The WSRM Newsletter
Autumn - Winter 2009
Volume 1, Issue 1

World Society for Reconstructive Microsurgery

The purpose of the Society shall be to stimulate and advance knowledge of the science and art of Microsurgery and thereby improve and elevate the standards of practice in this field of surgical endeavor. The Society shall be the highest medium of recognition in the field of Microsurgery as evident by superior attainment and by contribution to its advancement. It shall provide an international forum for the exchange of ideas and the dissemination of innovative techniques.

Message from the Editor

One of the prime objectives of WSRM is "to stimulate and advance knowledge of the science and art of Microsurgery." Our excellent record of congresses has allowed us to achieve this goal, thus far. In addition, we aim to "provide an international forum for the exchange of ideas." With the latter in mind, a concerted effort has been made to produce our *WSRM Newsletter*. We are very proud to present to you this inaugural Autumn/Winter 2009 issue.

There are two objectives for this publication. First, our goal is to provide our members with comprehensive and competent information, especially regarding internal WSRM news, which cannot be found in any other publication. Second, we want to encourage creative dialogue within our microsurgical community. Therefore, we will report on congresses, symposia and workshops, keeping an eye on every platform where microsurgeons can share their experiences and opinions around the world. In the *WSRM Newsletter*, we won't shy away from controversial opinions and discussions that are emerging in cutting edge areas of research and practice. Initially, the *WSRM Newsletter* is planned to be a bi-annual publication. In the future, we hope that we will be able to provide quarterly issues. As with our Scientific Congresses, we want to achieve the highest standard. Overall, this publication should be useful for each member of WSRM, and in fact for every microsurgeon worldwide. Our ultimate goal is to tighten the bonds between our members and between the societies of reconstructive microsurgery around the world.

PN Soucacos, MD, FACS
Professor of Orthopaedics
President, WSRM

In this edition

What's New in Microsurgery 2
News from the Executive Council 4
Meeting Preview 5
Journal of Reconstructive Microsurgery 7
Interesting Cases 7
Mini Review 10
Society Portrait 12
Historical Notes 14
Message from the Past President 20

What's New in Microsurgery?

A newsletter for our society is a great idea and I thank our President Dr. Soucacos for the invitation to contribute on this topic.

The meaning of the word '**New**' is relative and could mean different things to different people. For example at the recently concluded WSRM meeting in Okinawa we saw a demonstration of microscopes, instruments and sutures for supra microsurgery, facilitating anastomosis of vessels of 0.5 mm and lesser. That would be the '**New thing**' for an established microsurgical centre, while a standard free latissimus dorsi flap to cover an open fracture of tibia could be a sensation in a peripheral clinic in a developing country. My guess is that 60% of the world is 'microsurgery dark'. In such places **reconstructive microsurgery itself will be new**. It is a fact that we have to face and a figure that we have to change. As a surgeon practicing microsurgery extensively in a developing country, I perhaps have the opportunity to look at and experience both situations.

What is new in Microsurgery? There are two aspects to consider: advances in microsurgical techniques per se and the influence of progress in other fields related to microsurgical practice. With respect to the former, supra microsurgery is certainly pushing the boundaries though it remains to be seen if it will become an advance which will be practiced through out the world. It will depend, not on the ease of mastering the technique of suturing such small vessels, but in finding clinical applications where that skill is mandatory. Significant differences must be seen in outcome, with a great reduction in donor site morbidity and only then will surgeons be willing to establish the required infrastructure in their practices and undertake the training to master the necessary skills. We will see in the next few years whether supra microsurgery makes the jump from trend to established advance.

The second technical issue is that in future there will be more widespread use of mechanical devices like couplers for anastomosis of vessels. Couplers are faster and the patency rates are comparable and even better than suturing. Robots for microsurgical work is also a feasibility. Will these reduce the impetus to master the hand suturing techniques? I think the answer is 'no'. If the mechanical devices fail, then one has to resort to regular suturing of the vessels. In such demanding situations even higher skill levels are needed. Hence I think that what ever advances may occur, still it is mandatory to develop the dexterity of suturing the vessels.

That raises the next issue of how do our younger trainees get the hand skills in microsurgery. Decades ago Harry Buncke said, 'The age of the self taught microsurgeon is over'. Buncke and Acland laid great emphasis on mastering the basic suturing skills in the lab before embarking on clinical cases. Now the number of places offering lab training is getting limited, because of the tough animal licensing procedures and cost of maintaining a good lab. Fortunately with travel becoming easier, trainees do not hesitate to travel to good training centers. WSRM can institute fellowships for trainees from areas where microsurgery is not established.

The second issue is that newer developments in allied fields will influence the way we practice microsurgery. I can think of two examples. One is allotransplantation. That certainly is a promising application for microsurgery. Technically many centers are capable of doing the surgical part, but as of now will be incapable of taking care of the immunosupression part and rehabilitation. If further research makes them simpler and very affordable then this '**new thing**', will become very popular and will open up tremendous possibilities. Even a common man in a developing country is well aware of allotransplantion thanks to the media, and hence popularizing it will not be a problem.

Second example to discuss is the introduction of Vacuum Assisted Closure (VAC) in wound management. VAC is certainly useful and can produce dramatic results in selected cases. There are papers recommending VAC, authored by surgeons who were proponents of microsurgical flaps in the last decade. It is interesting to read both papers together. Such papers trigger great enthusiasm about VAC. VAC concept perhaps is in the 'overuse' stage at the moment and gradually it will stabilize to its true potential. In our experience if we have felt that if an acute wound at the end of debridement would benefit from a microsurgical flap certainly in most instances that gut feeling always proves to be true and economical in the end.

Now we come to the way we practice microsurgery. Indications are expanded or curtailed not on the basis whether microsurgery option is the best in the particular clinical situation. Infrastructure, reimbursement levels and many such issues determine if microsurgical option is chosen. Two things can help towards popularizing microsurgery. One is the development of high skill levels. Then one is more confident in taking up the cases, surgical time is lesser and success rate is higher. This scenario increases the chances of microsurgery being chosen as the treatment option. It is good to develop that positive cycle. Occasional microsurgery reduces skill levels, takes more time to do

continued from pg 2

the procedure and success becomes uncertain. When one gets into the negative cycle, the frequency of microsurgical procedures dramatically drops down.

Classic example will be the incidence of replantation throughout the world. Increased safety precautions in the work place and home no doubt has reduced the need of replantation. Still the small numbers done through out the world does not reflect the true need of replantation in any country. Self doubts about the skill levels and success, lowered reimbursement for the efforts, untimely working hours combine to make the surgeon choose the easier option of not replanting the amputated parts. Studies can also be quoted to justify the action. If replantation and microsurgery is to develop the next generation has to be well trained. If the surgeon is confident of a good outcome then he will be able to convince the patient to undergo the procedure. In no other field is the surgeon's decision more important than in the decision to replant or not. The patient usually does not know what he is in for and hence the surgeon guides the patient towards what he thinks is the best for the patient. What would be replanted in one centre will not be replanted in another centre. The difference would be the skills and the attitude of the surgical team.

Cost of care is an important issue in all economies and countries. The best way to reduce the cost of care is to get things right the first time. In microsurgery the most important factor is the skill levels of the operating surgeon. It can greatly compensate the other inadequacies and ensure success. The low reimbursement rates for microsurgery (effort – reward ratio) is universal and is partly due to the public including the members of the medical profession not being aware of the complexities of the procedure. Microsurgeons themselves must own up the blame for this state of affairs. Every microsurgeon must devote some of his practice time to help spread the specialty in the society he lives and practices. Attending and presenting our work in the meetings of sister specialties is an important avenue. In addition to publications in peer reviewed journals and participation in annual conferences we must increase the awareness of possibilities of microsurgery among the masses. This we found to be one of the most effective ways of patients accepting the microsurgical option.

The type of microsurgical practice one will do will also change with time. Usually all units start with serving acute trauma, followed by elective trauma related reconstructions. This will be followed by post cancer ablation reconstructions and management of congenital anomalies. If the microsurgical units do not provide their patients the options as they need, or shift their skill levels or the nature of practice the units will die out.

If we really sit down and think there is little new in reconstructive microsurgery. Most of it would be refinements of what was practiced earlier.

The challenge for WSRM is to extend the reach of microsurgery to places where it is not practiced and where it will serve even greater purpose. Certainly it will be '**NEW**' in such places. It requires a change in attitude as to how microsurgery is looked at. We need to change the perception that it is time consuming, difficult, requires great infra structure, expensive and has unpredictable results. Microsurgery is so much needed, so essential, so rewarding and economically viable. What is needed is high skill levels and we need to concentrate on training people. Paucity in material resources can be overcome. It is easier to get in equipments and supplies. Challenge is human resources. It is ironical that at the same time there is an industry driven great push towards non microsurgical options like very expensive wound care products. Their value has to be placed in the right perspective. In this situation there is an opportunity for centers and models in developing countries to take the lead.

Dr S Raja Sabapathy MS, M Ch, DNB, FRCS Ed, MAMS
Head, Department of Plastic Surgery, Hand and Microsurgery and Burns
Ganga Hospital
Coimbatore, INDIA – 641 043

rajahand@vsnl.com; srs@gangahospital.com
www.gangahospital.com

Volume 1 World Society for Reconstructive Microsurgery **Winter 2009**

Purpose
The object of the Society shall be to stimulate and advance knowledge of the science and art of Microsurgery and thereby improve and elevate the standards of practice in this field of surgical endeavor. The Society shall be the highest medium of recognition in the field of Microsurgery as evident by superior attainment and by contribution to its advancement. It shall provide an international forum for the exchange of ideas and the dissemination of innovative techniques.

Panayotis N. Soucacos, MD, FACS
President

Krista A. Greco
Executive Director

Panayotis N. Soucacos, MD, FACS
Editor

Catherine Vlastou, MD
Managing Editor

The WSRM Newsletter is published two times yearly for members of WSRM, a non-profit organization. Subscriptions are included in the annual membership dues. All correspondence, address changes, and newsfor upcoming events should be addressed to:

WSRM Central Office
20 North Michigan Avenue
Suite 700
Chicago, Illinois 60602
USA

News from the Executive Council

The Executive Council of World Society of Reconstructive Microsurgery has been active over the last few months, ever since the 5th Congress in Okinawa, Japan with various issues. Listed below is an update on a few of the items.

Country Liaisons to WSRM

At the last meeting of the WSRM in Okinawa, Japan the Executive Council felt that one of our efforts should be focused on strengthening our communication with members and new microsurgeons from countries around the world. As a world society, it is difficult for us to maintain a handle on news, issues, problems, events etc in the various countries around the world who have active members in our society. More importantly, we have little access to mechanisms that will help us encourage new members and a more active participation in our society. It has become apparent, that this would be best achieved if a prominent microsurgeon from that country acted as a liaison to WSRM.

As such, the idea of having a liaison from each country to act as a bridge between microsurgeons from the region and WSRM is now becoming a reality. Prominent microsurgeons from various countries who have members in WSRM have been asked to act as liaisons to WSRM. Their role is to present the current challenges, special issues faced in their region of practice, and to pass on the news, efforts and achievements of WSRM to their colleagues.

I believe that this effort will significantly tighten our ties and increase our membership in the future. We are proud to list microsurgeons who have accepted to act as a liaison to WSRM.

PN Soucacos, MD, FACS
Professor of Orthopaedics
President, WSRM

WSRM Country Liaisons

Australia
Wayne Morrison

Austria
Manfred Frey

Belgium
Phillip Blondeel

Canada
Ronald Zuker

China
Xiao-Song Gu

Cyprus
Alkiviades Alkiviadous

Denmark
Christen Krag

Egypt
Tarek El-Gammal

England
Simon Frostick

Finland
Simmo Vilkki

France
Michel Merle

Germany
Gunter Germann

Greece
Catherine Vlastou

India
Raja Sabapathy

Israel
Yaffe Batia

Italy
Marco Lanzetta

Japan
Isao Koshima

Korea
Duke Whan Chung

Lebanon
Bishira Atiyeh

Malaysia
A. Sukaris Halim

Netherlands
Ed Hartman

Poland
Lesziek Romanowski

Taiwan
David Chuang

Romania
Alexandru Georgescu

Russia
Kirill Pshenisnov

Sweden
Hans Mark

Switzerland
Audrej Banic

USA
Robert Walton

Journal of Reconstructive Microsurgery

Due to the efforts of our past-President Berish Strauch, the Journal of Reconstructive Microsurgery has agreed to provide a one-year subscription to each WSRM dues paying member. This subscription is included in the membership dues, and we all believe is an attractive feature for old and new members alike.

Applications for Hosting Future WSRM Meetings

Several societies have indicated an interest in applying for sponsorship of a future WSRM meeting. The Executive will finalize the process for submitting applications to host WSRM Meetings this winter in Florida. The goal will be to print a booklet that specifies all criteria, which would be available for any interested parties. This will include specifics regarding financial burden and support. The “WSRM Congress - Host Criteria” will soon be available for those who express interest to host a meeting. (A preliminary version of the publication is available in this newsletter.)

WSRM Endorsement Microsurgery Seminars, Meetings & Workshops Worldwide

WSRM is making an effort to show its support of the various microsurgery activities and meetings that take place around the world. "WSRM Education Committee" is currently comprised by Catherine Vlastou, Wayne Morrison, Fausto Viterbo, Fu Chan Wei and Robert Walton.

Meeting Preview

Invitation to WSRM 2011

It is my great pleasure to invite you to the 6th Congress of the World Society for Reconstructive Micro-surgery (WSRM 2011), which will be held in Helsinki, Finland from June 29 to July 02 in 2011.

The organising committee has planned a most stimulating scientific programme to cover new aspects of microsurgery including the latest developments in research. The featured topics will be; recon-struction of the breast, head and neck, hand, thumb, grip function, facial paralysis, brachial plexus, and peripheral nerve, lower limb, urogenital area and replantation. Special emphasis will be focused on multidisciplinary approach in microsurgery and training of microsurgery.

New combined techniques will be covered; such as combining microsurgery with advanced biotechnology e.g. prefabricating with stem cells and growth factors. Stimulating cross-fire debates will be arranged on up-to-date topics. All suggestions from WSRM members on interesting extra subjects are always welcomed.

The timing of the congress coincides with the beginning of the beautiful Finnish summer; at this time the weather is usually very pleasant with long white summer nights. The midnight sun, fresh green colours of our nature and blue waterways are all unforgettable experiences. The venue will be the Marine Centre which is ideally located at the seaside near the historical city centre of Helsinki. Close by is the city downtown, harbour and market square. In addition, we have planned social events for the eve-nings which will give you a taste of Finnish cuisine and the opportunity to enjoy the attractions of Hel-sinki and the rest of Finland.

Professor Panayotis Soucacos and Erkki Tukiainen find themselves behind bars while planning the upcoming World Congress in Helsinki, Finland.

Please mark the congress dates in your calendar for 2011 to share the latest developments in micro-surgery and related scientific research as well as to meet friends and colleagues. We look forward to seeing you in Helsinki under the midnight sun.

Erkki Tukiainen, Professor
Congress Chairman

Invitation to FESSH 2010

It is a great pleasure and honour to announce to all the colleagues interested in hand surgery that the XVth Congress of the European Federation of Societies for Surgery of the Hand (FESSH) will be held between June 23rd and June 26th, 2010, in Bucharest, Romania.

Romania is situated in the south-eastern part of Central Europe and shares borders with Hungary to the northwest, Serbia to the southwest, Bulgaria to the south, the Black Sea and Ukraine to the southeast and to the north and the Republic of Moldavia to the east.

Bucharest, the capital city, was surnamed "Little Paris" at the beginning of the 20th Century, because of its rich architecture and cultural life. Bucharest proved to be one of the most important centres in south-eastern Europe, enlightened and forward thinking, where the glorious past blends harmoniously with modern present and attractive future.

The Congress venue will be Rin Grand Hotel Conference Center, a new complex with more than 1400 chambers, 36 rooms Conference Center, modern spa, fitness and swimming pool facilities, which can respond to the most exigent demands of the participants and accompanying persons. The majority of participants will be hosted in the Rin Hotel, but there will be also other accommodation possibilities.

For hotel booking the participants can contact accommodation@fessh2010.com or info@fessh2010.com.

Meeting preview - *continued from pg 5*

The organizers hope that the Congress will join Europe's most renowned hand, orthopedic and plastic surgeons, as well as hand therapists, and also other very important international personalities. It is also a good opportunity to bring together experts, opinion leaders, decision makers and young professionals in the field of hand surgery and in related specialties.

The Organizing Committee is chaired by Alexandru Georgescu and the Scientific Committee is composed of prominent international personalities: Steven Hovius (Holland), as Chairman, Tim Davis (UK), Max Haerle (Germany), Caroline Leclercq (France), Panayiotis Soucacos (Greece), Theodor Stamate (Romania).

As we are already accustomed, before the Congress, on June 21-22, 2010, the Council of FESSH will hold its 14th Diploma Examination, for which can apply any surgeon whose National Hand Surgery Society is member of the FESSH or IFSSH. Also, before the congress, the organizers will try to present a Perforator flaps course.
During the congress will be organized an Instructional Course with the title "Primary care of complex injuries in hand & wrist", chaired by Thierry Dubert (France).

The FESSH scientific sessions will contain two main topics with invited speakers and free papers: "Bone defects reconstruction in upper limb" and "Perforator flaps in upper limb". Also, there will be other lectures included in sessions about nerves, compression syndromes, brachial plexus, cerebral palsy / tetraplegia, congenital malformations, radius pathology, ulna + DRUJ pathology, wrist pathology, scaphoid / lunate pathology, Dupuytren disease and tumors, rheumatoid / systemic diseases, tendons, tissue transfers and microsurgery, hand and elbow injuries.

The scientific program will include also e-posters, free communications sessions, panels and lectures with invited speakers, a EWAS symposium, different workshops and a joint session with the hand therapists.

Abstracts will be submitted exclusively on the website: www.fessh2010.com. The abstracts will be published in the Journal of Hand Surgery (European volume). All abstracts and communications are to be presented in English.

Today, more then ever, Romania is eager to reveal its beautiful landscape, monuments, culture and traditions. The organizers will make sure that the participants enjoy a part of the Romanian ancient customs and cuisine, but also taste the modern European traditions, in Romanian style.

For this reason, the organizers prepared a lot of interesting sightseeing tours, some in Bucharest (presenting the most important museums and architectural sites), and some to emblematic renown locations in Romania (Bran Dracula's Castle, Brasov medieval town, the UNESCO protected monasteries in Bucovina and the Danube Delta).
FESSH Congress is traditionally accompanied by a commercial exhibition where equipments, pharmaceuticals and publications are presented and demonstrated to professional visitors.

For more information please access the congress site: www.fessh2010.com.

We are looking forward to see you in Bucharest, to share this wonderful scientific and social event!

Alexandru Georgescu, MD
Chairman, FESSH Organizing Committe

Invitation to the European Federation of Societies for Microsurgery (EFSM 2010)

The 10th Congress of the European Federation of Societies for Microsurgery (E.F.S.M.)will be held in Italy in the beautiful city of Genoa, from May 20th to 22nd 2010 (www.efsm.eu). The Presidents of the Meeting will be Bruno Battiston and Corradino Campisi. Of course the hosting society will be the Italian Society for Microsurgery (SIM) and its President Giorgio DeSantis.
We are planning for this exciting opportunity to bring together European Surgeons interested in Microsurgery, extending the invitation to Extra-European Experts in this field. Then, this event will become a real International Meeting of Microsurgical Societies.
The Scientific Committee is preparing an intensive and stimulating program, including session of: Keynote Lectures, Round Tables, Technical Symposia, "Face to Face" Debates, Short Reports of fellowships or experiences of young surgeons, Interactive Sessions, Free Papers, Posters and Instructional Courses.

Special emphasis will be given to Emergency Microsurgical Reconstructions, New Technologies helping or substituting Microsurgery, and to other main topics: Replantations, Free Flaps, Peripheral Nerve Repair, Functional Transplantations, Microsurgery in General Surgery, Lymphatic Surgery, Experimental Microsurgery, Research and Education.
Round Tables and Symposia will be organized for specific and important subjects, such as: tactic and possibilities of microsurgical reconstruction in oncologic surgery, tissue engineering, and contribution of Basic Research to Surgery.

Microsurgical Companionships and other affiliated Sponsors will show the most advanced technologies, instruments and devices supporting Modern Microsurgery.
All the participants will be entertained by a pleasant and wide variety of social events, from the historical and monumental background of the City to the beautiful sightseeing of the "Riviera Ligure".

All participants will enjoy to warmth and hospitality of Genoa, especially thanks to the nice weather usually delighting the end of May.

Bruno Battiston
President, EFSM

Journal of Reconstructive Microsurgery

As Editor-in Chief of the Journal of Reconstructive Microsurgery, the official Journal of WSRM, I am particularly pleased to contribute to this inaugural WSRM Newsletter. We are a small community and communication among is vital. This Newsletter is a wonderful innovation in helping us to stay in touch. A Newsletter is just that… a means of spreading news; news about meetings, news about new innovations, and news about colleagues who have accomplished significant achievements, news of both happy and sad events that are of interest to us all.

A Journal serves a different purpose. It is also a means of spreading news…news about new innovations, new research, and new techniques. The difference lies in the level of reporting. A Newsletter is simply a report… a news item. A Journal, on the other hand, accepts submissions about scientific discovery. These submissions are then reviewed by an expert panel of peers who question, critique and seek clarification on issues before the right of publication is granted. Of course, our official means of communication is through written scientific manuscripts as well as presentations at our meetings. The Journal is particularly keen to bring together our small scientific community but, more importantly, to expand it and thereby to expand our own horizons.
The Journal is also the official organ of the American Society for Reconstructive Microsurgery. That society has, over the mast number of years, embraced the broader concept of complex reconstruction and concentrated less on the stipulation that microsurgery is a necessary component of complex reconstruction and more on the idea that all complex reconstructions, whether they involve micro or not, are of interest to the membership. I would venture to suggest that the same is true of the WSRM membership.

At the Journal we are committed to bringing you the best of what is out there in terms of clinical and basic research on issues related to complex reconstruction and microsurgery. We welcome submissions on all topics. We try to include a mix of papers in each issue, including some review articles, some original research, some original clinical ideas. We receive many case reports. We are committed to publishing the best of these under the category of “Personal Communication” or, “Letter to the Editor”. However we are somewhat limited in terms of the case reports we can accept. Despite this, we are committed to bringing you the latest and best of what our subspecialty has to offer.

I invite you to submit your work to the Journal. We offer on-line submission and a much abbreviated time between acceptance and publication since all of our accepted articles are published on-line before the print version appears. These on-line publications appear on a search as “e-pub ahead of print” so your publication is cited as soon as it appears on line. This allows us to batch each print version with articles that fit together without penalizing the authors by making them wait for print publication. I look forward to receiving many more of your articles for consideration by the Journal and I congratulate WSRM on this inaugural Newsletter.

Peter C. Neligan, MD,
Editor-In-Chief, JRM

Interesting Cases

L. Scott Levin, M.D.
University of Pennsylvania Health System
Dept of Orthopaedic Surgery
3400 Spruce Street/2 Silverstein
Philadelphia, PA 19104-4283
scott.levin@uphs.upenn.edu

A five-year-old child was playing in the backyard of his home and was accidentally run over by his father while his father was riding a riding lawnmower. Both feet were trapped underneath the lawnmower, resulting in a left 3-B tibial shaft fracture and ipsilateral foot trauma. The right foot was severely mutilated with multiple tarsal and metatarsal fractures and open injuries. Consideration was given to bilateral below knee amputations. In this particular case, heroic efforts should be made to maintain this child as a bipedal ambulator. Fortunately in both feet the posterior tibial nerve was spared, and plantar sensibility was still present. Given this fact and the age of the child, attempts were made to perform limb salvage. An external fixator was used to stabilize the left tibia with debridement and fillet flap closure of the left forefoot injury. Because of significant bony loss in the forefoot, no attempt was made to do free tissue transfer on the left side, but a proximal transmetatarsal amputation was created to create a plantigrade foot for weight bearing. On the right side the wound was debrided and then within 48 hours a free anterolateral thigh flap was done to resurface the entire foot. This flap was successful and ultimately provided adequate coverage, so that the child could be placed in shoes. There was one debulking procedure that is standard for free tissue transfer for the foot and ankle to optimize contour to allow shoeing. A video can be seen of this child running in normal shoes without orthotics. (Double click on link).

Interesting Cases - *continued from pg 5*

The principles of lawnmower care in children is that these are iatrogenic and preventable injuries. The slogan don't ride, don't hide, stay inside should be the mantra of all families with small children, and particularly the children should be isolated from lawnmowers and remain inside. In addition to extremity injuries in children that have had amputations or even killed by lawnmowers (both riding and push mowers). Projectile missals have been known to blind children and cause intercranial injury.

In 2006 the American Society of Reconstructive Microsurgery in conjunction with the Pediatric Orthopaedic Association mounted a national campaign to bring public awareness to this horrible injury that is of course preventable in 100% of cases.

Lawnmower-associated trauma remains a substantial source of extremity injury in the pediatric and adolescent patient populations, producing complex wounds that require a combined orthpaedic and plastic surgical approach. We reviewed our experience with 16 patients, 2 to 17 years of age (mean age, 6.2 years), who were admitted to Duke University Medical Center for lower extremity lawnmower trauma between January 1988 and December 1999. The average hospitalization time was 13.5 days, and an average of 2.9 surgical procedures per patient were performed. Early debridement and bony fixation were carried out in all patients; 8 patients sustained traumatic amputation, Fifteen of 20 nonamputation fractures involved the foot and were managed with either closed reduction or K-wire fixation. Three of five long-bone fractures underwent external fixation. Wound closure was achieved with direct closure of skin grafting in the majority of patients. However, five microsurgical free flap transfers were required forextensive defect reconstruction of the foot (N = 4) and knee (N = 1). Adequate immediate debridement, fracture reduction, and early primary or if necessary secondary wound coverage including microsurgical free tissue to prevent further damage and long-term disability in these type of devastating injuries is recommended.

Reference: Erdmann D, Lee B, Roberts CD, Craig D, Levin LS. Management of lawnmower injuries to the lower extremity in children and adolescents. Ann Plast Surg 2000;45: 595-600.

Catherine Vlastou, M.D.
13, October 28th Street
15237 FILOTHEI
GREECE
cv2945@otenet.gr

A 75 year old gentleman, a World War II pilot -and hero - presented because of a growing ulcerated lesion on his (L) forearm. He had sustained severe burns of both upper extremities during the war and he had significant soft tissue defects and contractures of the forearms with peripheral lymph□edema of the hands. He had managed over the years, however, to use his hands satisfactorily.

He frequently had wound break down, particularly on his left forearm, because of unstable scars. Two years prior to his visit, almost 55 years following his injury, he developed on his left forearm a fungating ulcer, which was gradually growing. A clinical diagnosis of Marjolin's ulcer was made and it was confirmed by biopsy that showed invasive squamous cell carcinoma. Metastatic survey was negative.

The patient underwent circumferential excision of the contracted scar on both forearms and wide excision of the ulcerated area of the (L) forearm. Reconstruction of each forearm was achieved with microsurgical transfer of the latissimus dorsi muscle flap, covered with skin grafts. Post-operatively he healed well and had stable coverage of both forearms. He demonstrated significant decrease of the lymphoedema and marked functional improvement of his hands.

Discussion

Marjolin's ulcer is defined as a rare but well documented and often aggressive epidermoid cutaneous neoplasm, arising in previously traumatized, chronically irritated or scared skin.

The Roman physician Aurelius Colsus first described an abnormal tissue growth in burn scars in the 1rst century AD. In more recent years the French surgeon Jean Nicolas Marjolin is credited with the first description of the phenomenon of ulceration in burn scars, in 1828, but two years later, Hawkins and Dupuytren were actually the ones to recognize that these ulcers were cancerous. Although Marjolin´s ulcer is most commonly associated with burn scars, other sources such as venous stasis ulcers, decubitus ulcers osteomyelitis, pilonidal sinus, fistulas, hidradenitis may also cause the appearance of malignant degeneration.

The exact incidence of burn scar carcinoma is rare; about

Interesting Cases - *continued from pg 8*

2% of squamous cell carcinoma of the skin originate in burn scars. The length of time between the injury and the appearance of the neoplasm may vary considerable. Thirty or forty years may elapse before carcinoma develops in a burn scar, while the time is drastically shortened in cases of radiation injury and it is directly proportional to the wave length of the radiation. When compared with squamous cell carcinoma not due to chronic inflammation, Marjolin´s ulcers have a much higher metastatic rate.

The cellular mechanisms leading to malignant degeneration are unclear. It seems however, that when there is a continuous reparative process with stimulation for epithelial cell differentiation and division, some cells may develop abnormal characteristics and acceleration of the rate of mitosis leading to epidermal carcinoma.

Therefore optimally, preventive care of chronic wounds is of greatest importance and should be applied early, before the development of malignant transformation .If such a complex tumor develops, it requires a multidisciplinary approach. Wide excision is the primary treatment. Microsurgical reconstruction of the resulting defect is often in such situations, the method of choice, because, with the variety of flaps and tissues available for transfer, stable coverage can be achieved, leading to life and limb salvage and preservation of function.

References

1. Callam MJ, Harper DR, Dale JJ, et al. Chronic ulcer of the leg: clinical history. Br Med J (Clin Res Ed) 1987;294(6584):1389-91.
2. Carcu E, Aktas A, Sisman N, Ortan Y. Thirty-one cases of Marjolin´s ulcer. Clin Exp Dermatol, 2003,28:138-41.
3. de Bree E, Zoetmulder FA, Christodoulakis M, et al. Treatment of malignancy arising in pilonidal disease. Ann Surg Oncol 2001;8(1):60-4.
4. Love RL, Breidahl AF. Acute squamous cell carcinoma arising within a recent burn scar in a 14 year old boy. Plast Reconstr Surg 2000, 106:1069-71.
5. Nelzen O, Bergqvist D, Lindhagen A. Venous and non-venous leg ulcers: clinical history and appearance in a population study. Br J Surg 1994;81(2):182-7.
6. Smith J, Mello LF, Nogueira Neto NC, et al. Malignancy in chronic ulcers and scars of the leg (Marjolin's ulcer): a study of 21 patients. Skeletal Radiol 2001;30(6):331-7.
7. Tenopyr J, Silverman I. The relation of chronic varicose ulcer to epithelioma. Ann Surg 1932;95:754–8.
8. Trent JT, Kirsner RS. Wounds and malignancy. Adv. Skin Wound Care. 2003, 16:31-4.
9. Williams LS, Mancuso AA, Mendenhall WM. Perineural spread of cutaneous squamous and basal cell carcinoma: CT and MR detection and its impact on patient management and prognosis. Int J Radiat Oncol Biol Phys 2001;49(4):1061-9

Figures

Right Upper Extremity

Pre-Op

Fig. 1

Left Upper Extremity

Pre-Op

Fig. 2

Fig. 3

Post-Op

Fig. 4

Post-Op

Fig. 5

Mini Review: Epiphyseal Transplant

Marco Innocenti M.D.
Microsurgery Unit, Dept. of Orthopaedics, A.O.U. Careggi
C.T.O. Largo Palagi 1, 50139, Florence, Italy
e-mail: m.innocenti@agora.it

Introduction:

Upper limb skeletal reconstruction in children either after resection of bone tumors involving the epiphysis of a long bone or after destruction of the growth plate by infective or traumatic causes, can not successfully be achieved with traditional techniques. Neither a prosthesis, nor a non vascularised graft is actually able to replace the damaged epiphysis while at the same time restoring the growth potential. A vascularised transfer of the proximal epiphysis of the fibula, along with a variable amount of the adjoining diaphysis is probably the most effective solution in dealing with upper limb bone defects which involve either the distal radius or the proximal humerus in the pediatric age group. The key feature of such a procedure is the ability to reconstruct the bone loss while simultaneously restoring the growth potential. The feasibility of the technique depends on adequate blood supply both to the growth plate and to the diaphysis : a failure in revascularization, actually leads to premature fusion of the growth plate and possible non union with the host bone.

Historic review and experimental background

The first reports of free non vascularized epiphyseal transplant go back to the end of nineteenth century. All the attempts in the pre-microsurgical era had discouraging results in terms of graft survival and growth, and a failure in early revascularization of the growth plate was identified as a crucial condition in determining the in success. Efforts were therefore oriented in tackling the problem related to revascularization, reducing the thickness of the bony portion of the graft in order to improve the possibility to get some blood supply from the host bone. The results, however, did not improve significantly.

Advances in microvascular surgery gave a new impulse to experimental research and many experiments were carried on with the aim to check the feasibility of vascularized epiphyseal transfer in an animal model. Restoring the metaphyseal and epiphyseal blood supply, Bowen, Boyer, Nettelblad and others demonstrated the survival and the growth of the transplanted epiphysis.

The procedure was then applied in the clinical practice in the eighties , when a few surgeons pioneered this innovative technique in the human being, achieving some encouraging results which convinced the scientific community to refine the technique and expand the indications. A number of cases of skeletal reconstruction with epiphyseal transfer have recently been described in a variety of clinical problems involving the growth plate in skeletally immature patients. In 1986 Tsai reported eight cases of humeral and radial reconstruction using the proximal fibula achieving a continual axial growth in 50% of patients. Some of these grafts were based on a double vascular source with the aim to supply both the epiphysis and the diaphysis. Pho , in 1988, published his observations on three cases of epiphyseal reconstruction in children using the proximal fibula based on the peroneal artery . More recently,in 2001, Amr described two cases of epiphyseal transplant in the proximal femur and the distal radius. Also in this case, a double pedicled graft was preferred. Although good results have been reported in the recipient site, partial necrosis of the skin and of the muscles of the donor leg occurred due to extensive surgical approach and loss of anterior tibial artery and injury to peroneal artery branches to the surrounding soft tissues. Menezes reported in 2000 an anatomical study with the purpose to investigate the feasibility of microvascular transplantation of the proximal fibula based on the anterior tibial artery and a case report according to this technique with satisfactory result. Our experience refers to 27 cases with a follow up ranging between 15 and 2 years. We routinely used a graft based on the anterior tibial vessels, designed according to a reverse flow vascular model. In 17 cases the reconstruction involved the proximal humeus, the distal radius in 7 and the hip in 3 cases. The length of the graft ranged between 7 and 12 cm.

State of the art

Current indications for vascularized epiphyseal transfer include trauma, tumor and congenital disorders involving the growth plate of a long bone in children. The proximal humerus and the distal radius can be optimally reconstructed according to such a procedure, but the technique has been occasionally used also in cases of custom made reconstruction of lower limb joints such as the hip and the knee. In our series of 27 cases, more than 70% of patients have had consistent and predictable axial growth after the transfer and all the grafts but one healed with the host bone and underwent hypertrophy.

Choice of the donor bone

One of the main problems is the lack of suitable donor sites. Some Authors suggested the use of the iliac crest and the lower portion of the scapula . Anatomically speaking, both them are apophysis and not true epiphysis. Therefore they are lacking of an organized articular surface and there is some concern about the future of the hyaline cartilage after its transfer to an intra-articular location. Furthermore, neither the scapula nor the iliac crest are provided of tubular bone for simultaneous diaphyseal

Mini Review: Epiphyseal Transplant - *continued from pg 10*

reconstruction .
The only satisfactory options are the proximal fibula, a metatarsal, or a toe phalanx. For major reconstructions, fibula is definitely the best choice, providing a true epiphysis and a variable amount of shaft which allows long diaphyseal reconstruction and safe bone fixation. Because of anatomical correspondence with the distal radius and proximal humerus, the fibula is the ideal bone in dealing with upper limb skeletal reconstruction.

Choice of the pedicle

Failure of axial growth and premature fusion of the physis are some of the potential complications that may be related to the choice of the pedicle.

The upper fibular epiphysis is supplied by three small arteries: the inferior genicular artery, a recurrent branch of the anterior tibial artery and a not constant unnamed artery directly raising from the popliteal artery. Much of the early published experiences report the use of the peroneal artery either alone or combined with an epiphyseal artery. The grafts based on the peroneal artery alone had unpredictable outcome and the majority of them failed to achieve an acceptable growth. On the other hand, the double pedicled grafts, where, besides the peroneal artery, are harvested either the descending genicular artery or the recurrent branch of the anterior tibial artery, are technically difficult because they need multiple anastomoses and vein grafts. In addition there is an increasing of the operating time and of the risk of thrombosis .

In 1988, Taylor reported his anatomical investigations on proximal fibula blood supply confirming the role of the anterior tibial artery in the vascularity of the fibular growth plate and also demonstrating that sufficient blood supply can be provided to the proximal diaphysis by small musculo periosteal branches raising from the same artery . Therefore the anterior tibial artery may be used as the vascular pedicle for a distant transfer of such a graft provided that both the epiphyseal vessel and the delicate periosteal vascular network are preserved during the dissection.

Operative technique

The harvesting of the proximal fibula based on the anterior tibial artery vascular network has been recently refined. We modified the original technique described by Taylor in 1988, introducing a reverse flow model which provides a very long distal vascular pedicle and avoids the use of vein grafts. An anterolateral approach in the space between tibialis anterior and extensor digitorum longus muscles, prolonged proximally and laterally up to the biceps femoris tendon, is chosen in order to expose the fibula and the vascular pedicle. Great care must be taken in dissecting the peroneal nerve from the anterior tibial vascular bundle and in preserving the musculoperiosteal branches to the diaphysis of the fibula. Direct dissection of the epiphyseal recurrent branch is not recommended because of the dimension of the artery and the high risk of injury. The small vessel must be protected by a muscular cuff including the portion of extensor digitorum longus and peroneus longus muscles which is proximal to the intersection of peroneal nerve. A strip of biceps femoris tendon is included in the harvest and used for soft tissue repair in the recipient site. Distal radius reconstruction is facilitated by the perfect correspondence in size with the host bone. Bone fixation is usually achieved by plates and screws and the pedicle anastomosed end to end either to anterior interosseous or radial arteries and cephalic vein. Bleeding from the muscular cuff which surrounds the epiphysis after microvascular repair, indicates the restoration of the flow to growth plate. The radiocarpal joint is stabilized using the biceps femoris tendon strip which is woven in the residual distal capsule. The diameter of the humerus is approximately double, if compared to the fibula, and this anatomical mismatching suggests an intramedullary location of a portion of the fibular shaft. In order to provide an elastic implant, the subsequent osteosynthesis should be achieved by a long locking compression plate with unicortical screws. The preferred recipient vessels are the deep humeral artery and vein. The gleno humeral capsule and rotator cuff are gently sutured around the fibular epiphysis to stabilize the joint.

The proximal fibular epiphysis may also be used in selected cases of hip reconstruction. We replaced the proximal femur in three children affected by bone sarcoma using a prefabricated graft consisting of a segment of massive allograft and autologous proximal fibula. The head of the femoral allograft was resected and the medullary canal reamed in order to place the vascularized fibula in the medullary cavity in a concentrical fashion. After rigid bone fixation, the epiphisys was reduced in its anatomical location and anastomosis to the recipient vessels performed. The aim of the procedure was providing an adequate bone stock with the allograft and the potential for growth and joint function with the fibula. Two patients out of three had satisfactory outcome with preservation of growth, integration between vascularized fibula and allograft and full weight bearing after three years.

Results

In our experience the growth trend which can be expected after the transplant, ranges between 0.7 and 1.4 cm. per year. The factors which might interfere with the growth of the grafts can be summarized as follows:

- The age of the patient: the growth potential is a function of the age and it can change as long as

Mini Review: Epiphyseal Transplant - *continued from pg 11*

sekeletal maturity is not reached

- The recipient anatomic district: the new heterotopic location influences the growth by means of mechanical and humoral factors
- The blood supply: the quality and the quantity of blood supply and their variations have inevitable repercussion on the growth
- Adjuvant chemotherapy: it is routinely administered preoperatively and postoperatively in case of bone sarcomas. An inhibition of the skeletal growth is reported as one of the side effects related to such a therapy.

From a functional standpoint, excellent results are usually achieved in distal radius reconstruction. In our series, all the patients recovered a nearly normal range of motion on all planes and the wrist resulted to be pain free and stable. Neither axial deviation nor subluxation of caput ulnae have been observed. The articular surface underwent significant remodeling, governed by the loading stresses present in the new location, developing a concave surface which improved stability and range of motion.

Proximal humerus reconstruction provides less exciting results due to anatomic mismatching between fibular head and glenoid. In addition, all the tumor cases are complicated by the ablation of a variable amount of the muscles with negative consequences in active motion. However, acceptable range of motion for daily activities can be expected in all cases, and epiphyseal transplant maintains its supremacy over conventional techniques also in this anatomic district.

Complications have been observed both at donor and recipient site. Instability of the knee joint may be one of the complications expected in the donor area. However, meticulous reconstruction of the lateral collateral ligament is usually able to prevent this condition. By contrast, injuries to the motor branches of the peroneal nerve are very difficult to avoid. In case of section of a motor branch, direct neurotization or neurororraphy are recommended in order to reduce the incidence of permanent palsies of the muscles supplied by this nerve.

Fractures are more likely to occur in case of humeral reconstruction because of excessive mechanical stresses. In our experience, the use of more elastic implants significantly reduced the incidence of fractures in the transferred bones.

A subacromial displacement of the fibular physis is a frequent complication related to anatomical mismatching and subsequent reconstructive problems. Although this condition does not interfere very much with the final functional outcome, it should be prevented improving the quality of the reconstruction.

A failure in longitudinal growth is a major complication which probably depends on a damage to the recurrent epipyseal artery which supplies the growth plate after the transfer to heterotopic location .

The future

Current investigations are exploring three different pathways: vascularized allograft transplantation, prefabricated transplants, foetal transplantation. Among them, allograft transplantation is probably the only realistic option at present time. Although technically feasible, the procedure has been only sporadically applied because of concerns related to immunosuppression. The development of new immunosuppressants with less systemic toxicity is a crucial point for the use of allografts in musculoskeletal extremity reconstruction. So far, Bowen, Bray and Boyer elegantly demonstrated the viability of a transplanted epiphyseal plate after a short term immunosuppression. In their experiment, immunosuppression is being stopped after that bone union, and subsequent vascular ingrowth, occurred at both sides of the transplanted growth plate . Although conceptually very interesting, the procedure need more time and further investigation to be applied in clinical practice.

Society Portrait

Panayotis N. Soucacos, M.D., FACS
Professor of Orthopaedics
President, WSRM
psoukakos@ath.forthnet.gr

The Hellenic Society of Reconstructive Microsurgery

The beginning of microsurgery in Greece is rooted from the return of Professor Panayotis N. Soucacos from Duke University Medical center in Durham, NC in 1975. At that time the 1st microsurgery-replantation team was organized, and shortly after the 1st successful replantation of a completely amputated finger in Greece was achieved in 1979. With a concerted effort in teaching, training and experience, reconstructive microsurgery has made noteworthy leaps and bounds in Greece, with renowned teams of microsurgeons in Athens, Ioannina, Larissa, Thessaloniki, among others.

The Hellenic Society of Reconstructive Microsurgery (HSRM) was founded in 1990. The founding members were all microsurgeon who had pioneered microsurgery in Greece, including E Anastasiou, A. Beris, K. Vlastou, A. Zoubos, N. Daoutis, D. Kalomiri, K. Stamatopoulos, etc, and P.N. Soucacos, the founding president of the Society. In December of 1991, the first inaugural meeting of the Hellenic Society of Reconstructive Microsurgery was held in Metsovo, Greece. In 1992, HSRM along with the Hellenic Association of Orthopedic Surgery and Traumatology, acquired offices in a new medical building in Athens, thanks to the generous contribution from some of the founding members.

Greece is also a founding member of the European Foundation of Microsurgical Societies. The role of Greece in the international forum of microsurgery has been recognized world-wide by it being the host of the 11th Congress of the International Microsurgery Society in 1992 in Rhodes. PN Soucacos, along with members of the HSRM served as organizers and hosts for this meeting. The inaurgural address by Professor Soucacos was in English, using primarily words of Greek origin. Greece has also hosted several other notable meetings for the International Microsurgery family, including the 14th Congress of the International Microsurgical Society and the 4th Federation of Societies for Microsurgery in 1998 in Corfu. In 2007, the Greek family of microsurgeons hosted the 4th congress of the World Society of Reconstructive Microsurgery, an event which underscored their role in scientific developments of Microsurgery around the world. The presence of renowned surgeons and scientists from around the world who attended the meeting hosted in Athens, Greece was a token of their recognition to microsurgery in Greece.

The 4th WSRM Congress which took place in Athens, under the Presidency of Julia Terzis, was in the spirit of academic excellence, recognizing not only the contributions of the pioneers in the field, but opening avenues and supporting young surgeons and scientists with new ideas. Dr. Catherine Vlastou, Chair of the Scientific Committee, ensured that the scientific and clinical content of the 4th Congress highlighted rapid progress in the field. Professor Alexandros Beris, Chair of the Organizing Committee, along with Professor Panayotis N. Soucacos, Honorary Chairman ensured that surgeons were able to share the latest advances in surgical technique and research. One of the highlights of the meeting was the Opening Ceremony which took place in the Ancient Roman Agora located on the northside of the Acropolis. As the Agora (greek- Ageiro – gather together) was the political and administrative center of ancient Greek cities and the nucleus where social, commercial and religious activities concentrated, it was fitting that the WSRM Opening Ceremony took place there. An invited lecture by Dr. Vivi Vasilopoulou, General Director of Antiquities and Cultural Heritage from the Hellenic Ministry of Culture addressed the international scientists attending the meeting in her lecture entitled “The Acropolis of Athens: A Monument of Cultural Heritage for Europe and the World”. The night was magical with a concert by the famous Greek composer, Stamatis Spanoudakis, who as written numerous hit songs for most major Greek singers, concentrates on instrumental music, with Greek historical or religious themes, combining the influences of rock, classical and Byzantine sounds in his music. The significance of the WSRM Opening Ceremony was underscored by the presence of the President of the Hellenic Republic, Dr. Karolos Papoulias, who officially opened the Congress.

With a concerted effort in teaching, training and experience, reconstructive microsurgery has made noteworthy leaps and bounds in Greece, with renowned teams of microsurgeons in Athens, Ioannina, Larissa, Thessaloniki, among others.

Today, Greece has several microsurgical centers, including one in Ioannina, at the Department of Orthopaedic Surgery, University of Ioannina, School of Medicine, the Department of Hand Surgery and Microsurgery at the KAT Accident Hospital in Athens, among many others. Together these units have performed numerous replantation and revascularization procedures, reconstructive procedures including free flaps, toe-to-hand transfers, vascularized fibular grafts, brachial plexus reconstruction, etc.
Since 1990, two issues of the Journal Microsurgery have devoted a special issue to the Frontiers and History of Microsurgery in Greece. PN Soucacos was the Guest Editor for both of these issues. In addition to these, however, PN Soucacos, has guest edited several special issues of journals devoted to the state-of-the-art of microsurgery. In all of these, the Greek Microsurgery family had significant contributions.

Education has been a primary concern in the Greek Microsurgery family. The first initiative was the Hellenic Microsugery Seminar that is designed to give hands on training to young surgeons in basic techniques. It was initiated in 1984, and this yearly seminar has trained over 1000 surgeons. These Seminars have met with great success, with extensive waiting lists to be trained by the best national and international microsurgeons including Urbaniak, Gilbert, Nunley, Foucher, Brunelli, Villki, Georgescu, Cuice, Ioanac, Frastick, Millesi, Eisenschenck, Stefanovic, and many more. The Microsrugery Week is an intensive course of that takes place 3 times per year, and has trained close to 400 surgeons in finer technical details.

Society Portrait - *continued from pg 13*

Since these initial efforts, several microsurgery centers have put forth demanding training workshops for young surgeons, including international flap dissection workshops in animal models, among many others.

Today, HSRM remains devoted to the goal of educating more young surgeons and to the expansion of microsurgery, with the formation of new centers for the better care of patients with mutilating injuries of their upper and lower extremities.

History of Microsurgery

Julia K Terzis, M.D.
700 Olney Road
EVMS - LH-Room 2055
Norfolk, VA 23501
mrc@jkterzis.com

The Early Years

The history of microsurgery stems from advances in vascular surgery. Pare described the vascular ligature in 1552. In 1902 Carrel introduced the "3 stay suture technique " in vascular anastomosis . Goyanes and Lexer at the turn of the century (1906-1907) performed autogenous vein grafts.

A revolution in vascular surgery was the discovery of heparin in 1916.

Alexis Carrel, a native of France, immigrated first to Canada and then to the University of Chicago, where working with Charles Guthrie accomplished most of what became later the basis for microvascular surgery. Carrel was awarded the Nobel prize in 1912 for development of these techniques.

A monocular microscope was used for ostoclerosis' by Nylen in 1921 and Holmgren in 1922 respectively.

In the late 1950's publications showed 1mm vessel anastomoses were possible in rat's arteries (Julius Jacobson – USA and later Sun Lee).

On January 2, 1963 the first successful replantation of a completely severed hand was performed by Zhong Wei Chen in China.

Malt replanted a severed arm in 1962 but reported it in 1964.

In 1965 the first Double Operating microscope became available by Zeiss under the guidance of Earl Owen who used it to transplant kidneys in rats, rabbits and heart transplants in mice.

In 1965 Buncke and Shultz reported the first successful digital replantation in rhesus monkeys. Buncke had remodeled his garage into a laboratory to carry out these experiments.

Between 1965 and 1966 Tom Krizek in Cleveland successfully transferred twenty groin flaps in dogs which was the first report on composite tissue transplantation by microvascular anastomoses.

On July 27, 1965 Tamai and Komatsu achieved a microsurgical replantation of a completely amputated left thumb in a 28 year-old worker. This was published in Plastic and Reconstructive Surgery in 1968.

In 1966 Drs. Donaghy and Yasargil organized the first symposium on microsurgery in Burlington, Vermont.

In 1967 Harry Buncke chaired the first panel on microsurgery in the ASPRS meeting in New York City. Drs. Harry Buncke, Susumu Tamai, John Cobbett and James Smith were the participants in this historic panel.

On April 17, 2968 John Cobbett inspired by Harry Buncke's work performed the first successful toe to hand transplant.

On October 15-20, 1972, the first International Symposium on Microsurgery was held in Vienna, Austria organized by Hanno Millesi.

In 1973 the second symposium was also held in Vienna by Millesi and since then the constantly enlarging group of microsurgeons met every two years.

During the years 1970 to 1973 there was an explosion of the world's "first" successful transfers of composite tissues. Buncke and McLean transferred successfully a free omentum flap to the scalp after resection of neurofibromas.

O' Brien reported on replantation surgery in The Journal of Bone and Joint Surgery. Daniel and Taylor performed the first free groin flap to the leg in January 1973 and reported it to Plastic and Reconstructive Surgery. Harii performed a scalp transfer in September 1972 but this was not published until 1974. Buncke succeeded in transplanting a hallux-to-thumb as the world's second such transfer.

Chen and his team, in Shanghai's 6th Peoples Hospital achieved in 1973 the first clinical free pectoralis major muscle transfer to treat ischemic contracture of the fore-

History of Microsurgery - *continued from pg 14*

arm. Ikuta achieved a free gracilis transfer for Volkmann's contracture in 1975.

The first neurovascular free flap was developed and executed successfully in 1974 by Daniel and Terzis which involved the transfer of the dorsalis pedis flap to a mutilated anaesthetic hand.

Jim Smith and Kurtze reported independently in 1964 on the use of the operating microscope for nerve repair in 1964.

Millesi, who participated in 1963 in the 3rd IPRAS Congress in Washington D.C., visited Smith in New York and became convinced that Microsurgery was the future in peripheral nerve reconstruction. His experiments on tension in rabbits led him to contribute in 1973 the interfascicular nerve grafting technique to overcome nerve defects. Terzis independently in 1972 in Bruce Williams' laboratory at the Montreal General Hospital working on the sciatic nerve model in the rats documented the detrimental effects of tension electrophysiologically, and showed that the use of nerve graft was superior to end-to-end suture under tension.

Taylor and Ham in 1976 performed the first vascularized nerve graft using the superficial radial nerve based on the radial artery to bridge a large defect of the median nerve.

Terzis expanded the use of vascularized nerve grafts for brachial plexus reconstruction, developed a classification on the blood supply of nerves for usage as vascularized grafts, and was the first to develop and introduce the free vascularized ulnar nerve for brachial plexus reconstruction in C8 and T1 avulsions. Both clinical and experimental studies have shown faster regeneration and superior outcomes in large nerve defects and scarred beds.

The International Society of Reconstructive Microsurgery, which was established in 1972, merged in 1999 with the International Microsurgical Society to form the World Society of Reconstructive Microsurgery. The Inaugural Congress was held in 2001 in Taipei, Taiwan under the Presidency of Victor Meyer. The local hosts were Fu Chan Wei, David C.C. Chuang and Hung-Chi Chen from Chang Gung Memorial Hospital, one of the busiest microsurgical centers in the world.

The second WSRM Congress was held in 2003 in Heidelberg, Germany under the Presidency of Fu Chan Wei. The local hosts were Gunter German and H.U. Steinau.

The third WSRM Congress was held in Buenos Aires, Argentina in 2005 under the Presidency of Wayne Morrison. The local host was Guillermo Loda. The fourth WSRM Congress was held in Athens in 2007 under the Presidency of Julia Terzis. The local hosts were Panayiotis Soucacos, Alekos Beris and Katerina Vlastou.

The 2009 Congress was held in Okinawa Japan under the presidency of Berish Strauch. The local host were Kazuteru Doi and Isao Koshima.

Finally, the 2011 Congress of WSRM is scheduled to be held in Helsinki, Finland under the Presidency of Panayiotis Soucacos. Erkki Tukiainen and the Finish Microsurgery group will be the hosts.

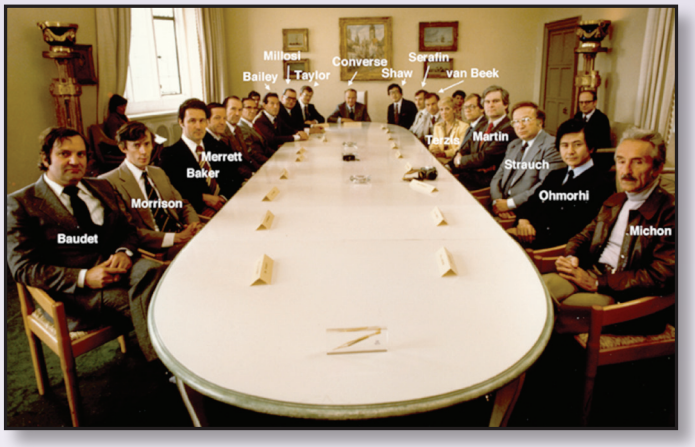

Figure 1:
June 22-29, 1980, Leeds Castle, England – International Conference of Microsurgery, Clockwise from left: Baudet, Morrison, Baker, Merritt, Clodius, Bailey, Millesi, Taylor, Converse, Shaw, Serafin, Anderl, Terzis, Van Beek, Webster, Strauch, Ohmori, Michon

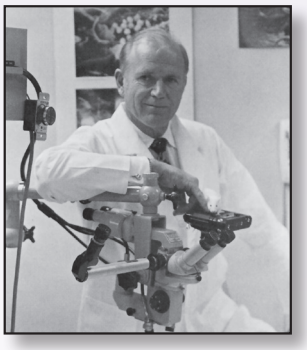

Figure 2:
Harry J. Buncke, Microsurgical replantation, Transplantation Department, Davies Medical Center, 45 Castro Street, San Francisco, CA 94114

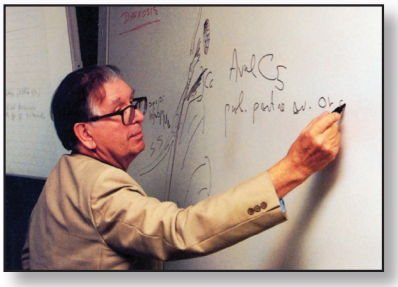

Figure 3:
Narakas teaching (a favorite pastime) in a European Course

Microsurgery - *continued from pg 15*

Figure 4: (right)
Terzis (right) and Manktelow (center) transferring the first pectoralis minor flap at Royal Victoria hospital on January 26, 1981.

Figure 5: (left)
Terzis and Daniel: Practicing the transfer of neurovascular free flaps in the pig model –Early 70's

Figure 6:
2001 Inaugural Congress of the WSRM- Taipei, Taiwan

From left, upper row: Owen, Tamai, Millesi, Boeckx, Meyer, Baudet, Wei, Strauch, Levin, Chiu, Sherman, Mrs. Ferreira, Ferreira, Mrs. Strauch. From left, lower row: Sun Lee, Manktelow, our host, Terzis, Taylor

Figure 7:
At the Aesculap Akademie, Tut-tlingen, Germany, October 28-29, 2000 – Organized by Edgar Biemer

Clockwise from left, top row: Baudet, Biemer, Pho, Berger, Kutz, Meyer, Chen, Steinau, Ferreira, Shaw, Morrison, Gupta
Clockwise from left, front row: Wei, Ostrup, Steichen, Tamai, Terzis, Daniller, Soutar, Strauch, Manktelow

Figure 8:
Executive Council at the 10th ISRM Meeting in Mu-nich, Germany

Clockwise from left: Millesi, Ferreira, Taylor, Cobbett, O'Brien, Biemer, Strauch, Chen, Tamai, Buncke

Figure 9:
Inaugural Congress of the World Society for Reconstructive Microsurgery, October 31-Novemebr 3, 2001
Taipei, Taiwan

New Members

JUNE, 2009

Mohammed Alazrak, MD
Egypt

Stavros Anagnostou, MD
Greece

Efstratios Athanaselis, MD
Greece

Antonia Barmpitsioti, MD
Greece

Emanuele Cigna, MD
Italy

Heather A. Erhard, MD
USA

Emmanouil Fandriois, MD,
Greece

Panagiotis Giannakopoulos, MD,
Greece

Fillippos Giannoulis, MD
Greece

Chan Yeong Heo, MD
Korea

Ioannis Ignatiadis, MD
Greece

Zinon Kokkalis, MD, PhD
Greece

Vasileos Kostopoulos, MD
Greece

Bernard Lee, MD
USA

Maria LoTiempo, MD
USA

Adamtios Misitzis, MD
Greece

Michael Neumeister, MD
USA

Rei Ogawa, MD
Japan

Ellada Papadogergou, MD
Greece

Panayiotis Papagelopoulos, MD
Greece

Alexander Payatakes, MD
Greece

Panagiotis Koulovaris, MD
Greece

Panagiotis Samelis, MD
Greece

Joseph Serletti, MD
USA

Sarantis Spyridonos, MD
Greece

Vassiliki Tsiampa, MD
Greece

Nikolaos Tzinieris MD
Greece

Marc Vandervoot
Belgium

Fausto Vitterbo
Brazil

Peirong Yu, MD
USA

Han-Lian Yu, MD
USA

Membership News

WSRM Committee Roster 2009-2011

This is official notification to the membership of the members that have been appointed to serve in the standard committees of the WSRM. If you have any questions please advise the Central Office immediately. Please help us applaud those members that have volunteered their time to serve on a committee to better the organization.

Bylaws Committee

Milan Stevanovic, MD, Chairperson, USA

Yaffe Batia, MD, Israel

Roberto Adani, MD, Italy

Catherine Vlastou, MD, Greece

Satoshi Toh, MD, Japan

Membership Committee

Kazuteru Doi, MD, Chairperson, Japan

William Pederson, MD, USA

Giorgio DeSantis, MD, Italy

Amresh Baliarsing, MD, India

Fuminori Kanaya, MD, Japan

Nominating Committee

Berish Strauch, MD, Chairperson, USA

Susumu Tamai, MD, Japan

Wayne Morrison, MD, Australia

Giorgio DeSantis, MD, Italy

Aldona Spiegel, MD, USA

Ad Hoc Education Committee

Catherine Vlastou, MD, Chairperson, Greece

Wayne Morrison, MD, Australia

Fausto Viterbo, MD, Brazil

Fu Chan Wei, MD, Taiwan

Robert Walton, MD, USA

Program Committee (FINLAND, 2011)

Simmo Vilkki, MD, Local Co-Chairman

Sirpa Asko-Seljavaara, MD, Local Chairman

Erkki Tukiainen, MD, Co-Chairperson

Susana Kuohannen, MD, Co-Chairperson

Ad Hoc Industry Liaison Committee

Panayotis Soucacos, MD, Greece

L. Scott Levin, MD, USA

Berish Strauch, MD, USA

Isao Koshima, MD, Japan

Ad Hoc Forward Planning Committee

Panayotis Soucacos, MD, Chairperson, Greece

Berish Strauch, MD USA

Julia K. Terzis, MD, PhD USA

David Chang, MD USA

L. Scott Levin, MD USA

Kazuteru Doi, MD Japan

2009 WSRM Meeting in Okinawa, Japan

Isao Koshima, M.D.
University of Tokyo
Dept. of Plastic & Reconstructive Surg.
7-3-1, Hongo Bunkyo-ku
113-8655 Tokyo
Japan
koushimai-pla@h.u-tokyo.ac.jp

Meeting highlights

The World Society for Reconstructive Microsurgery 2009 was held in Okinawa, Japan, during June 25-27, 2009. Totally 500 presentations with 750 attendants were coming to Okinawa in spite of epidemic influenza. The topic in this congress was “Supermicrosurgery”.

As for highlights of acahademic programs, congress chairmen lectures were “Supermicrosurgical reconstruction for brachial plexus injury” by Dr. Doi and “Supermicrosurgery and perforator flaps”by Dr Koshima. Invited lectures were “Mutually adaptable EMG devices for prosthetic hand with bio-feed back signal transfer” by Dr Yokoi and “Medical engineering microsurgery and neurosurgery” by Dr Morita.

The Congress Symposium were perforator flap, brachial plexus injury, vascularized bone graft for extremity, head and neck reconstruction, safer skin flap transfer, pediatric microsurgery, lymphedema, breast reconstructions, upper extremity reconstruction, and supermicrosurgery in perforator flap. The titles of panel were replantation, new technology and tissue engineering, allogenic transplantation, lower limb reconstruction, mandibular reconstruction, facial reanimation, and nerve. Instructional course lectures for young microsurgeons were perforator flap, free mucle transfer, vascularized bone, head and neck reconstruction, and breast reconstruction. Workshops in Event hall were “Supermicrosurgery workout for half-mirimeter microsurgery” sponsored by Mitaka Cohki Co., Ltd. & Kono Seisakusyo, and “Inspire the next Look touch, and seek perforators with high resolution ECHO” sponsored by Hitachi Corporation.

In addition, postcongress on “Perforator flaps and propeller flaps” was held in Tokyo at June 28-29, 2009. the congress chairmen were Prof. Koshima (University of Tokyo and Prof. Hyakusoku Nippon Medical School. Almost100 attendants, majority were foreign doctors, joined in this meeting. In the afternoon of the second day, 30 visitors come on live surgery (lymphaticovenular anastomosis for lower leg edema) in University of Tokyo.

Guidelines for Hosting WSRM Congress

WSRM Host Requirements

Everyone is quite aware that the organization of a meeting of the caliber of WSRM is a major endeavor. After the efforts involved in organizing the past meetings of WSRM, it has become quite clear that the close collaboration between the President of the Society and the Organizing Committee is of paramount importance for the success of any future Congress. The President of WSRM along with the Executive Council are those ultimately responsible for the outcome of WSRM and its' meeting. As such, it is imperative that the President and the Executive Council are not only fully apprised of all aspects (scientific, financial, speakers, exhibits, etc) regarding the congress organization, but are involved in the decision making process.

As you all may recall, WSRM was created by the merging of two international societies, the IMS and ISRM, in 1999. The first Congress was in 2001 in Taipei, Taiwan and this June 2009, the 5th Congress was held in Japan. It is clear that subsequent hosts of WSRM congresses could learn from the experience of previous hosts.

Year	President	Chairman	Venue
2001	V Meyer	FC Wei	Taipei, Taiwan
2003	FC Wei	G Germann, H Steinau	Heidelberg, Germany
2005	W Morrison	G Loda	Buenos Aires, Argentina
2007	J Terzis	A Beris PN Soucacos C Vlastou	Athens, Greece
2009	B Strauch	K Doi I Koshima	Okinawa, Japan
2011	PN Soucacos	E Tukiainen	Helsinki, Finland

All agree, that there are a multitude of pivotal factors involved in hosting a WSRM meeting. Below are some of the basic concerns and issues that should be addressed. It is of paramount importance that you have the full backing and support of the local microsurgery society and this should be indicated. It goes without saying, that it would be of even greater advantage to have the combined support of the Plastic, Orthopaedic and Hand Surgery Societies, as well. Any conflict between these societies of the host country is usually disastrous.

Below are some of the major concerns and issues that have been identified regarding hosting a WSRM Congress. These are under final consideration by the Executive Council, and will be published in a booklet format in the near future for interested parties.

Concerns & Issues Regarding WSRM Congress Organization

1- PCO
Appointment of the professional congress organizer (PCO). Their experience in organizing international congresses of this nature should be indicated. PCO selection should be based on the curriculum vitae of each PCO, intensive interviews, the PCOs past record for large meetings, recommendations from scientific societies, large hotels, & local industry and importantly, the PCOs proposals for how to handle this particular meeting.

2- Budget
The host has financial responsibility of the congress, and must indicate how they will undertake this burden. In addition to a proposed budget, plans on marketing of the meeting, types of sponsors (eg. government, local societies, industry, etc), among others must be indicated.

3- Venue
A proposal should indicate the available lecture rooms at the convention center and the seating capacities. A large auditorium of at least 800 seats must be available for opening & closing ceremonies, and the Presidential Invited Lecture. Breakout rooms (number available & size) should be indicated as these will be needed for Video sessions, Business meetings, Executive Council meetings and Preview rooms. Planning of coffee breaks & lunch breaks should also be indicated. Ample and easy access to poster exhibit space should be available. The interested host should indicate the amount of technical exhibit space that would be available. In order to attract good industrial support, it is essential that the exhibit area is close to lecture areas and coffee break areas. That it, this space should be within the general traffic area of the meeting. This keeps industry satisfied that delegates will visit their exhibits.

4- Hotels
Rooms should be reserved in variety of hotel categories (two to five star) with prices ranging from low to high. A full range of hotel options should be added to the announcement, including cheap, clean rooms to serve for younger fellows, trainees or those surgeons from less

fortunate areas, as well as more luxurious, nicer rooms for those who prefer something better. All hotels should be close to the meeting venue. All rates should be quoted in the 1st Announcement "per person per night in ECU and include breakfast, service and local taxes." Interested hosts should indicate the proposed payment policy:
Full payment of hotel room before arrival, is usually not preferred. A deposit, however, should be required.

5- Registration
Potential hosts in the application should indicate registration fees. In addition, they should be scaled for early, late and on site registration. In addition, they should indicate if there will be special fees for delegates from countries experiencing economic hardship. (eg. Will funds be allocated to subsidize some of the cost for these delegates? If so, how will they be selected?) Planning for the location of Registration Desk and manning of desks to enable speedy and comfortable registration of all delegates is important for a good start. One-day registration is not recommended as it limits latecomers from attending, and decreases overall attendance.

6- Scientific Program
Plans for formatting the scientific program should be indicated – that is, what new innovations are planed to make it attractive for delegates to register and attend. More importantly, an agenda for the meeting should be indicated (eg number of days, number of meeting rooms, etc). Other information that should be indicated is when information will be available on the WSRM website and the proposed time-schedule regarding finalizing program:
abstract due date, abstract acceptance cutoff date, deadline for early registration (usually right after acceptance cutoff) and Final program on website. (These are estimated initially, but soon need to be made clear).

7- Announcements – Preliminary Programs - Website
The scheduled time-line for the printing & distribution of printed material (1st Announcement, 2nd Announcement, Preliminary Program and Final Program) should be indicated.

8- Technical Exhibits, Industry & Sponsors
Sponsors are an important aspect for a successful meeting. An invitation letter for potential sponsors & exhibitors and a Sponsor's Information booklet should be mailed to all Exhibitors about 18 months prior to the meeting. This should include specific details on shipments, unloading hours, parking lots, discounts on ship transportation, as well as an application form for on site booth services, such as construction of booths, electrical power, air pressure (if required), water, telephone lines and any other technical requirements. When all of these requirements have been received, then the final construction layout is to be made.

9- Social Program
The WSRM meetings like all scientific congresses of this caliber, not only serves as an event to exchange scientific ideas and knowledge, but more importantly it provides the opportunity for microsurgeons and scientists to intermingle, communicate, socialize and broaden their scientific connections / collaborations. The social program should be designed to favor this with specific plans for the Opening Ceremony, Presidential Dinner, Banquet and Closing Ceremony

10- Audiovisual support
High quality audiovisual support is essential for a high caliber meeting. This will allow for good timing of presentations, without complications, and good visualization of what the speakers are trying to depict.

11- Accompanying Persons Program and Pre & Post-Congress Tours
The PCO should help propose pre & post-congress tours for delegates to select if they so choose. As many delegates come from far reaching areas of the world, this will give them the opportunity to visit and tour sites that they may not have had the chance to see in the past. Experience dictates that when the accompanying persons are occupied they are more satisfied with their stay, which makes the delegates satisfied with their overall experience at the meeting. A simple accompanying persons program can be made at relatively low cost, which will allow these guests to enjoy the local attractions, which are indeed many to choose from.

12- Abstract Book – Special Issue
One proven way to attract high quality abstract presentations is to offer the printing of an abstract book. Moreover, many young surgeons are in need to publish their abstracts. Thus, by offering an abstract book, you increase interest for submission.

In an effort to show our collective interest in planning a successful meeting on all accounts, a dozen issues and concerns have been outlined that should be considered and addressed. WSRM is calling for a more pragmatic collaboration for the good of the WSRM meetings in future host countries, with accountability and consistency from all concerned.

PN Soucacos, MD, FACS
Professor of Orthopaedics
WSRM President

Message from the Immediate Past President

Reflections on WSRM 2007-2009

Berish Strauch, M.D.
Immediate Past President, WSRM
bstrauch@montefiore.org

In looking back over the past two years, I see a series of accomplishments that we can all be proud of.

The WSRM Council has partnered with an effective management group, the Medical Association Management of Chicago, Illinois, USA. Which is a help. We have narrowed down the multiple lists and names, which previously have included the deceased and no longer interested, into a useful and workable membership list. Our membership roster is now under control, giving the society a way to reach each of its members. Our membership continues to grow, as evidenced by the recent arrival of 65 new member applications from Korea.

To assist in the communication between members and the international reconstructive microsurgery community, the Council has agreed to appoint a current WSRM member in each country to serve as a liaison. The appointed liaison will be requested to report to the membership through this newsletter, as well as back to the Council to keep our fellow members and the reconstructive community aware of international concerns, events and needs of fellow microsurgeons.

We have extended our membership benefits so that our members are richly rewarded. Current membership benefits include a membership certificate, lower registration rates and meetings, member use of the website, and a subscription for the *Journal of Reconstructive Microsurgery*. All of these benefits are available to members once they have paid their annual membership dues.

We have a fully operational and functional website (wsrm.net). Members and visitors can visit our website at any time for needed information and registration. There is a fully operational product discussion board, on which members may work with each other from multiple time zones. The website has also given us an opportunity to partner with industry in a meaningful way. The beautiful industrial banners give our members the possibility to interact with industry. Finally, the website provides a beautiful platform for our media announcements and easy meeting registration.

We have made great strides in determining the requirements that apply to the host of our meetings and the time frame in which this must be proposed and awarded. The Council has created and implemented meeting guidelines to assist the hosts and organizing committee during their planning to ensure continual communication with the Council. These requirements and guidelines will ensure a successful biennial congress both scientifically and socially. Hopefully these congresses will provide financial return to the society as well.

The WSRM is on an upward growing trend, and I have no doubt that with each member's participation and commitment along with the great leaders of this organization, we will continue to be the voice of international reconstructive microsurgery.

Membership

Utilizing your membership to its fullest!

In today's cyber communication ability, economy and the world wide community endeavors utilizing websites and social media is very important. The WSRM web site has been built to function as a networking outlet and organization communication tool. As a member, you have access to the discussion boards, online membership roster, upcoming meeting information, *WSRM Newsletter* and the ability to pay your membership dues online. We understand in the past there was some difficulty with paying dues online. We have implemented a new system that does not require you to log in to pay your dues.

What are the benefits of being a member of the WSRM? In addition to the cyber benefits noted above, each member receives reduced registration rates at society meetings, volunteer leadership opportunities, liaison with multiple organizations and network with worldwide reconstructive surgeons. NEW this year: dues paying members will receive a one-year subscription to the *Journal of Reconstructive Microsurgery* at no additional charge. To continue to receive these benefits and assist the organization and growing these benefits in the future, please keep your dues up-to-date.

As with all organizations, you as a member are very important to us and we want to be sure we are able to communicate with you effectively. Validating the membership roster is a continual process. Please take a moment and go to http://wsrm.net/images/website_roster_08.pdf to view your contact information. If this information is incorrect, please send the revised information to centraloffice@wsrm.net. We appreciate you taking the time to do this.

Know someone who wants to become a member? Application procedures have been revised and applications are now being reviewed twice a year by the membership committee, so there is no longer a wait of two years to become a member. The application process is simple, and applications can be obtained online and submitted via email, mail or fax to the Central Office.

In 2009 we welcomed 31 new members and are currently reviewing 70 for consideration for membership in the WSRM. The ability to download a membership application to provide to your colleague is available on our website. WSRM now prouds continual enrollment and new members no longer have to wait two years to become a member of the organization.

Mark Your Calendar

American Society for Reconstructive
Microsurgery Annual Meeting
January 9-12, 2010
Boca Raton, Florida
www.microsurg.org

American Society for Reconstructive
Transplantation Clinical Update
January 12, 2010
Boca Raton, Florida, USA
www.a-s-r-t.com

Egyptian Society of Plastic and
Reconstructive Surgeons Annual Meeting
February 16 – 19, 2010
Sharm Alsheikh Resort, Egypt
http://www.esprs.com/

1st European Conference in Supra Microsurgery
March 4-5, 2010
Barcelona, Spain
http://www.fdrobert.uab.es/barcelonaplasticsurgery/
Perfo2009.pdf

European Federation of Societies for Microsurgery
1st International Meeting of Microsurgical Societies
May 20 – 22, 2010
Genova, Italy
http://www.studioprogress.it/Genova2010/index.htm.

American Society for Reconstructive Transplantation
2nd Biennial Meeting
November 18 – 20, 2010
Chicago, Illinois, USA
www.a-s-r-t.com

American Society for Reconstructive Microsurgery
Annual Meeting
January 15 – 18, 2011
Cancun, Mexico
www.microsurg.org

IPRAS
May 22-27, 2011
Vancouver, British Columbia, CANADA
http://www.ipras2011vancouver.ca/

World Society for Reconstructive Microsurgery
World Congress 2011
June 29 – July 2, 2011
Helsinki, Finland
http://www.wsrm2011.org/

Executive Council

PRESIDENT
Panayotis N. Soucacos, MD, FACS
Greece
psoukakos@ath.forthnet.gr

PRESIDENT-ELECT
Kazuteru Doi, MD
Japan
k.doi@ogoridaiichi.jp

SECRETARY GENERAL
David W. Chang, MD, FACS
USA
dchang@mdanderson.org

HISTORIAN
Robert Russell, MD
USA
rrussellmd@yahoo.com

IMMEDIATE PAST-PRESIDENTS
Berish Strauch, MD
USA
bstrauch@montefiore.org

Past President
Julia Terzis, MD
USA
mrc@jkterzis.com

MEMBERS-AT-LARGE
Hung-Chi Chen, MD
Taiwan
ed10002@edah.org.tw

Isao Koshima, MD
Japan
Koushimai-pla@h.u-tokyo.ac.lp

Katerina Vlastou, MD
Greece
cv2945@otenet.gr

L. Scott Levin, MD
USA
scott.levin@uphs.upenn.edu

Alexander Georgescu, MD
Romania
geordv@hotmail.com

Season's Greetings

Season's Greetings & Warmest Wishes for the Holidays from the President, PN Soucacos, the Executive Council and Staff of the World Society for Reconstructive Microsurgery