THE AMERICAN SOCIETY RECONSTRUCTIVE MICROSURGERY

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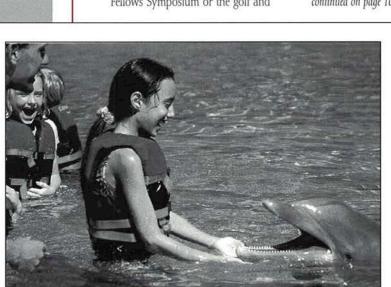
# RECONSTRUCTIVE **MICROSURGERY**

## An Invitation to the ASRM **1999 Annual Meeting**

ilauea, Madame Pele's mythical volcanic home on the south end of the big island of Hawaii, has been actively erupting for the last 15 years. Coincidentally, the American Society of Reconstructive Microsurgery has been active for an identical length of time. How appropriate then for the 1999 Annual Scientific Meeting to be held at the Hilton Waikaloa Resort on the island of Hawaii.

Once again, the ASRM will join the AAHS to host a week long extravaganza of meetings, courses, panels, invited lectureships, and fellowship in one of the most amazing resort locations in the world. Our combined meeting day will include two comprehensive panels, on surgery of the thumb and peripheral nerve disorders, featuring experts from around the world. Our first combined AAHS/ASRM Scientific Lecturer will be Fu-Chan Wei, MD and the President's Invited Speaker will be the extraordinary scientist-astronaut Story Musgrave. Your choice of the Residents and

continued on page 10 Fellows Symposium or the golf and



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List of **Distinguished Speakers** 

Story Musgrave, MD scientist-astronaut (NASA)

Fu-Chan Wei, MD internationally acclaimed reconstructive microsurgeon

Hanno Millesi, MD pioneer in peripheral nerve surgery

Julia Terzis, MD ASRM founding member

Phillip Blondeel, MD sixth annual Godina lecturer

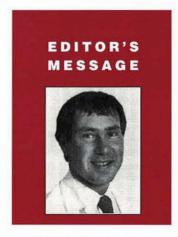
## The Internet—Its Influence on Society

t was an early July morning and we were loading our canoe in the beckoning lake. The three professionals, only myself in medicine, were off to the wilds of northern Ontario seeking the meaning of life. We could have rented the movie, but this would be more fun. I asked my two buddies what influence they felt the internet had on our complex society. As we paddled down the pristine lake, we decided that we would each contemplate the effects of the internet and we would discuss it at the campfire in a day or two. We reached the first portage, unloaded the canoe, swore at the bugs and trudged onward into the forest, the internet at this point being far from our minds.

A couple of days later, during dinner which usually lasted about three hours, the subject came up. My canoeing pals were both avid users of the internet and offered these thoughts. Paul was very positive. It was a source of information never before so accessible. After all, this is how we got the map to our out of the way canoe route. It is a source of consultation for problems ranging from printer malfunction to little known medical conditions. We can do our own personal research, find others with common interests to chat with, and it can even serve as a crowdless, easy to access grand shopping mall. Paul was convincing, but the discussion had to wait for a quick thunderstorm during which we scrambled into the tent. Just before our dinner resumed, there was a huge noise from the marshes nearby. As I looked over, a female moose and her cub had come out of the woods for a brief look around and a snack on the fresh lily pads. As they retreated to the woods I reflected on the beauty of moment and could not help but think how superfluous our internet discussion was. At any rate it continued and now it was Gerry's turn.

Although he was a regular user, he felt it had very few positive influences and in fact produced many negatives. The most blatant issue lies in its impersonal nature.

Interpersonal communication has been minimized and face-to-face discussion is no longer needed to access the information



Ronald M. Zuker, MD

As surgeons we must be truthful, totally honest and upfront in our advertisements, our statements about medical advances and capabilities, and how our own society can play a role in microsurgical education.

one seeks. As a result, we have trouble deciding what is reality and what is hype. We have all been misled by false advertisement, but rarely do we make an error in a personalized one-on-one purchase. We can accept information from colleagues, friends, and relatives with much more assuredness than from the impersonal, supposedly objective, internet. Would we purchase a book from the internet or would we rather go to the bookstore, discuss it with a knowledgeable salesperson and come away happy? We are easily fooled by altered photographs, inaccurate descriptions, and well placed omissions. They may not be frank lies, but the alterations of reality are

multiple. Not quite so with the personal visit. Is this lack of personal touch affecting our society in other ways? Some would say "unquestionably yes" and some would even rank it number one in the cause for "The fall of the western world: 1970-2040". So, although the internet provides information, it may not be easy to find, may not be truthful and fosters an impersonal, cold, calculating society where feelings and relationships have a diminished value. The chat rooms are sites of intimidation, mockery, sexual advances and even marriage proposal. How much interpersonal crime has stemmed from internet contacts?

After dinner we washed our dishes at the edge of the lake. The left over Red River cereal from breakfast and beans from dinner spread over the underwater rock

continued on page 7

#### RECONSTRUCTIVE MICROSURGERY

The mission of the American Society for Reconstructive Microsurgery is to promote, encourage, foster and advance the art and science of reconstructive micro-neurovascular surgery; and to establish a forum for teaching, research and free discussion of reconstructive microsurgical methods and principles among members.

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David T. W. Chiu, MD

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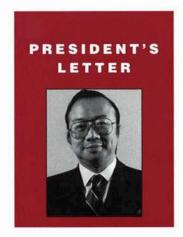
## **Reaching Out on Behalf of Our Patients**

ear Fellow Members: I hope this message finds you rejuvenated after a restful summer.

In the last message, I examined with you the importance of collaboration among our members. In this issue I would like to explore with you the importance of reaching out to our colleagues beyond our own field of specialty and our colleagues in primary care, at the local, state, and national level.

After decades of relentless subspecialization in medical practice, the power-base of American organized medicine is decentralized to the point of fragmentation. Over the last decade, the arbitrary separation of the physicians into a primary care group versus a specialist group further erodes the cohesiveness of all physicians. Building on the widening schism among physicians is the power of the medical middlemen. Using the bottom-line as an excuse and budget mutual policy as a weapon, such middlemen not only drain valuable resources from the health care delivery system, but also take away from our patients the freedom of choice of physicians. While attending a leadership conference conducted at the Medical Society of the State of New York, I sensed a pervasive concern and keen realization that it is high time for all of us to bury all our differences. It is our patients and us against the profiteer. We must fight to protect the wellbeing of our patients. We must fight to regain the reign of our destiny.

I urge you to get involved if you have not done so with the local, county, state, and national medical societies. Be proactive, so that you, too, can help to shape the agenda and you, too, can participate in selecting the direction of organized medicine in America. An emerging paradigm shift worthy of our investigation and potentially of our support is the medical insurance account concept (MIA). Such a system has two essential features, namely a tax deduction for savings deposited in an account designed for medical expenses, and secondly, a high deductible health insurance policy. The likely benefits of this system when perfected is the return of freedom of choice to the people. This sys-



David T. W. Chiu, MD

It is high time for all of us to bury all our differences. It is our patients and us against the profiteer.

tem is incorporated in the Medicare+Choice program as appeared in the Health Care Financing Administration (HCFA) interim final rule. I urge you to explore this with your local medical society leaders.

Another form of outreaching towards other specialties is to learn their challenges, to understand their reconstruction objectives, and to impart our skill, so that we can help to expand their reconstructive envelope. Such outreach should not only be limited to our colleagues in clinical practice, but also to our colleagues in basic science research. In the time of research budget contraction, small animal models take on a greater and greater role. A case in point, microsurgical heart-lung transplantation using rodents as a model has been very useful in deriving important physiological data in transplantation. To participate in the grand round or conferences of other specialties is to extend our roots. Like a tree in a forest, it is the tree that has the most extensive root system that stands the longest.

The great principle of learning, which is one of the pillars of Confucianism, is to enlighten oneself, to enlighten the people around you, and to rest only in perfection. It denotes the importance of a continuous cycle of learning and sharing. As long as one is prepared to share the metabolized knowledge, one has earned the right to learn from others.

In the spirit of learning and sharing, we hold our annual Scientific Meeting. This year our Scientific Committee under the leadership of Dr. Randy Sherman has worked hard to formulate an excellent program. We are most fortunate to have a list of distinguished invited speakers: Dr. Story Musgrave, the legendary scientist and astronaut, will be the president's invited speaker; Dr. Fu-Chan Wei will be our first AAHS/ASRM scientific lecturer; our own Dr. Julia Terzis will give the Founder's lecture; Dr. Hanno Millesi, the senior statesman in microneural surgery will present a historical review on microsurgery; and Dr. Phillip Blondeel will give the Godina lecture.

I hope you all have made plans to bring your family to attend our 1999 meeting on the beautiful Big Island of Hawaii. **RM** 

## Call for Nominations

ominating Committee Chairman William Swartz, MD is requesting nominations for ASRM officer positions for 1999-2000. ASRM members are encouraged to forward names for consideration for the following positions:

Vice President Secretary

Mamban at L

Member at Large (2 positions open)

The deadline for nominations is October 16, 1998. Please send a letter or fax to:

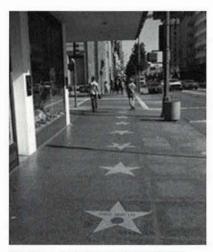
William Swartz, MD 5750 Centre Avenue Suite 180 Pittsburgh, PA 15206-3761 Phone: (412) 661-5380 Fax: (412) 661-5381

# International Society Comes to the US to Chart the Future of Microsurgery

he 13th Symposium of the International Society of Reconstructive Microsurgery (ISRM) will be held in Los Angeles at the Century Plaza Hotel, June 22-26, 1999. The symposium will celebrate three decades of advances and chart the future of microsurgery for the twentieth century.

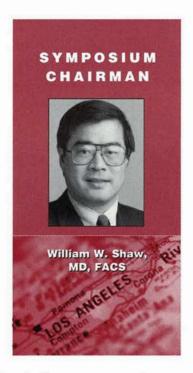
This premier organization was founded in 1972 in Vienna in the early days of microsurgery by the original giants in our specialty, Drs. Harry Buncke, Hanno Mellisi, Bernie O'Brien, Susumu Tami, Kiyonori Warii, Berish Strauch, Ian Taylor, and others from all over the world.

Every two years, this small group of about 300 surgeons meets for four days of intense scientific and social exchanges which set the pace and direction for microsurgery developments around the world. The organizers of the syposium hope to have more than 500 attendees for the gathering in Los Angeles.



Visitors can track down their favorite screen legends on Hollywood's Walk of Fame.

In the past, lively discussion on anatomy, instrumentation, physiology, surgical techniques, applications and nomenclatures have known no boundaries, flying across continents and accents unimpeded. Members have brought binders full of slides and added impromptu comments



from the floor using corner projector screens provided. Heated exchanges would often continue after the sessions and through the evening into the wee hours of the morning. Looking back, the vision and unselfish efforts of these early pioneers were unquestionably largely responsible for the birth, early development and current prominence of microsurgery as we know it.

The ISRM meetings have traditionally rotated around the world in places such as Singapore, Vienna, Munich, Mt. Fuji, San Paolo, Paris and Melbourne/Sydney. It was last in the US in 1983 in New York, hosted by Berish Strauch, and prior to that in 1978 in San Francisco, hosted by Harry Buncke. The 1999 symposium will be hosted by Bill Shaw and the UCLA Division of Plastic and Reconstructive Surgery. The past symposia were closed meetings for members and invited guests only. For the 1999 symposia in Los Angeles, however, all members of ASRM are invited. This would be a great opportunity for many younger American surgeons to be exposed to this international society and its members. Also, most likely, the 1999 symposium would be the first combined meeting of the ISRM and the International Microsurgery

Society (IMS). The two societies are in the final stages of becoming permanently merged. Finally, this meeting will be preceded and enhanced by the Annual Meeting of the American Society of Peripheral Nerve (June 19-21) and a one day Brachial Plexus Syposium sponsored by the American Association for Hand Surgery, both hosted by Dr. Sal Shenaq. This promises to be an incredibly exciting week of microsurgery!

As the 1999 symposium is the last meeting of this group in the 20th century, the theme is to summarize the major advances of the first three decades and to identify likely developments in the future. Dr. Neil Jones, the Scientific Program Chairman, will be working closely with an international panel of leading microsurgeons to put together a most innovative program to achieve these goals. In addition to the usual abstracts, an active effort is being made to try to paint the entire landscape of microsurgery by early assignment of moderators who will participate in the development of the final program. In each of the areas, 3-5 additional surgeons will be asked to network with the moderator to identify new topics and participants. The final product will be a dynamic hybrid of panel, short presentations, and floor discussions. The role of technology will be emphasized. A large number of exhibitors have already signed up and will be providing short hands-on demonstrations or workshops. Computer video presentations will be available. Some form of CD recording of the symposium is being considered.

Announcements will be sent out in September 1998. The abstract deadline is March 15, 1999. For information or suggestions regarding the scientific program, please contact Neil Jones or Bill Shaw at UCLA Division of Plastic and Reconstructive Surgery at (310) 825-5582, fax (310) 206-3647. Karen Gabriel is the conference coordinator and can be reached at (702) 883-7470, fax (702) 885-8865. **RM** 

William W. Shaw, MD, FACS Symposium Chairman

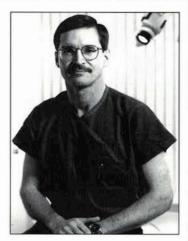
# INNOVATIVE MICROSURGEON

# An Approach to Revascularizing the Diabetic Patient

By Joseph C. Banis, Jr., MD, FACS

wenty-five years is my personal perspective. Depending on many relative factors, this is a long period of time, or indeed may be viewed as a short period of time. When looking at the history of vascular surgery, this might be viewed in equally ambiguous terms, as we consider that we have only been doing major vascular surgery on a widespread basis (and certainly in elective conditions) for about twice that initially referenced 25 years, and it has been less than 100 years since Alexis Carrell scientifically "fathered" the concept and specialty of vascular surgery. And in what to me has seemed a relatively "short" 25 years of learning and practicing surgery, I have been fortunate to see and participate in the major, indeed revolutionary advances made possible through the use of microsurgical techniques. I would like to share some of my perspectives and thoughts regarding future directions, with particular reference to the areas of my own involvement.

Early in my surgical training, possibly about the third year residency level, I was on the vascular service and confronted with the distinctly unpleasant dilemma that faces physicians with regard to the ischemic limb issue in diabetic patients. These unfortunate individuals are faced with every possible risk factor and inhibitor to good foot health-anesthesia, dry skin and skin cracking, excessive callous formation leading to areas of pressure ulceration, and—to compound it all—the most virulent and aggressive form of arteriosclerosis and decreased vascularity to the foot. It became very clear to me that several issues were in play in this regard: one, these patients presented with live feet, albeit diseased, damaged, ulcerated, and poorly perfused, and therefore some blood was getting through, even though not enough; two, radiologic techniques were not adequate for satisfactory, accurate, and reliable visualization of the vessels below the knee and into the foot, therefore making preoperative planning for vascular reconstruction almost impossible; and three, even if diagnostic techniques were adequate for pre-operative planning, our



Joseph C. Banis, Jr., MD

We have found
that even the ability to
get out of bed with
help, stand, and pivot
into a waiting
wheelchair... is a useful
functional reconstruction, if this allows
the patient to be cared
for at home and avoid
institutional care.

technical expertise in dealing with tiny (less that 1.5 mm internal luminal diameter), heavily calcified, friable, and delicate vessels was essentially non-existent. The images of amputated limbs under these circumstances never left me as I proceeded to pursue a career in plastic and reconstructive surgery. I had always remembered limb salvage as a reconstructive challenge that I considered of the highest order and magnitude, and which certainly would affect and benefit an extremely broad population of patients.

In 1982, one of my early years in practice, I was presented with patients in referral who were suffering from intractable ulcerations of the lower extremity which were clearly of an ischemic origin (possibly complicated by other factors), and who had been deemed "unreconstructable" by their vascular surgeons. Upon work-up these patients were noted to have, in at least most incidences, identifiable vessels in the distal third leg and foot which could be potentially considered as recipient outflow vessels for vascular reconstruction, notwithstanding the fact that they were small and diseased. Given the types of vessels with which we had become used to working with for general microsurgical reconstruction in extremities as well as other areas of the body, the challenge of revascularizing these admittedly small and severely damaged vessels did not seem insurmountable. It appeared obvious that if indeed these limbs were destined to be successfully revascularized, microsurgical techniques were the only legitimate option available that could conceivably achieve this end in a reliable fashion.

It was soon recognized that a major challenge with these patients was not only the technical aspect of achieving a satisfactory and functional vascular reconstruction in the face of severe pathophysiology in the vessels themselves, but even more concerning, that of performing a major operation in a patient who was severely compromised by multiple co-morbid factors. To this end a major emphasis was placed on medical-physiological work-up, with a particular emphasis on evaluation of cardiac, cerebrovascular, pulmonary, and renal function. At that time the term "microsurgical" carried with it the stigmata of long operations, sometimes being carried out in the face of seemingly insurmountable obstacles and sometimes coming to futile end. In these patients, a simple amputation was viewed as 1) expectable, 2) reliable, and 3) of moderate expectable morbidity, and low mortality for the patients. It was clear that any long term effort at microsurgical attempts at limb sal-

continued on page 6

## **Innovative Microsurgeon**

continued from page 5

vage would have to be 1) of predictable high success, 2) have a low or acceptable morbidity, and 3) have a minimal mortality rate associated with them.

Additionally, we recognized that certain of these patients with severe ulcerations in the distal third of the leg and foot would not only require revascularization, but would also require free flap reconstruction. This further emphasized the need for thorough medical work-up and follow through during the hospitalization and convalescence. The last component of patient evaluation is in reference to the ultimate rehabilitation potential of the patient, as there is no point in doing major limb salvage if there is little prospect for utility in the long-term. This having been said, "utility" is a relative term also, and we have found that even the ability to get out of bed with help, stand, and pivot into a waiting wheelchair on a single functional leg with a transmetatarsal amputation is a useful functional reconstruction, if this allows the patient to be cared for at home and avoid institutional care. This approach has been borne out on multiple occasions with definitely beneficial psychologic effects (patient is kept more active, mobile, alert), physiologic benefit (patient is able to keep from being institutionalized, is able to live with his or her family, and continues to have an enthusiasm for life), and financial benefit (patient is cared for at home with significantly less cost than institutional care would involve). Several brief case illustrations serve to illustrate the point.

## **CASE STUDIES**

#### Case One

A 71 year old insulin dependent diabetic man presented with necrotic tissue overlying his left tendoachilles developed after using new foot wear. He was referred by a vascular surgeon for limb salvage, with no revascularization being deemed possible by standard techniques. Pre-operative angiographic work-up identified severe tibial-peroneal occlusive disease, with essentially no satisfactory vessels identified in the below knee area. Following appropriate

medical work-up the patient underwent exploration and an on-table angiogram, identifying a very small posterior tibial artery, to which revascularization was attempted. A reverse saphenous vein bypass graft was carried out, with microsurgical technique and magnification, to a 1 millimeter (internal diameter) heavily calcified posterior tibial artery. This was successful, and two weeks later the area of necrosis was resected and reconstructed with a scapular free flap. He healed satisfactory, lived vigorously and in an independent fashion, and presented five years later with a necrotic right great toe. Similar microsurgical revascularization was carried out on the right lower extremity, followed by amputation of the necrotic right great toe, and an unremarkable course of healing. He continued to live independently with no further foot problems until his death six years following his second opera-

#### **Case Two**

A 28 year old Caucasian male juvenile onset insulin dependent diabetic presented with ischemic necrosis of his right great

Ultimate vascular reconstruction was able to be accomplished by means of a femoral to posterior tibial artery bypass graft.

toe. He had also undergone prior renal transplantation and was chronically immunosuppressed. Vascular work-up showed severe tibial-peroneal occlusive and calcific disease into the foot. Ultimate vascular reconstruction was able to be accomplished by means of a femoral to posterior tibial artery bypass graft (at the level of bifurcation into the medial and lat-

Ten years later [the patient] remains with biped ambulation, moderate degree of sports and physical activity, and is fully employed as a teacher.

eral plantar arteries). The internal luminal diameter at the site of the distal anastomosis was approximately 1 mm, with severe calcific disease necessitating "cracking" of the calcified vessel prior to performing an arteriotomy. Satisfactory re-perfusion was achieved, resulting in the ability to heal a right first toe amputation site successfully. Six months later he required a similar procedure on the left side, but which appeared to require revascularization only to the distal leg. This was then followed by an across-ankle bypass to the dorsalis pedis artery due to persistent poor perfusion of the forefoot. He has required interval coronary artery bypass graft surgery. Ten years later he remains with biped ambulation, moderate degree of sports and physical activity, and is fully employed as a teacher.

#### **Case Three**

A 63 year old male insulin dependent diabetic had severe rest pain in his right foot along with chronic non-healing toe ulcerations. Numerous consultations and evaluations, including vascular surgical work-up at an internationally renowned multi-speciality clinic offered no hope of vascular reconstruction. In fact, notwithstanding his severe and debilitating rest pain, it was recommended that he "go home and exercise" as there was deemed nothing else that could be done. (I might add, particularly in these days of so called "managed" care, that this same consultation documented severe hypertension, and a large thoracic aneurysm for which no medical or surgical treatment was recommended. One must certainly wonder how well and to whose

benefit the care of these particular problems is being "managed".) This gentleman was a farmer, and could not attend to the needs of his farm, much less maintain an exercise program to induce collateral blood supply. Examination documented severe tibial-peroneal occlusive disease bilaterally, with rest pain and ulcerations of the right forefoot and toes. Work-up also documented critical coronary artery disease, as well as the thoracic aneurysm. A course of elective attack on all of these problems in a programmed fashion was carried out, with a "cut loss" approach if any major problems developed. He underwent, in sequential order, a quadruple coronary artery bypass graft, right lower leg microsurgical distal revascularization (resulting in complete salvage of the foot, relief of rest pain, and healing of his ulcerations), thoracic aneurysmectomy, and finally microsurgical revascularization of his left foot for similar problems as his right, although at an earlier stage. All procedures healed uneventfully. He remains alive and well, and continues to farm, having now survived his previously healthy wife who developed breast cancer and succumbed to her disease.

### SUMMARY

Case studies such as the above abound, and clearly document the beneficial affects of aggressive microsurgical approaches to limb salvage for chronic vascular occlusive disease. As microsurgical reconstructive specialists, we have developed the finesse, an impressive array of techniques and procedures, and adequate numbers of well trained surgeons to afford these complex reconstructions to essentially all patients in need of them. Several thought provoking issues come to mind, however. 1) Do plastic surgeons (microvascular reconstructive surgeons) really consider limb salvage from chronic vascular disease to be within their interest or purview? 2) How do those of us with interest in this area have patients gain access to our services? 3) Can the necessary collaborations be developed with the vascular surgeons for the appropriate team management of these patients? 4) How can a surgeon, vascular or microsurgical-reconstructive, rationalize the

heavy demands required to take care of these patients with multiple major problems (including work-up time and effort, staff time and overhead, and reimbursement for the significant operative time required) when such a financially attractive alternative such as amputation is available.

It is not at all clear that the benefits of these procedures... can be justified on a strict cost analysis basis alone.

Clearly a large amount of the benefits obtained are related to quality of life.

It is not at all clear that the benefits of these procedures, notwithstanding nursing home costs, can be justified on a strict cost analysis basis alone. Clearly, a large amount of the benefits obtained are related to quality of life.

It is apparent that many of our colleagues have chosen to investigate and pursue this arena of reconstruction, and I can personally attest to the great need for reconstructive surgeons involvement in these problems, as well as to the great satisfaction in taking care of these patients. We, as microsurgical reconstructive surgeons, need to be involved in this arena of patient care, due to the critical skills and techniques we can offer in their care. I do not foresee this disease process to be diminishing, and believe it represents a great opportunity to improve care in a challenging arena. **RM** 

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1. A Rational Approach to Ischemic and Ischemic-Diabetic Foot Reconstruction – Joseph C. Banis, Jr., MD, John W. Derr, Jr., MD and J. David Richardson, MD. Operative Techniques in Plastic and Reconstructive Surgery Volume IV, No. 4, (November) 1997, pages 217-235.

## **Editor's Letter**

continued from page 7

formations. Fish came out to check it out and have a bite. It was an actual dinner however, for a huge snapping turtle that ate in an incredibly relaxed and gracious fashion. As his snout came out of the water, his eyes focused on me and my camera. He took a breath, winked at the camera and resumed dinner totally unconcerned with my presence. By sundown the rocks would be clean again.

The three of us then sat back around the fire to try to sort out the internet dilemma. The full moon rising in the south east provided the light that the beautiful sunset in the west would take away. The loons were screaming and flapping around their lake. They take personal ownership and responsibility for each of the thousands of lakes in this area. Their sound is as much a part of this environment as the lake itself. We were comforted to hear their familiar, all powerful, and uplifting melody.

In this majestic setting nature's relationships has thus far remained in control. They know of no internet. We decided that there are huge plusses and huge negatives to internet use. But just as nature is a reality, so is the internet. It is not the system itself that is good or bad, but rather those who control it and those who use it. They can make it effective, meaningful and helpful or destructive, useless and dangerous. It is a reflection of our human society. Let's use it in a positive fashion. As surgeons we must be truthful, totally honest and upfront in our advertisements, our statements about medical advances and capabilities, and how our own society can play a role in microsurgical education. The internet is then a tool of man and not the controller of communication.

The problem resolved, we watched the full moon roll by overhead. We left our campsite in perfect condition-clean, no garbage, fireplace well set up and wood for the next adventurers. Whoever comes will be welcome. So should the internet welcome its adventurers. It should be clean, without garbage and provide the tools we need to forge ahead in our complex, entangled lives. **RM** 

## MICROSURGERY OVERSEAS

## **Microsurgery in Turkey**

By Mustafa R. Ozbek, MD and Ibrahim Askar, MD

he present situation of microsurgical procedures is at stake. Almost all of university hospitals, except for the new ones, and some of the state hospitals approve microsurgical procedures. In medical centers, most of insurance companies tried to approve microsurgical procedures, especially in cases of which these procedures have previously been performed. The following article tries to answer the question for Turkey with respect to the history and advancement of microsurgery. To understand the presence of microsurgery in Turkey, it is essential to have a closer look at history.

Ayan Gülgönen et al. first replanted the fifth finger of a dentist in 1978, in Istanbul. The same author performed toe-to-thumb transfer the same year. Later on, Gülhane Military Hospital had pioneered microsurgical procedures. They performed free flap surgery in missile traumas, and traffic accidents. And, microsurgical operations have

Microsurgical procedures are also performed by specialists in Maxillofacial Surgery, ENT, and Orthopaedic Surgery. The spectrum of operations is comparable to that in other worlds. Eighty-two percent of all microsurgical operations are performed in university hospitals, 11% in social security hospitals, 6% in state hospitals, and the rest in private centers. Forty

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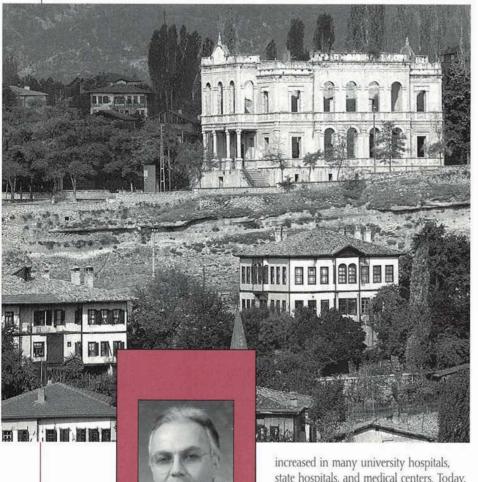
rest in private centers.

percent of microsurgical operations performed are replantation, and 60% free flap surgery in reconstruction of any defect. Twenty-five percent of all replantation cases have history of traffic accident on highway, 70% history of occupational accidents, and 5% history of other histories (home accidents, etc.). Seventy-one percent of all free flap cases are performed in reconstruction of defects due to resection

In Turkey, advancement in microsurgery depends on health insurance and social security systems. Actually, the basic principle of the system is to provide optimal care to all citizens at affordable costs. The patient population can be divided into two groups which are separated by the

of tumor lesion, 22% due to trauma, and

7% due to congenital anomalies.



Mustafa R. Ozbek, MD

increased in many university hospitals, state hospitals, and medical centers. Today, in Istanbul, Ankara, Izmir, Adana, Bursa, Samsun, Kayseri, Konya, Trabzon, etc, in university and state hospitals, microsurgical operations have been performed. These centers have experienced and skillful teams in microsurgery.

level of income and their occupation. State employees are automatically insured in state insurance organizations. The premiums are equally shared between employee and employer and are automatically deducted from the salary and transferred to the insurance agency. This was introduced about 60 years ago and the employers are required by law to pay 50% of the insurance premiums. This group of patients compromise approximately 96% of all patients. They have only state hospitals and university hospitals, and they can not go to private medical centers unless the state insurance organization sends the patient to these medical centers. They are not on a fee for service basis. All family members are included in the policy. In medical centers, a patient pays for the service and takes his money from the insurance organization. Major surgery on these patients is still performed by senior staff members or the division chief, so that optimal care is guaranteed.

Freed from the state insurance systems are people who earn money in their own work, or private factories, or stores, etc. or all people working in a free enterprise including employees, employers, and trades. They will be billed in private practice as well as in hospital and later reimbursed by their insurance carriers Currently, state insurance organizations and more than 30 insurance companies compete for this group comprising 100% of all patients. This group has a free choice of doctors in private practice and are seen at the hospital only by senior staff division chiefs. The main disadvantage of private insurance companies is that they limit the amount of money which they pay back.

In the case of an occupational accident of an employee, insurance organizations approve a "fee for service" in private practice. The average cost for a flap after trauma in this group, including early inpatient rehabilitation, is approximately \$5,000-8,000 compared to \$18,000 in Germany and \$25,000-50,000 in the U.S.

There is a distinct difference between private practice and hospitals in our system (Fig. 1). Private practice is mostly limited to conservative treatment or minor surgery in outpatient or day care facilities. Major surgery is almost exclusively performed in hospital divisions. Operative privileges for private practitioners are usually restricted to regional state hospitals or university hospitals. Hospital doctors can only work on a referral basis for the "public" patients and they are not allowed to bill them. They are allowed to see "private" patients, directly without any referral. It becomes clear that this patient group is lucrative for private practitioners and hospital doctors and they compete for these patients, especially in minor surgical pro-

Since the cost of a hospital bed/day with all services provided is still signifi-

cantly lower than in the U.S. and Germany (approximately \$50-150), it becomes clear that operations such as free tissue transfers require a longer

hospital stay compared to the U.S. and a shorter hospital stay compared to Germany. Ninety-eight percent of the free flaps performed in our clinics are "free" for the patient. The average cost for a flap after trauma in this group, including early inpatient rehabilitation, is approximately \$5,000–8,000 compared to \$18,000 in Germany and \$25,000–50,000 in the U.S. The surgical fees for a microvascular tissue

Group I	
Interval Trauma - Free Flap	3.1 Days
Revisions	21%
Flap Loss	6%
Consecutive bone corrections	32%
Treatment costs	\$9,000

Figure 2

Group II	
Interval 27.2 Days	5
OPs prior to flap	2.9
Revisions	19%
Flap loss	8%
Treatment costs	\$12,000
Consecutive bone corrections	52%

## Figure 3

transfer for a private patient is between \$1,000–5,000. In this small patient group we presently fight a similar "war" as other colleagues.

To date, obtaining insurance coverage for microsurgical procedures has not been a problem. Especially, the private insurance companies approve payment only to a certain amount, and the rest of the bill is paid by the patient and family. The costbenefit ratio in lower leg trauma, upper extremity trauma, replantation, and revascularization determined the socio-economic impact of complex microsurgical procedures and our position.

The results of the study of complex lower extremity defects are presented in Figures 2 and 3. The treatment cost of delayed reconstruction are more than that of the early reconstruction group.

	REFERRAL STRUCTURE		
Step I	Step II	Step III	
State	Regional State	Larger State	
Hospital or	Hospital or Regional	Hospital or Other	
Medical	University Hosptial or	University Hospital	
Center	Medical Center	or Medical Center	

Figure 1

continued on page 10

## Microsurgery in **Turkey**

continued from page 9

Striking results could be shown in microsurgical procedures in the upper extremity. The overall costs for a flap transfer averaged \$17,700. In more than 80% of the patients a reduction of the disability rating of at least 14% (\$1,510/year) was achieved (Fig. 4).

These data are preliminary, and "outcome scores" were not included in the

## Microsurgery-Upper **Extremity**

Free Flaps in Trauma

Age	34 years
Interval Trauma - Flap	3 days
Number of Flaps	24
Treatment Costs	\$9,400
Compensation	\$8,300
Total	\$17,700

#### Figure 4

analysis. Further prospective studies including overall costs of medical care and rehabilitation are necessary. It is concluded that an advanced microsurgical procedure improves the functional and aesthetic outcome, increases patient satisfaction, and is highly cost effective at the same time.

We believe that advancement and superior results will go on with better studies, and that these types of studies will obtain the data which demonstrate the superior results achieved with microsurgery. RM

RM editorial staff wishes to express its thanks for this insightful look into the state of microsurgery and the insurance reimbursement practices that exist in Turkey today. Corresponding ASRM member Mustafa R. Ozbek, MD and Ibrahim Askar, MD are members of the microsurgical staff at Ankara University, Medical School, Department of Plastic and Reconstructive Surgery, Ankara, Turkey.

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## **ASRM Annual Meeting Preview**

continued from page 1

tennis tournaments will complete your options for the afternoon.

To accommodate the large number of excellent abstracts submitted this year, we

> Bring your family for what should be a most memorable affair.

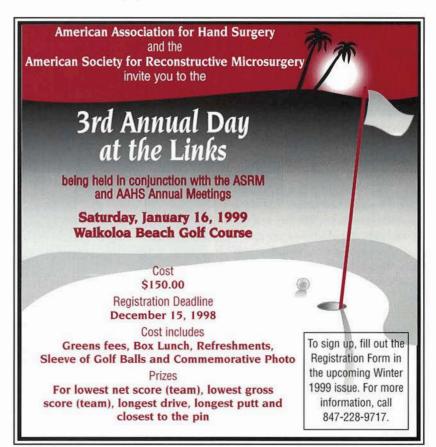
will be introducing a new format to the scientific program. On Monday morning, parallel sessions will provide participants options between head and neck reconstruction or research topics. Invited speakers include Dr. Julia Terzis as the Founder's Lecturer, Dr. Phillip Blondeel giving the Godina Lecture and Dr. Hanno Millesi presenting a fascinating historical overview on reconstructive microsurgery.

Rivaling the spectacular program is the extraordinary surroundings of the Kona Coast of Hawaii. Golf, tennis, scuba diving, sailing, swimming with dolphins, helicopter tours of the volcano and more will be at your doorstep. So, too, will be a ferry boat and tram to whisk you between buildings at the fabulous Hilton Waikaloa Resort. It should be our best gathering to date, so reserve the dates January 15-19, 1999 and bring your family for what should be a most memorable affair. RM

Randy Sherman, MD

## Coming next issue...

- □ Program at a Glance
- Meeting Highlights
- □ Golf Tournament **Registration Form**



#### **VIDEO REVIEWS**

By Keith E. Brandt, MD



# Fundamental Techniques of Microvascular Surgery

**Author:** Frederick Hansen, MD **Intended Audience:** 

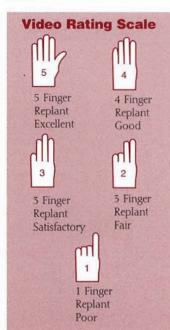
Surgical residents and staff requiring basic training in microsurgical skills. Great microsurgery skills lab tape.

**Length:** 25 minutes **Rating:** 5 fingers

**Summary:** Dr. Hansen has created an excellent tape for teaching microsurgery skills in the laboratory. The tape describes the basics needed for setting up a microsurgery skills laboratory including; instruments, materials and animals. After describing practice sessions utilizing a surgeons glove the tape then moves on to live animal sessions using the rat model.

Animal sessions include techniques for positioning the animal, hydraulic dissection and removal of adventitial tissue. Actual vessel anastomosis sessions include quadrangulation and triangulation techniques, suture placement, knot tying and patensy tests. End-to-end, end-to-side and vein graft techniques are clearly demonstrated.

This tape is a must for any microsurgical skills laboratory. The video pictures are very clear and have the proper magnification. The narration is professional and filled with pearls for performing a patent anastomosis.



## Presentation Matters





Basic Considerations for Peripheral Nerve and Grafting

Author: Hanno Millesi, MD

**Intended Audience:** Advanced microsurgeons with a special interest in nerve repair.

Length: 30 minutes

**Rating:** Content-5 fingers Presentation-2 fingers

**Summary:** The material presented in this tape could fill multiple chapters in a book on peripheral nerve surgery. Dr. Millesi, a well recognized expert, gives a succinct presentation of the current trends in the field of peripheral nerve surgery. The presentation covers peripheral nerve anatomy, physiology, regeneration, injury classification and injury management. He discusses the current concepts regarding the management of in-continuity peripheral nerve injuries, including; epineurectomy, partial excision and complete excision with primary repair or nerve grafting. There is considerable discussion regarding the recommended use of epineural, fascicular and grouped fascicular repairs. The use of free nerve grafts versus vascularized nerve grafts is also addressed. The tape gets a little tedious describing the different types of nerve grafts but provides useful information about the harvesting and technique of nerve grafting.

This tape, produced by the American Society for Surgery of the Hand, is essentially a slide lecture on peripheral nerve surgery converted to video. There is essentially no live video and most of the tape consists of a series of still drawings or micrographs and printed slides. The printed slides use small type and are hard to read. The drawings, while very appropriate to the subject matter presented, would have benefited from better labeling. If you are looking for information regarding advanced techniques in peripheral nerve surgery, this tape is packed full. If you have only a fleeting interest in peripheral nerve surgery, you'll be bored. RM



## ASRM Microsurgery Calendar

### January 1999 15th ASRM Annual Meeting

Hilton Waikoloa Village Waikoloa, Hawaii Contact: ASRM (847) 228-9717

### June 21–22, 1999 Brachial Plexus Symposium: Obstetrical and Adult

Century Plaza Hotel Los Angeles, CA Sponsored by AAHS Endorsed by ASRM (847) 228-9758

#### June 22-26 1999 13th Symposium ISRM Meeting

Century Plaza Hotel Los Angeles, CA Contact: Karen Gabriel (702) 883-7470

June 27–July 2, 1999
International Confederation
of Plastic Reconstructive
and Aesthetic Surgeons
(IPRAS)

San Francisco, CA (847) 228-3340

January 8-11, 2000 16th ASRM Annual Meeting

> Loews Miami Beach Miami, FL

January 13-16, 2001 17th ASRM Annual Meeting

> Loews Coronado Island Coronado, CA

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## Inside this issue:

Invitation to the Annual Meeting	1
Editor's Letter: Use of the Internet	2
ISRM Comes to the US	4
NEW! Innovative Microsurgeon: Joseph Banis on Revascularizing Limbs in the Diabetic Patient	5
Microsurgery Overseas: Turkey	8
Video Reviews	11

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