose aim was to reach an initial consensus position and start a process that will lead to more in-depth scientific investigation and greater understanding of bone edema, an extremely important yet still little known topic.



This focus meeting on bone marrow edema, which stimulated some very lively and in-depth debate among more than 200 participants, can be considered a great success, from both the scientific and the attendance point of view. It is now to be hoped that it will indeed prove to have been the first step in a process of more intensive investigation and growing understanding of this extremely common pathology. We will remember our days in Tel Aviv for the excellent organization of the event, for the scientific content, which was of the highest level and also for the delightful hours spent getting to know something of this splendid city.



REPORT FROM PAST EVENTS

■ Interview with the Course Directors Ron Arbel & Nogah Shabshin

Interview by Stefan Nehrer, Krems, Austria



SN: What was your scientific experience in Tel Aviv?

It was a good and well balanced scientific program that combined clinical and basic science together. Most of the lectures were well prepared and cover the subject properly

SN: Did your conception and design of the scientific program work?

Yes, we try to combine all the aspects of the subject and it works quite well

SN: What were the highlights?

For me the highlights were: 1. The response from the audience about the high level of the presentations. 2. The time for question and answers and for convening and changing ideas

SN: Why was the number of participants so high?

The Israelis participate because the high level of the lec-

tures and lecturers, especially the basic science, about all the other may be some of them came also to travel in Israel??

SN: How was the interest of the industry to be present?

I have talked with almost all of the companies; most of them were very interest in taking part in the meeting although the subject of the meeting was not connected to their profile of sales.

SN: What was new or hot?

The main thing was the recognition of all the participants that BME is a multifaceted entity and we tried to establish a „study group“ in this issue, (the first meeting at the end of the second day was not as successful as we thought) hope it will continue....

SN: Was it difficult to fill the program?

It wasn't difficult but takes time

SN: What was your personal motivation?

To discuss this items (BME and Subchondral bone) that are very important to the clinicians (like me) and the literature still do not have a solid proven idea about it. Furthermore, to bring people from over the world to Israel.

SN: What should be addressed more?

More time for discussion and round tables.

SN: What was your personal experiences in Tel Aviv?

Except minor interruptions, the meeting was good, cover the subject properly, Tel Aviv is beautiful, the venue was good and the number of participants were ok.

SARDINIA EARLY OSTEOARTHRITIS COURSE FOR RESIDENTS, ITALY

By Francesco Mattia Uboldi



With the aim of spreading the culture of Osteoarthritis prevention, organized by Francesco M. Uboldi and Andrea F. Manunta (Sassari University) a theoretical and practical course was held on October 22 at Sassari, Italy. The course was designed for graduate students of orthopaedics and physical medicine,

for young orthopaedic surgeons, and general practice doctors. Topic of the course was the identification and classification of patients with early osteoarthritis, and improve the knowledge about its therapeutic possibilities: surgical and conservative.

Great interest was aroused by first session with the concept of „risk factor“ assigned to all those paramorphism, trauma and surgical procedures, that characterize each individual patient's clinical story. Early osteoarthritis diagnosis, in accordance with the latest guidelines, is still often underestimated. Although now there is agreement between all

the experts, the opinion that some surgical gestures can have a detrimental effect on the joint health is often forgotten among the younger or less updated colleagues. Importance of the preservation of the meniscus (“Save it!”), reparative or regenerative treatment of cartilage lesions (“Restore it!”), and post-trauma rehabilitation plans (“Protect it!”) were the core topics of the session's lectures.

The second session followed with brief presentations with the aim to discuss the state of art of medical conservative treatments of osteoarthritis and to have a comprehensive insight of it: hyaluronic acid supplements, steroids injections and innovative therapies with Platelet Rich Plasma, Bone Marrow and Adipocyte Stem Cells.

There was a final practice session on joints mannequins, where the residents and students could simulate intra-articular injections after the explanation of the best techniques from the teachers. The success achieved by this course highlights the need to increase the number of this type of meeting, to allow most people to update in these important topics, especially young medical doctors and orthopaedic residents.

20
Annive
of the

UPCOMING ICRS EDUCATIONAL EVENTS

■ ICRS Heritage Summit - 20th ICRS Anniversary June 29 – July 1, 2017, Gothenburg - Sweden

By Kenneth Zaslav and Matts Brittberg



It is our great pleasure to welcome you to the 4th ICRS Presidential summit, this year our Heritage summit, celebrating two seminal events: the founding 20 years ago of this great society, The ICRS, and the first in man implantation of cultured chondrocytes by our esteemed members Drs. Lars Peterson, Mats Brittberg and Anders Lindahl. The summits began under the Presidency of Anthony Hollander, first held in Tallinn, as a unique small venue meeting where scientists and surgeons can meet for two days of in depth lectures and interactive discussions on an important scientific topic related to our work. This year is a little different as we celebrate these two wonderful anniversaries and take time to both congratulate ourselves on what

we have achieved in the last 20 years, acknowledge our failures and look forward to what the members of this society can achieve in the next two decades.

Our first day will concentrate on where we have been and celebrate the great work done by our early leaders in the field and those that have come behind them. The roster of speakers is a virtual who's who of the cartilage world. The final half of the meeting will look to the future: what is new today, what our young researchers and surgeons are working on, and where we are headed both in cartilage research, the treatment of Osteoarthritis and use of Regenerative medicine techniques in the future.

The meeting is being held in the home of Lars, Anders and Mats, and we will honor their seminal contributions by attending this great party in the land of the midnight sun in the beautiful city of Gothenburg Sweden. Goteborg, the beautiful port city on the Kattegat at the mouth of the Gota Alv, where the river drains into the sea was the home of the great ocean explorers of earlier centuries. The Viking spirit lives on in the physicians and scientists that push the boundaries of our existing knowledge to make a better world.

We look forward to hosting you on this very special occasion to learn debate and prophesize about the future of our field.

■ ICRS Focus Meeting – Osteoarthritis in the Athletes Schulthess Clinic Zurich – Switzerland Sept 28 – 29, 2017

By Gian Salzmann



The focus of that meeting will be „Osteoarthritis in the Athlete “. A topic that everybody is and will be confronted with more and more in the future. As our population is being increasingly demanding and involved in more sporting activity than ever the rate of trauma and therefore dege-

neration is logically increasing as well. “I have mild pain. You have mild arthritis. I want to do sports like ever before.” That would be a typical “communication” between physician and surgeon. The treating doctor as to be optimally equipped with knowledge and instruments to treat this collective of patients.

During the meeting, we will look at all major joints that are typically affected: hip, knee and ankle. Mostly clinical topics (conservative and operative) will be added by some basic scientists that will give insight what is co-

ming from the bench such as MSC application, biomarkers, distraction, novel MR imaging methods and intra-articular medication...

Virginia Kraus from Duke University will give a highlight lecture on Osteoarthritis. Tim Spalding will report on when we can still approach from a biological standpoint and when it is too late to save the joint. Michael Leunig plans to report on current surgical trends at the hip joint. Fares Haddad will present on what you still can do with a total hip replacement. Elvire Servien represents the well-known French patellofemoral group. Nick van Dijk plans to speak about his current understanding of OD treatment and Floris Lafeber will inform us about functionality, technique and foremost outcome of joint distraction. Only to name a few of internationally well-known physicians that already agreed to contribute.

It will be a fully packed 2-day meeting covering all major topics when OA in the Athlete is regarded. We consider that the audience will be excited by the speaker line-up and topics. Furthermore, it is a good chance to enjoy Zurich during one of the best times of the year. The meeting will be held at the brand new auditorium of the Schulthess Klinik. So you will also have a chance to get insight of one of Europe's leading musculoskeletal centres, which is performing over 10.000 operations per year.

UPCOMING ICRS EDUCATIONAL EVENTS

■ 6th ICRS Surgical Skills Course / Wet Lab Feb 1 – 3, 2018, Mexico City, MX

By Clemente Ibarra & Anell Olivos-Meza



The Department of Orthopedics Sports Medicine and Arthroscopy of the INR has the great pleasure and honour to welcome you to México, for the 6th ICRS Surgical Skills Course in Cartilage Repair, which will take place on February 1st-3rd, 2018 at the Instituto Nacional de Rehabilitación “Luis Guillermo Ibarra Ibarra” in Mexico City.

The Instituto Nacional de Rehabilitación (INR) is a public hospital dedicated to clinical practice, research and teaching. The INR is the only in its gender in Mexico and Latin America with the mission of reduce the incidence of disability and the formation of Specialists Doctors with the multidisciplinary collaboration of Rehabilitation, Sports Medicine, Human Communication, Ophthalmology, Burn Center and Orthopedic Departments. The INR is an innovative Institution with a concept of modernity, human quality and with a culture of dedication and continuing education. Our faculty routinely provi-

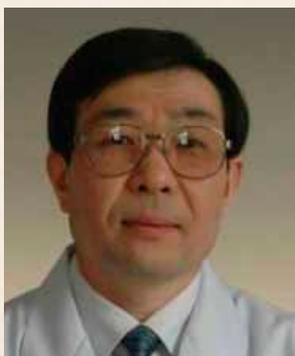
des coverage for the residents to gain experience in the management of difficult cases. For the Arthroscopy Department in collaboration with the Tissue Engineering, Cell Therapy and Regenerative Medicine Unit the cartilage field has been one of the priority lines of research and clinical practice. The INR has a modern facility employing the latest technological and medical advancements on its attractive campus that meets hospitalization, medical consultation area, classrooms, rehabilitation facilities, research laboratories, and auditoriums.

During the 6th ICRS Surgical Skills Course, internationally acknowledged surgeons and experts in the field of cartilage repair will provide you the newest information, tips and tricks of all options in the surgical treatment of cartilage damage and concomitant lesions. The Programme Committee has developed an outstanding academic agenda to include scientific lectures, live demonstrations in the hands of the experts, and hands-on workshops on human specimens.

Mexico City is the economic center of our Country and has a great number of places to visit. Few cities in the world have such as rich and ancient history as Mexico City, a city which metropolitan zone has been the seat of important human settlements for more than two thousand years. This is a culturally diverse city, offering outstanding restaurants, varied entertainment, sporting events, monuments, and museums. There is an easy access to Coyoacan neighbourhood to walking, have a coffee and try the traditional Mexican churros. The Insurgentes Avenue is the longest avenue in Mexico City where you will find prestigious restaurants, shopping centres, Bars and Lounges for nightlife.

■ 14th ICRS World Congress – ICRS 2018 April 9-12 April, 2018– Macao (SAR) China

By Ao Yingfang, Congress Chair 2018 & President of ICRS China Chapter



On behalf of the local organizing committee and the ICRS China Chapter, I have the great pleasure to invite you to the 14th ICRS World Congress to be held in Macau, China from 09-12 April, 2018. With the mission to advance science and education in the field of cartilage repair and regenerative medicine worldwide, the 14th ICRS World Congress will allow everyone to enjoy an exciting and stimulating scientific program featuring innovative leading-edge cartilage research and technology. Held for the first time in Asia, the ICRS 2018 will provide a networking opportunity for the

global cartilage and wider communities, facilitating and expanding interactions among clinicians, researchers, and industry partners from around the world.

China is a country with a long history and diverse culture heritage. There are a lot of wonderful and exciting places and events waiting for you to explore. During the past decades in China, rapid economic and social development is also accompanied with enormous progress in medicine and research. Cartilage repair has been increasingly valued by the scientists and clinicians. Since 2008, we have been collaborating with the ICRS in creating more awareness and established the ICRS China Chapter in 2015 to further promote exchanges and collaborations in cartilage repair research worldwide. The ICRS 2018 will provide the latest updates on cartilage repair, and we look forward to that many will participate and benefit from the programme.

Macao is a city of blended cultures. Ancient Chinese temples sit on streets paved with traditional Portuguese tiles.

UPCOMING ICRS EDUCATIONAL EVENTS

The sound of Cantonese fills the air on streets with Portuguese names. You can eat Chinese congee for breakfast, enjoy a Portuguese lunch of caldo verde soup and bacalhau fritters, and dine on hybrid Macanese fare such as minchi. Macau is also a destination easy to get to, with direct flights from many international cities. The old heart of the city, where historic ruins sit next to arty new boutiques, is small and a walking tour can easily take in the key sites from the iconic Senado Square, the Ruins of St.

Pauls, to the beautiful churches and temples and the old city wall. Further south are the conjoined islands of Taipa, Cotai and Coloane. Taipa has gloriously preserved Macanese architecture, Cotai is home to the new mega casinos and Coloane is lined with pretty beaches.

We are so happy to welcome you all to China and to the delightful city of Macau. We believe you will enjoy the 14th ICRS World Congress and this wonderful place.

INTERVIEW WITH BRIAN COLE Chair of the ICRS Education Committee

Interviewed by Cassandra A. Lee, University of California at Davis, Sacramento



Brian J. Cole is the Associate Chairman and Professor of the Department of Orthopaedic Surgery and section head of the Cartilage Restoration Center at Rush University in Chicago Illinois. He is the team physician for the Chicago Bulls and co-team physician for the White Sox. He

is a man with many hats, and this year, one of those includes being Chairman of the Education Committee for the ICRS. I caught up with Brian to talk about his plans for the educational curriculum for the next year.

CL: As chairman of the education committee, what is your vision of ICRS during the 2018-2019 year?

BC: The committee is totally engaged and we have had several productive meetings. Our focus will be to continue to freshen the agenda by addressing the needs of our basic scientists in addition to clinicians. Regenerative technologies will be emphasized from both the basic science and clinical perspectives.

CL: Can you give us a “sneak peek” into what we may expect in terms of educational events and skills courses?

BC: One of the topics we are working on is looking into the treatment of athletes with articular cartilage issues. This is an important topic and will provide some very interesting curriculum and the ability to delve into various aspects of treating the active individual. If we are talking about athletes, we can look at the in season athlete who we need to get back to playing quickly versus the athlete who has the luxury of a prolonged recovery time. We have a fairly poor understanding of current cartilage treatments in active athletes at this time. I think this topic could really be deeply explored from the scientific and clinical standpoint.

Also, orthobiologics and imaging present interesting topics to cover as newer technologies are being developed and applied. With regards to a surgical skills and lab course, we are interested in covering the hip and osteotomies. Osteotomies certainly were more commonplace not long ago, but it is like a dying art and the newer generation of surgeons do not often perform these procedures.

CL: We as a field of cartilage research and surgery have come a long way, celebrating the 20 year anniversary of the society, where do you predict our clinical and scientific progression to be in the next 20 years?

BC: Over the next 20 years, I hope that we evolve from use of regenerative therapies and orthobiologics to simply modify symptoms to actually modifying the disease processes. We don't really know what leads us down the pathway of degenerative arthropathies versus post-traumatic arthropathies. We need to explore these pathways and then really start thinking about how we can modify disease.

CL: So for example, if we take ACL tears. Some believe the injury itself sets the pathway towards post-traumatic arthritis versus others who believe the 2nd hit occurs with the surgery that ultimately induces further degeneration.

BC: We would need to have a better understanding of how to bridge the gap of pre-programmed degeneration versus post traumatic events and insults that we don't fully understand at this time. And also, how surgical intervention can help or exacerbate this. But we as a society need to keep our eye on the ball, and that is to think about how to modify disease.

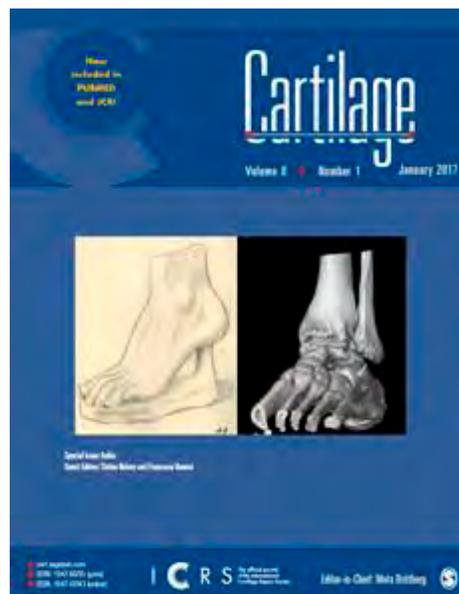
CL: Having been a prior chair of the ICRS 2015 World Congress in Chicago, how do the educational events differ than that of the Congress? What do you see as the role of these education events/skills courses?

BC: The biggest difference is trying to identify specific events that are somewhat focused appealing to those interested in a more narrow curriculum. The education events are specialized topics that will allow us to delve deeper in these specialty topics. We will focus on including both the basic scientists as well as clinicians.

CARTILAGE

Congratulations to
ICRS on its 20th
Anniversary!

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now indexed
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4. **Peculiarities in Ankle Cartilage** by Matthew J. Kraeutler, Tanyaporn Kaenkumchorn, Cecilia Pascual-Garrido, Markus A. Wimmer, Susanna Chubinskaya
5. **Repair Potential of Matrix-Induced Bone Marrow Aspirate Concentrate and Matrix-Induced Autologous Chondrocyte Implantation for Talar Osteochondral Repair: Patterns of Some Catabolic, Inflammatory, and Pain Mediators** by Giovanna Desando, Isabella Bartolotti, Francesca Vannini, Carola Cavallo, Francesco Castagnini, Roberto Buda, Sandro Giannini, Massimiliano Mosca, Erminia Mariani, Brunella Grigolo
6. **Operative Treatment for Osteochondral Lesions of the Talus: Biologics and Scaffold-Based Therapy** by Youichi Yasui, Adi Wollstein, Christopher D. Murawski, John G. Kennedy
7. **Return to Sports After Bone Marrow-Derived Cell Transplantation for Osteochondral Lesions of the Talus** by Francesca Vannini, Marco Cavallo, Laura Ramponi, Francesco Castagnini, Simone Massimi, Sandro Giannini, Roberto Emanuele Buda
8. **New Technology in Imaging Cartilage of the Ankle** by Markus M. Schreiner, Vladimir Mlynarik, Štefan Zbýň, Pavol Szomolanyi, Sebastian Apprich, Reinhard Windhager, Siegfried Trattnig
9. **Immediate Unrestricted Postoperative Weightbearing and Mobilization after Bone Marrow Stimulation of Large Osteochondral Lesions of the Talus** by Gregory A. Lundeen, Linda J. Dunaway
10. **Long-Term Outcomes after Autologous Chondrocyte Implantation: A Systematic Review at Mean Follow-Up of 11.4 Years** by Ayoosh Pareek, James L. Carey, Patrick J. Reardon, Lars Peterson, Michael J. Stuart, Aaron J. Krych



NEWS FROM THE ICRS JOURNAL “CARTILAGE”

By Mats Brittberg, Editor in Chief

What is new on cartilage repair? What are the outcomes of different new cartilage technologies and how to improve our understanding of cartilage repair mechanisms? Such questions could be found answered on in our ICRS journal CARTILAGE.

The journal CARTILAGE has existed since its start in 2009. Today, the journal is listed in both PubMed and in Medline. It has still 4 issues per year with in all 375 pages published in 2016. Because of the increasing number of papers being submitted, a discussion has been about increasing number of issues. It might be something for the future but the publisher Sage has now increased number of pages /issue to 100.

In 2016, the acceptance rate was 58% (45% in 2017) and the speed of the manuscript was 49 days' average time to first decision. The increased number of papers has given us a back-log of papers increasing the time for having the accepted paper in print. It is then good to know that there was in 2016 24 days' average time from transmittal to Production to Online First publication. The total circulation was in 2016 9,012 and CARTILAGE had 14,048 full text downloads through the end of 2016. This is a 19.3% increase over the 11,771 full text downloads through the end of 2015. By increased number of downloads and by appearing on PubMed and Medline, our impact factors may be increased. Our 2015 Impact Factor is 1.127 and our ranking in Orthopaedics is 47/74 journals.

Some suggestions:

I suggest you to sign up for eTOC alerts and journal notifications at <http://journals.sagepub.com/home/cara>

Such alerts will tell you when the latest content have been published in Online First or when a new issue has been released. You should also up-date your faculty page with your recent publications and mentions if you are doing reviews for CARTILAGE with links back to the journal site. By linking your articles published in CARTILAGE on your website or in your CV to the full-text articles in SAGE Journals you will help increase the journal's search engine results and article downloads. Furthermore, when you are traveling to conferences, speaking at lectures, and collaborating with colleagues be on the look-out for opportunities to recommend submissions to CARTILAGE. With your knowledge in cartilage science you are in the best position to recruit papers from interesting posters or presentations at a conference.

Today, we publish both clinical research and basic science papers with a slight overweight for basic science papers. We welcome review papers on different cartilage related areas. The last year we have had some ran-

domized studies published which is also good for the journal. Letters to the editors could be more of where the writer discusses some papers published to have a forum on some areas of interest. This year, the first issue was a special issue on cartilage in the ankle. Future special issues with guest editors will be on cartilage imaging, the spinal disc and on the hip. Suggestions for coming special issues are welcome and you have then to be prepared to be guest-editor/s for such an issue.

Francois Aragon, French scientist once wrote “to get to know, to discover, to publish—this is the destiny of a scientist”. Subsequently we want you to submit your research work for publication and if possible to CARTILAGE with its mixed readers of basic scientists and clinical researchers. Cartilage, being a very complex tissue with poor repair ability, needs to be enlighten from different corners, the basic and the clinical. The paper may be rejected or sent back for several revisions but as the famous author, Michael Crichton says “Books aren't written - they're rewritten. Including your own. It is one of the hardest things to accept, especially after the seventh rewrite hasn't quite done it.” The reviewers are doing a hard work to improve the quality of the submitted manuscripts. In the final end the manuscripts will become much better and the revision process is of importance for the authors for their critical thinking and future writings. The review process is time consuming and we are in constant lack of reviewers with risk of delaying review processes. You are all welcome to announce your interest doing reviewing and what fields of interest that you are focused on. Reviewing is unpaid but it is a nice contribution to the development of our journal CARTILAGE.

We are working on the possibilities to earn CME-credits and similar for reviewing. Your reviewing help is important and remember what once Mark Twain said “be careful about reading health books. You may die of a misprint”

Together, we will make our journal to the “one” in Cartilage science.

Mats Brittberg, Editor-In-Chief

**CARTILAGE is
now indexed
in MEDLINE!**

ICRS CASE REPORT

A complex case of recurrent patella dislocation combined with focal chondral lesion

By Michael Iosifidis

Patellofemoral (PF) dislocations are commonly associated with chondral injury¹. The treatment planning for recurrent dislocation has to think about the cartilage “protection” and cope with patellofemoral joint as “whole issue”. It is presented a case of recurrent patella dislocation combined with focal chondral lesion on the patella surface. The treatment plan had to address not only the instability but also the cartilage procedure taking care to unload the lesion area.

A 23-year old man was referred to outpatient clinic due to patella instability (10 episodes of dislocation during the last 10 years), persistent pain and mechanical symptoms in his right knee during the daily activities after the last episode 2 months ago. On physical examination, the patient had mild effusion, painful limitation of range of motion with crepitus on his right knee joint. The apprehension test was positive for patella instability and the “J” sign was also presented during the active knee flexion-extension. A full package of imaging was performed consisted of x-rays, CT scan and magnetic resonance imaging (MRI) scan². The imaging studies revealed a patella alta, laterally displaced and the MRI a full-thickness patella cartilage focal lesion [Figure 1].



Figure 1a. Preoperative right knee x-rays. 1b. Preoperative MRI image showing a defect in the articular cartilage of the inferomedial surface of the patella. The measurements through the imaging studies recorded Insall-Salvati index:1.6 (normal range 0.8-1.2) and the tibial tubercle-trochlea groove (TT-TG) distance 20mm (normal<16mm).

Following initial evaluation, it is decided one-stage procedure for patella realignment and stability and for the focal cartilage lesion. It was needed for the patella instability to deal with both the dynamic and static stabilizers, thus tibial tubercle osteotomy (“Fulkerson” technique-anteromedialization and distalization) was planned, along with medial patellofemoral ligament (MPFL) reconstruction. For the chondral lesion, it was also planned a matrix-induced autologous adipose-derived mesenchymal stem cells (ADMSCs) transplantation. For the latter, a subcutaneous biopsy of adipose tissue was taken and the MSCs were isolated and grown under standard cell culture conditions (in 30 days). The surgical procedure was performed as following: First, an arthroscopy was done in order to estimate the intra-articular soft tissue, the cartilage condition and the possible presence of any loose body. Secondly, through a

medial parapatellar incision the tunnels preparation in the patella for the MPFL graft was performed, and through an extra incision over the medial epicondyle the tunnel for the femoral insertion of the MPFL was also done [Figure 2].

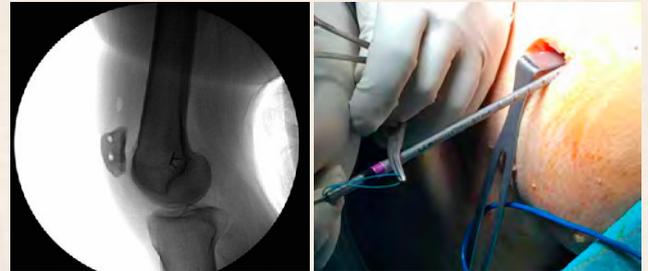


Figure 2a. Two tunnels were made in the proximal half of the medial patella edge (x-ray intraoperatively). 2b. Over the medial epicondyle the tunnel for the femoral insertion of the MPFL was also opened.

After that, through the medial parapatellar incision a small arthrotomy was added to semi-invert the patella and the matrix-induced MSCs transplantation was done following the usual procedure (cartilage lesion preparation, contouring, scaffold preparation, injection of the cells, and covering the lesion with the trim-to fit scaffold with the cells) using an esterified benzolic polymer of hyaluronic acid scaffold (HyalofastTM-Hyaff[®]/ Anika Therapeutics, Inc., Bedford, MA) [Figure 3].

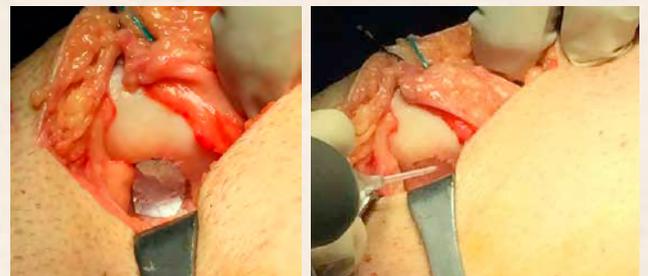


Figure 3. The cartilage lesion site was prepared (a) and a trim-to fit scaffold with the cells was put on it (b).

Then, through a medial -next to tibial tubercle- incision, the gracilis tendon was taken for the MPFL reconstruction and a tibial tubercle oblique (from medial to lateral) osteotomy was done. In the distal edge the osteotomy was completed and a 1 cm piece of the tibial crest was also removed distally to the osteotomized tubercle. After that, the tibial tubercle was sliding medially-anteriorly (due the obliquity of the osteotomy) and distally (in the place that the removed piece of the crest made, for correcting patella height). The tibial tubercle was fixed in the new position through 2 cortical screws with washer [Figure 4].

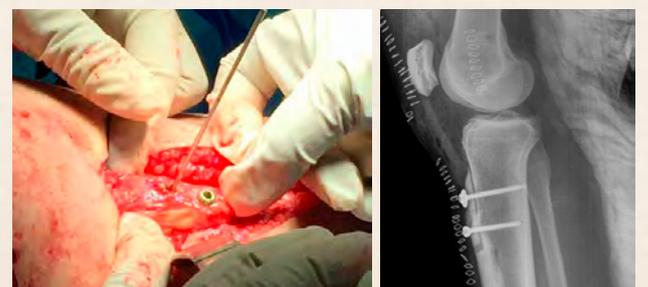


Figure 4. The tibial tubercle was osteotomized obliquely and fixed in the new position through 2 cortical screws (a) (b. post-operative x-ray).

(Continued on page 25)

EVENT CALENDAR

2017

27–30.04.2017

OARSI 2017 World Congress
Caesars Palace, Las Vegas, USA
<https://www.oarsi.org/>

03–05.05.2017

WCMISSST PARIS 2017
Intermediate Meeting on Minimally Invasive
Spine Surgery & Techniques
www.spineparis2017.com

06.05.2017

**8th Annual Articular Cartilage Repair Course
The Hospital for Joint Diseases**
New York, United States of America
med.nyu.edu/cme/articular

13–15.05.2017

The Future of Football Medicine
Camp Nou Stadium, Barcelona, Spain
www.footballmedicinestrategies.com

31.05–02.06.2017

18th EFORT Congress 2017
Messe Reed, Vienna,
www.efort.org/vienna2017

04–08.06.2017

11th Biennial ISAKOS Congress
Shanghai, China
www.isakos.com/2017Congress

29.06–01.07.2017

ICRS Heritage Summit 2017
Gothia Towers, Gothenburg, Sweden
www.cartilage.org

31.08–03.09.2017

**5th World Congress on Controversies, Debates
&
Consensus in Bone, Muscle & Joint Diseases
(BMJD)**
Marriott Hotel, Gold Coast,
bmjd-congress.org/

07–09.09.2017

AGA-Congress 2017
München, Germany
www.aga-kongress.info

28–29.09.2017

**ICRS Focus Meeting – Osteoarthritis in the
Athletes**
Schulthess Clinic, Zurich, Switzerland
<http://cartilage.org/icrs-focus-meeting-osteoarthritis-in-athletes/>

09–11.11.2017

WATCH & TRY
Ospedale Universitario Gemelli, Rome,
www.sigascot.com

2018

01–03.02.2018

6th ICRS Surgical Skills Course – Mexico City
Instituto Nacional de Rehabilitación
Mexico City, Mexico
www.cartilage.org

06–10.03.2018

AAOS 2018 Annual Meeting
New Orleans, United States of America
<https://www.aaos-igd.com/Home.aspx>

09–12.04.2018

ICRS 2018 – 14th World Congress
Sheraton Grand Macao Hotel
Cotai Central, Macao, China
www.cartilage.org

19–22.04.2018

WCO-IOF-ESCEO Krakow 2018
World Congress On Osteoporosis, Osteoarthritis
& Musculoskeletal Diseases
ICE Krakow Congress Center, Krakow, Poland
www.wco-iof-esceo.org

07–09.02.2019

3rd ICRS World Series São Paulo
Sao Paulo, Brazil
www.cartilage.org

23–25.05.2017

16th Annual Short Course
“Cell-Based Therapy and Tissue Engineering”
Case Western Reserve University
Cleveland, Ohio, United States of America
artsci.case.edu/skeletal/

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CARTILAGE REGENERATION

Chondro-Gide® is not available in all markets. Availability is subject to the regulatory or medical practices that govern individual markets.

ICRS CASE REPORT

(Continued from page 23)

Finally, the MPFL graft inserted and fixed in the patella and femoral tunnels using interference bioabsorbable screws. The postoperative rehabilitation programme included the use of functional brace and a gradual increase of range of motion and weight bearing for 3 months. The patient has had an uneventful postoperative course without any complications and made a complete recovery, resuming his every-day activities in full after 1 year.

In case of PF instability, it is important to evaluate not only the mechanism of the patella dislocation, but also to define the extent of any chondral or osteochondral injury. The treatment of focal chondral and osteochondral lesions varies extensively depending on defect size, damage to the osteochondral fragment, and acuity of the injury. It is also important to analyse each parameter of the known risk factors for PF stability: patella alta, excessive lateral position of the tibial tuberosity (TT-TG),

trochlear anatomy (dysplasia), and femoral/tibial axial rotation. Chronic cartilage lesions need to be addressed from a more restorative point of view³. It is needed to plan the procedure in order to restore the patellofemoral joint function, as it is of paramount importance to gain a normal loading in order to protect the repair of cartilage⁴. Thus, in this case the patella stability was corrected in parallel with the chondral lesion taking care.

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NEWS FROM THE INDUSTRY - ADVERTORIAL

Randomized Controlled Study comparing Microfracture versus AMIC® with Chondro-Gide® in the Knee

Microfracture (MFX) is still considered the standard therapy for cartilage defects up to a size of 2.5 cm² while larger lesions do not benefit from this treatment approach in the same way. In the knee, the MFX has therefore been combined with a collagen membrane. The resulting AMIC® technique represents an enhancement of the MFX and successfully extends the indication to larger defect sizes.

A study published in April in International Orthopaedics (SICOT)¹ reports the results of a randomized controlled study comparing MFX to AMIC® with Chondro-Gide® (Geistlich Pharma AG, Switzerland) in the treatment of isolated Grade III or IV cartilage defects of the knee.

The three-arm trial enrolled 47 patients (27 at Sportklinik Ravensburg and 20 at University Regensburg), and examined the use of MFX or AMIC® (sutured or glued). Results at the 1-year and 2-year follow-ups were published in 2013, and this study presents new 5-year results, evaluated by using clinical scores and MRI imaging. In a pattern similar to other studies, all treatment groups showed significant improvement in the first year, followed by stabilization at 2 years. However, the 5-year follow-up data showed stable or continuing improvements in both the modified Cincinnati and modified ICRS pain score for patients in the two AMIC® arms, but a significant decrease in the modified Cincinnati score and an increase in pain at 5 years for the MFX only treatment group. Interestingly, the glued AMIC® group showed a clinically meaningful albeit not significant trend towards continuing improvement from 2-5 years on both clinical scores. Additionally, the Modified ICRS functional status scores at 5-year follow-up showed a far higher proportion of patients in the "Normal" and "Nearly Normal" categories for

both AMIC® study arms, compared with the MFX group that shows some patients as "Normal" but a majority of "Abnormal" scores. The MRI scores at 5 years, however, failed to show a strong correlation with the clinical scores at any time point; yet, they did show defect filling of 65% and 50% for AMIC® glued and AMIC® sutured, respectively, compared with only 40% for the MFX group. The MRI results do show, however, that bone marrow edema is resolved at 5-years and that repair tissue appears to be very stable. Overall, the results of Volz et al. correlate well with other published studies that show generally average mid-to long term results for MFX alone^{2,3} compared with excellent clinical results for AMIC®⁴.

"Our study shows that the outcome is predictable even for midterm follow-up. We could show that the outcome is good and very good, but the size of the defect shouldn't be too large, we should concentrate on midsize defects – 2-8 cm² should be the size, then we will have good results, I think for the long term follow-up." - Dr. Martin Volz

(Dr. Martin Volz, has performed over 15,000 shoulder and knee procedures and is currently advisor to the FV Ravensburg football team, practices at the Sportklinik Ravensburg.)

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EDITORIAL

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The ICRS Newsletter is published bi-annually. In case of enquires, comments or if you would like to send us your contribution or adverts, please contact office@cartilage.org

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