

# HAND SURGERY

## QUARTERLY



### FROM THE PRESIDENT

## The State of the Association



ALAN E. FREELAND,  
MD

Following the American Association for Hand Surgery Mid-Year Meeting of the Board of Directors in Chicago, from July 12-14, I am pleased to relate to you that our activities for 2002 are on course on all fronts. I would like to thank the leadership, our Executive Director and her staff, the Hand Education Foundation, and our membership for their substantial and vital efforts in this regard.

Our Annual Meeting is our marquee event. Last year's event in Cancun was a huge success academically, socially, and financially. Bob Buchanan, our immediate past President, Miguel Saldana, 2002 Program Chairman and his committee, and all who attended and supported this meeting deserve heartfelt congratulations. Laura Downes Leeper, CAE, and her entire Chicago administrative staff worked tirelessly and with great skill and dedication to achieve this accomplishment.

Will Geissler, AAHS Program Chairman, and Hand Therapy Specialty Day Chairpersons, Lee Osterman and Lynn Bassini have

completed the 2003 Annual Meeting Programs for Kauai, Hawaii. Both programs will be "bell ringers." Seventy-five free papers and 10 Resident and Fellows papers have been selected for presentation.

"Orthopedics," the blue journal, will publish the abstracts in December, 2002. Instructional Courses have been expanded and there will be no additional charge for these courses this year. New interactive surgical "Ask the Doctor" demonstration courses will be featured, plus cutting edge seminars. Dennis Phelps, President-Elect of the American Society for Surgery of the Hand (ASSH), has been invited to attend and to speak. Art Rettig, Indianapolis Colt Team Physician and Honorary AAHS member, will be the Presidential Guest Speaker and will regale us with his presentation on "Hand Injuries in the NFL." Peter Weiss, a member of the ASSH Board of Councilors and Editor of the new and highly successful *Journal of the ASSH*, will speak on "Innovation in Hand Surgery" and on "Hands on Coins." Antonio DeSantolo, Founding Member and past President of the Venezuelan Hand Society, Editor of the *Venezuelan Journal of Hand Surgery*, and Honorary AAHS member was

the winner of last year's AAHS International Hand Surgeon of the Year. He will be this year's International Guest Speaker and will tell us about "The Development of Hand Surgery in Venezuela." At this year's Annual Meeting, we will initiate a "Humanitarian of the Year" award. Our partnership with the American Society for Reconstructive Microsurgery (ASRM) and the American Society for Peripheral Nerve (ASPN)) at the Annual Meeting makes the meeting even more attractive and will continue.

Poipu Beach at the Hyatt Resort was voted the top beach in America by the Travel Channel.

**Time to make plans to attend the 33rd Annual Meeting. To view a listing of the tremendous lineup of events and programs, turn to the "Program at a Glance" starting on page 5.**

The golf course is one of the world's finest. We will have a spectacular "Paradise Plantation Party" on Saturday night. I hope that everyone will come. Coats and ties are banned for the duration of the meeting. The opportunity for fellowship, camaraderie, informal dialogue, and the social

*continued on page 3*

## Epistemology

The focus of this edition of *HSQ* is Kienbock's disease. Like many hand problems, the treatment of Kienbock's disease is set as much by tradition or personal preference as it is by consideration of the scientific data underlying our understanding of the nature of the disease, its implications, or the results of treatment.

The etiology of Kienbock's disease is unclear: is the initial problem a loss of vascularity, an injury, or could it be either? Kienbock himself discussed these alternatives. He could not come to a clear conclusion a century ago; are we any closer today? The natural history is also unclear:

what happens in the long run, especially symptomatically? Radiographically, it seems that progression is more of the rule, but does the radiographic image predict function or symptoms? Finally, how do the treatments stack up, one against the other, or compared to no treatment, again not only with regard to the x-ray appearance, but also with regard to symptoms and function?



PETER C. AMADIO, MD

### Looking for a Representative

The American Association for Hand Surgery is soliciting an orthopaedic-trained hand surgeon from its membership to represent the AAHS as a patient safety representative to the AAOS. Please respond to ALAN FREELAND, MD, President, AAHS, 20 North Michigan Avenue, Suite 700, Chicago, IL 60602.

The study of the ways in which knowledge is built up is called epistemology. How do we come up with new ideas? What drives their evolution? How do ideas become knowledge? Kienbock's disease is a good example, I think, for how this works (or doesn't) in surgery. What is it that turns medical ideas into medical knowledge, and do we even know the difference?

According to the famous philosopher of science, Karl Popper, we turn ideas into knowledge by trying, and failing, to prove the ideas false. This is the essence of the scientific method, and ultimately the characteristic that distinguishes scientific knowledge from belief, and science from pseudoscience. In science, when data challenges the theory, we are willing to change the theory; in pseudoscience, we attack the data, because the theory is sacrosanct (kind of like that joke sign we often see: Workplace Rules. #1 The boss is always right. #2, In case the boss is wrong, refer to rule #1).

How often do we do adhere to Popper's standard in surgery? We start usually with an observation, which leads to a theory of causation. If we were following the scientific method, this initial theory would be tested by establishing hypotheses of causation, with relevant interventions then tested for effectiveness. Controls would be used, both sham and treatments that are based on a rival or contradictory theory of causation. As Popper might put it, the treatment based on the rival theory, and the sham treatment are both challenges to the validity of our initial hypothesis, which we must test if we are truly interested in turning our ideas into knowledge. The resulting data would be analyzed and new theories developed, new hypotheses tested, and so on. There would be blind alleys, but eventually we

would arrive at some better approximation of reality that would permit a treatment recommendation with some probability of success.

In surgery, things don't always work as Popper might have hoped. We are often reluctant to challenge our ideas in controlled experiments. Most surgical literature consists of case series of a single treatment. When we do compare treatments, we sometimes come in for unpleasant surprises, as in the studies that have shown no difference in the results of surgical treatment of thumb CMC arthritis, whether one does an arthrodesis, resection arthroplasty, suspensionplasty, or implant arthroplasty, or even more shockingly, the recent study which showed that arthroscopic debridement of the knee was not only no better than simple lavage; it was no better than sham surgery, in which a skin incision was made but the knee joint was never entered. Similarly, the literature on Kienbock's disease suggests that we can improve symptoms by equalizing the lengths of the radius and ulna; simply changing the relative lengths of the two bones, by doing a radial opening wedge of the radius, by doing a radial closing wedge of the radius, or by simply drilling a hole in the radius. What, really, do we know about Kienbock's disease? More importantly, what do we need to do to know more? Perhaps it is time for a sham controlled study?

Ultimately, we need a better way to push medical knowledge forward, so that the second hundred years of Kienbock's disease (and many other conditions, for which the story is similar) will show more progress than the first hundred. We don't require courses in epistemology in medical school, but maybe it is time to pose the question: do we learn from our past, or simply repeat it? **H**

## FROM THE PRESIDENT

*continued from page 1*

functions of our annual meeting remain a strong and attractive positive influence among our membership.

Our joint Symposium with the American Society for Surgery of the Hand on "Repetitive Injuries in the Workplace" was a complete success. Two hundred and fifty attendees participated. Peter Amadio and Dean Louis were Co-chairs and they and their faculty did an exceptional job. Chairmen Craig Johnson, Andy Lee, and Richard Berger have plans well underway for an AAHS sponsored "Reconstruction of the Severely Injured Hand Symposium" in Chicago next spring. Susan Mackinnon will chair an AAHS and ASSH jointly sponsored "Symposium on Carpal Tunnel Syndrome" in 2004. Andy Lee will lead a contingent of AAHS volunteers that will participate in Specialty Day at the August, 2002 SICOT Meeting in San Diego.

## HAND SURGERY QUARTERLY

### President

Alan E. Freeland, MD

### Editor

Peter C. Amadio, MD

### Executive Director

Laura Downes Leeper, CAE

### Managing Editor

Anne B. Behrens

*Hand Surgery Quarterly* is a publication of The American Association for Hand Surgery and is published strictly for the members of AAHS. This publication is designed as a forum for open discussion and debate among the AAHS membership. Opinions discussed are those of the authors or speakers and are not necessarily the position, posture or stance of the Association.

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Richard Berger is coordinating efforts with ASSH for future 3 year jointly sponsored cyclical "Review Courses in Hand Surgery" that will also be preparatory for the ABOS Certificate of Added Qualification in Hand Surgery.

Our finances are solid. Brad Meland and his Finance Committee along with Accountant, Peter Kuhn, Financial Advisor Jeff Palmer, and Executive Director Laura Downes Leeper, have conscientiously and carefully overseen our accounts during these difficult economic times.

Ron Palmer, our Secretary, has recorded our activities, kept us informed, and provided invaluable guidance in several areas.

Our internal publication, the *Hand Surgery Quarterly*, is the best that I have seen. Editor Peter Amadio, Managing Editor Anne Behrens, and Laura Downes Leeper, our Executive Director, keep us at the summit. A new section, "People in the News" has been initiated. Please send your information on personnel or family accomplishments to the Central Office so that they may be included in this column.

Membership is on an even keel. We have user-friendly on-line application capabilities that modernization and simplify the process. Miguel Pirela-Cruz will chair a new Minority Affairs Committee to recognize the values of diversity within our society and to encourage minority membership and participation at every level of our organization.

Plans for a new and improved AAHS website ([www.handsurgery.org](http://www.handsurgery.org)) have been approved. Keith Brandt, leading the Website Committee, has played an instrumental role in development and implementation. On-line registration will be available for the January 8-11, Annual Meeting in Kauai, Hawaii.

We continue to strengthen our role in political affairs. To sit on the sidelines is to perish. Peter Amadio chairs COMSS as an AAHS delegate. Lee Osterman and Mark Baratz also serve as delegates from AAHS. COMSS delegates participated with

## PEOPLE IN THE NEWS

**A. Lee Dellon, MD**, has been appointed Professor of Plastic Surgery at University of Arizona, Tucson, where he has taken over the Hand Surgery practice of John Madden, MD who retired this past year. **Chris Maloney, Jr., MD**, who finished Plastic Surgery training at Massachusetts General Hospital, is joining Dr. Dellon there in their Institute for Peripheral Nerve Surgery. Dr. Dellon has begun a Peripheral Nerve Fellowship, in his Baltimore office, where **Ivan Ducic, MD, PhD**, who finished Plastic Surgery training at Georgetown, will be the first fellow.

*People in the News* is dedicated to recognizing the accomplishments of AAHS members and their families. Submissions should be sent to the AAHS Central Office at [VETTER@ISMS.ORG](mailto:VETTER@ISMS.ORG). Submissions will be included on a space available basis.

members of Congress in "Capitol Hill Day" this past spring. Nicholas Vedder currently represents the AAHS as Alternate Delegate to the AMA. We continue to coordinate our efforts with the American Society for Surgery of the Hand in this arena. The AAHS is moving toward specialty society membership and representation (our own individual seat) in the AMA House of Delegates.

Our synergy with other related professional organizations is at an all-time high. Peter Amadio has been very active as our representative to the IFSSH. Randy Sherman is our representative to the Plastic Surgery Educational Foundation (PSEF). Richard Brown represents the AAHS with the American Society for Plastic Surgery (ASPS). Past-President, Robert Buchanan is

Hand Surgery  
Quarterly

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Autumn  
2002

3

*continued on page 4*

## FROM THE PRESIDENT

*continued from page 3*

our representative to the American College of Surgeons. Richard Berger and I liaison with the ASSH.

We continue to have excellent Affiliate Membership leadership, support and participation. During the past three years, the HEF has partially supported their registration fees at Hand Therapy Specialty Day. The Vargas Hand Therapy International Teaching Award has been a huge success. As of last year, an award is given for the best paper presented by a hand therapist at the Annual Meeting. Lynn Bassini, Senior Affiliate, and Paul Brach, Junior Affiliate, are active AAHS Board of Directors members. Paul LaStayo liaisons with other hand therapy organizations. Along with Keith Bengtson, Chairman of the Hand Therapy Committee, they continue to seek progress for their constituency and to identify and encourage leadership qualities

within their membership.

International participation at our Annual Meeting is at an all time high. International membership has grown proportionately, reflecting the globalization of our specialty. There is an award for the "Best International Paper" presented at our Annual Meeting. Our strong personal and professional relationships with international hand surgeons and therapists enrich our organization. Jorge Orbay and his International Affairs Committee should be commended.

The Hand Education Foundation (HEF) continues to fulfill Robert Schenck's dream of supporting the AAHS Annual Meeting, our educational mission, and our Awards and Recognition Program under the able leadership of Miguel Saldana and his Board of Directors. The AAHS Board of Directors will make a contribution to the HEF at this year's Annual Meeting to demonstrate our unified support of their efforts. Funds raised from Mulligans and chances for "Closest to the Pin" award at this year's Annual

Golf Tournament in Kauai will be donated to the HEF. I thank the membership for their continued support of the HEF and urge each of you to continue your generosity. A long-range hope and goal is to partially or completely support membership registration at the Annual Meeting.

A jointly sponsored meeting is being planned in Romania with the AAHS and the Romanian Hand Society to follow the 8th International Federation of Societies for Surgery of the Hand that will be held in Budapest, Hungary in June of 2004. Jay Ryu will be the AAHS Chairman. Contact him if you are interested in participating.

I would like to thank everyone who has contributed so diligently to the success of our organization. This includes our leadership, the Chicago Central Office administration, the HEF, and, most importantly, our membership. We are a team. Together Everyone Accomplishes More. That's our goal, continued growth and success. 

# AAHS 33rd Annual Meeting

January 8-11, 2003  
Hyatt Regency Kauai  
Koloa, Kauai, HI

## Program at a Glance

### Hand Therapy Specialty Day Wednesday, January 8, 2003

#### Concepts in the Treatment of Upper Extremity Sports Injury: From the Elbow to Hand

- 6:00-7:30 am Continental Breakfast  
7:00-7:05 am President's Welcome  
*Alan Freeland, MD*  
7:06-7:10 am Program Chair Welcome  
*William Geissler, MD*  
7:11-7:15 am Hand Therapy Program Co-  
Chair Welcome  
*Lynn Bassini, PT, OT*  
*Lee Osterman, MD*  
7:15-7:30 am The Epidemiology of Hand,  
Wrist, Elbow Injury in  
Sports  
*Peter Amadio, MD*

#### Avulsion Injuries: Why Won't It Bend?

Moderator: *Nash Naam, MD*

#### Flexor Digitorum Profundus Avulsion- Jersey Finger

- 7:31-7:40 am Diagnosis and Treatment  
*Mukund Patel, MD*  
7:41-7:50 am Rehabilitation  
*Lynn Bassini, PT, OT*

#### PIPJ Fracture Dislocations

- 7:51-8:00 am Diagnosis and Treatment  
*Mark Cohen, MD*  
8:01-8:10 am Rehabilitation  
*Aviva Wolff, OT*

#### Distal Biceps/Triceps Rupture

- 8:11-8:20 am Diagnosis and Treatment  
*Dean Sotereanos, MD*  
8:21-8:30 am Rehabilitation  
*Sue Blackmore, MS, OTR,*  
*CHT*  
8:31-8:44 am Case Presentations &  
Questions

#### Arthroscopic Management of the Athletic Wrist

Moderator: *Brian Adams, MD*

- 8:45-8:55 am Arif Scaphoid Fracture  
*Joe Slade, MD*

- 8:56-9:05 am Arif Distal Radius Fracture  
*Will Geissler, MD*  
9:06-9:15 am Ligament Injuries-  
Gymnast's Wrist  
*Richard Berger, MD*  
9:16-9:25 am TFCC Injuries  
*David Ruch, MD*  
9:26-9:35 am Rehabilitation  
*Terri Skirven, OTR, CHT or*  
*Paul Brach, MS, PT, CHT*  
10:00-10:15 am Break

#### Tennis Elbow, Anyone?

Moderator: *Keith Bengtson,*  
*MD*

- 10:15-10:30 am Is There a Scientific Rational  
for the Treatment of Elbow  
Tendonitis?  
*Kevin Plancher, MD*  
10:31-10:45 am Arthroscopic Treatment of  
Tennis Elbow  
*Mark Cohen, MD*  
10:46-11:00 am Golfer's Elbow—Medial  
Epicondylitis  
*Brian Sennett, MD*  
11:01-11:15 am Rehabilitation of Elbow  
Tendonitis Stretch or Curl  
*Sue Michlovitz, PT, PhD*  
11:16-11:30 am Is There Light at the End of  
the Radial Tunnel?  
*Lee Dellon, MD*

#### Nerve Injuries in Sports

- 11:31-11:37 am Hand and Wrist: Thumb  
Bowler's/ Cyclist's Palsy  
*Brian Adams, MD*  
11:38-11:45 am Nerve Injury about the  
Shoulder  
*John Bedenar, MD*  
11:46-11:55 am Rehabilitation of the Injured  
Nerve  
*Christine Novak, PT, MS*  
12:00-1:00 pm Working lunch  
12:00-12:14 pm How Your Sport Rates in  
Keeping You Fit  
*Lee Osterman, MD*

#### Decision Making

Moderator: *Scott Kozin, MD*

- 12:16-12:25 pm Hand Fractures in the Large  
Sports Medicine Practice  
*Shannon Singletary, MD*  
12:26-1:00 pm Protective Splinting and  
Hand Gear for the Athlete at  
All Levels of Play  
*Presidential Guest Speaker*  
*Art Rettig, MD*  
1:01-1:15 pm When Can I Play? Managing  
the In-Season Injury  
Specialty Casts, Braces,  
Gloves and Taping  
*Ronald Palmer, MD*  
*Gregory L Gaa, MS, ATC-L,*  
*CSCS*

#### Instructional Courses

- 1:00-2:15 pm  
101 Malalignment Bone and Soft  
Tissue Tumors  
*Peter Murray, MD*  
102 Disorders of the Distal  
Radioulnar Joint  
*Brian Adams, MD*  
103 Hand Fractures  
*Mark Baratz, MD*

- 104 Management of  
Rheumatoid Hand and  
Wrist  
*Anthony De Santolo, MD*

#### Specific Sports: Specific Injuries

Moderator: *Sue Michlovitz,*  
*PT, PhD*

- 1:16-1:25 pm Skier's Thumb  
*Mark Baratz, MD*  
1:26-1:35 pm Boxer's Fracture  
*Alan Freeland, MD*  
1:36-1:45 pm Baseball Halmate Hook  
Nonunion  
*John Lubahn, MD*  
1:45-1:55 pm Mallet Finger  
*Terri Wolfe, OTR, CHT*  
1:56-2:05 pm Squeaker's Wrist  
*Richard Brown, MD*  
2:05-2:15 pm Hazards of Water Sport—  
Fish Hooks to Shark Bites  
*Brad Meland, MD*  
2:16-2:30 pm Questions and Wrap Up  
2:30-4:30 pm Computer Workshop  
(optional)  
*Robert Uhl, MD*

### Thursday, January 9, 2003

- 6:00-7:00 am Coffee

#### Instructional Courses

- 7:00-8:10 am  
105 Congenital Hand  
*Shelia Lindley, MD*  
106 Wrist Reconstruction  
*Gunter Gorman, MD*  
107 Vascularized Bone Grafts  
*Allen Bishop, MD*  
108 Advances in Upper  
Extremity Soft Tissue  
Coverage  
*William Lineaweaver, MD*  
109 Updates on Basilar Joint  
Arthritis  
*Lee Osterman, MD*

#### Concurrent Scientific Paper Session A-1

#### Hand Fractures

- 8:30-8:36am Locked Percutaneous  
Intramedullary Nailing of  
Metacarpal and Phalangeal  
Fractures  
*Jorge Orbay, MD*  
8:37-8:43 am Motion Influencing Factors  
in Digital Fractures  
*David J. Slutsky MD,*  
*FRCS(C)*  
8:44-8:50 am Acute vs Delayed  
Treatment of Open Distal  
Phalanx Fractures  
*Arshad R. Muzaffar, MD*  
8:51-8:57 am A New Dynamic Spring  
Distraction Device in the  
Treatment of Proximal  
Interphalangeal Joint  
Fracture Dislocation  
*John LoGiudice, MD*  
9:05-9:11 am Discussion

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Hand Surgery  
Quarterly

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Autumn  
2002

5

## Program at a Glance

continued from page 5

	<b>Hand/Wrist Fractures</b>
9:12–9:18 am	Long-Term Results of Management of Gun Shot Wounds to Proximal Interphalangeal Joints Using External Fixator <i>C. Balakrishnan, MD</i>
9:19–9:25 am	Sports Casting of the Upper Extremity In-Season Athlete <i>Ronald E. Palmer, MD</i>
9:26–9:32 am	The Management of Complex Articular Fractures of the Distal Radius through the Volar Approach <i>Jorge Orbay, MD</i>
9:33–9:39 am	Palmar Plating for the Fracture of the Distal Radius <i>Masayuki Kamano MD, PhD</i>
9:40–9:46 am	Treatment Outcome of the Trimed System for Displaced Intra-Articular Distal Radius Fractures <i>Kevin Chung MD, MS</i>
9:47–9:53 am	Discussion
	<b>Wrist</b>
9:54–10:00 am	Management of Dorsal Radiocarpal Ligament Tears <i>David J. Slutsky MD, FRCS(C)</i>
10:01–10:07 am	A Salvage Operation for Kienboeck's Disease with Unsuccessful Radial Osteotomy; Three Case Reports of a Vascularized Bone Graft Combined with Capitate Shortening and Capitoamate Fusionapitate Shortening <i>Ryosuke K. Akinoki MD, PhD</i>
10:08–10:14 am	Outcome Assessment of Wrist Denervation—A Review of 84 Patients <i>Michael Sauerbier MD, PhD</i>
10:15–10:21 am	Stability of Scaphoid Waist Fractures in Response to Forearm and Wrist Rotation and the Role of the Radioscaphocapitate Ligament <i>Timothy R. McAdams, MD</i>
10:22–10:28 am	Injury to the Dorsal Branch of the Ulnar Nerve in the Arthroscopic Repair of Ulnar Sided Triangular Fibrocartilage Tears Using an Inside-out Technique: A Cadaveric Study <i>Timothy R. McAdams, MD</i>
10:29–10:35 am	Discussion
	<b>Concurrent Scientific Session A-2</b>
	<b>Tendons</b>
8:30–8:36 am	Cerebral Reorganization Following Flexor Tendon Lesion of the Fingers <i>J. Henk Coert, MD</i>
8:37–8:43 am	Biomechanical Analysis of Swan Neck Tendency in

	Two-Stage Flexor Tendon Grafts <i>Shrikant J. Chinchalkar BScOT, OTR, CH</i>
8:44–8:50 am	Reduction Flexor Tenoplasty for Repair of the Flexor Tendon Using Large Core Suture: a Biomechanical Cadaver Study <i>Houshang Seradge, MD</i>
8:51–8:57 am	Improved Technique of Reconstruction of the Finger Distal Extensor Aponeurosis by Dermal Bandlets <i>Alexandru V. Georgescu, Prof</i>
8:58–9:04 am	Endoscopic Trigger Finger Release <i>Tyson Cobb, MD</i>
9:05–9:11 am	Discussion
	<b>Carpal Tunnel Syndrome</b>
9:12–9:18 am	Percutaneous Trigger Finger Release Using a New Push Knife <i>Michael John Dunn, MD</i>
9:19–9:25 am	Scapho-Trapezial Synovitis as a Cause of Prolonged Pain after Carpal Tunnel Release <i>Hooman Soltanian, MD</i>
9:26–9:32 am	Eleven Year Follow-up of the Distal Single Incision Scope Assisted Carpal Tunnel Release <i>M. Ather Mirza, MD</i>
9:33–9:39 am	A Meta-Analysis of Randomized Controlled Trials Comparing Endoscopic and Open Carpal Tunnel Decompression <i>Achilleas Thoma MD, FRCS(C)</i>
9:40–9:46 am	Carpal Tunnel Surgery in the Elderly <i>Mark F. Hendrickson, MD</i>
9:47–9:53 am	Discussion
	<b>Basic Science</b>
9:54–10:00 am	Wrist Flexor Spasticity Results in Dramatic Muscle Sarcomere Lengths <i>Richard Lieber, PhD</i>
10:00–10:07 am	Spastic Muscle Cells Are Shorter and Stiffer Than Normal Cells <i>Richard Lieber, PhD</i>
10:08–10:14 am	Effects of Tgf-Beta on Flexor Tendon Wound Healing <i>Matthieu Klein, MD</i>
10:15–10:21 am	Local Application of Low Molecular Heparin in Crush Injuries: an Experimental Study in Rats <i>Yu-Hui Yan, MD</i>
10:22–10:28 am	Long-Term Outcomes in Surgical Rehabilitation of the Upper Limb in Tetraplegia <i>Vincent R. Hentz, MD</i>
10:29–10:35 am	Discussion
10:29–11:00 am	Break
11:00–11:30 am	<b>President Invited Speaker</b> "Innovation in Hand Surgery" <i>Arnold-Peter Weiss, MD</i>
11:30–12:30 pm	<b>Ask the Doctor</b> Total Elbow Arthroplasty (sponsored by DePuy) <i>William Geissler, MD</i>

Distal Radius Fixation (sponsored by Hand Innovations)  
*Jorge Orbay, MD*  
Percutaneous Trigger Finger Release (sponsored by Pharmacocia)  
*Miguel Saldana, MD*

### Scientific Session B

#### Papers: Elbow

11:36–11:42 am	Radial-Ulnar Synostosis after the Two-Incision Biceps Repair: a Standardized Treatment Protocol <i>Loannis Sarris, MD, PhD</i>
11:43–11:49 am	Reconstruction Essex-Lopresti Injury <i>Gary Kuzma, MD</i>
11:50–11:56 am	Steroid Injection vs. Autologous Blood Injection in Lateral Epicondylitis <i>Miguel Saldana, MD</i>
11:57 am–12:03 pm	Lateral Antebrachial Cutaneous Nerve Entrapment at the Elbow <i>Nash Naam, MD</i>
12:04–12:10 pm	Outcome Following Repair of Distal Biceps Ruptures Using a Single Incision Technique and Early Rehabilitation <i>Thomas R. Hunt III, MD</i>
12:11–12:17 pm	Discussion
12:18–12:40 pm	Break
12:41–1:10 pm	Arthroplasty of the Hand <i>Robert Beckenbaugh, MD</i> <i>Arnold-Peter Weiss, MD</i>
1:11–1:30 pm	<b>International Speaker</b> "History of Hand Surgery in Venezuela" <i>Anthony DeSantola, MD</i>

### Friday, January 10, 2003

6:00–7:00 am	Coffee
7:00–8:15 am	<b>Instructional Courses</b>
110	The Elbow <i>Mark Cohen, MD</i>
111	New Frontiers in Wrist Arthroscopy <i>David Slutsky, MD</i>
112	Use of Electrothermal Shrinkage in Hand & Wrist <i>Steven Topper, MD</i>
113	Upper Extremity Vascular Disorders <i>Neal Jones, MD</i>
114	Management of Acute/Chronic Flexor Tendon Injuries <i>Scott Kozin, MD</i>
	<b>Concurrent Scientific Paper Session C-1</b>
	<b>Wrist</b>
8:30–8:36 am	Capsulodesis for Chronic Scapholunate Dissociation <i>Steven L. Moran, MD</i>
8:37–8:43 am	The Outcome of Isolated Lunotriquetral Ligament Tears Treated by Ulnar Shortening Osteotomy <i>M. Ather Mirza, MD</i>

8:44–8:50 am Role of X-Ray, Bone Scan, Arthrogram and Arthroscopy in the Diagnosis of Ulna Sided Wrist Pain Due to Ulnar Impaction, TFCC Lesions, or Lunotriquetral Ligament Tears  
*M. Ather Mirza, MD*

8:51–8:57 am A New Method of Surgically Treating Midcarpal Instability  
*Herbert P. von Schroeder MD, FRCSC*

8:58–9:04 am Ten Year Outcome: Treatment of Scaphoid Instability without Fixed Deformity  
*Houshang Seradge, MD*

9:05–9:11 am Discussion

**Wrist**

9:12–9:18 am Lunotriquetral Arthrodesis: Good Results and Low Morbidity  
*Judson B. Moore, MD*

9:19–9:25 am Short-Term Clinical Outcomes of Proximal Row Carpectomy  
*Jeffrey A. Nechleba, MD*

9:26–9:32 am An Analysis of Symmetry of Displacement of the Distal Radioulnar Joint in Normal Subjects  
*Juli Matsuoka, MD*

9:33–9:39 am Electrothermal Shrinkage in Interosseous Ligament Tears  
*William Geissler, MD*

9:40–9:46 am Radial Opening Wedge Osteotomy for Kienbock's Disease: A Long-Term Follow-up Study  
*Minoru Shibata, MD*

9:47–9:53 am Discussion

9:30–10:30 am **Ask the Doctor**  
Total Wrist Arthroplasty (sponsored by KMI)  
*Brian Adams, MD*  
Arthroscopic Fixation of Scaphoid Fractures (sponsored by Acumed)  
*Joe Slade, MD*  
Internal Fixation of Hand Fractures (sponsored by AO)  
*Mark Cohen, MD*

**Arthritis**

9:54–10:00 am Trapeziometacarpal Joint Renewal with Autogenous Ear Cartilage  
*William Nickell, MD*

10:00–10:07 am Thumb Carpometacarpal Arthrodesis with Minicondylar Bladeplate Fixation  
*Donald P. Condit, MD*

10:08–10:14 am An Update on Radiolunate Fusion for Radiocarpal Arthrosis Due to Malunion of Distal Radius Fracture  
*Jaiyoung Ryu, MD*

10:15–10:21 am Treatment of the Rheumatoid Hand-Ulnar Drift (Early and Lates Cases)  
*Harilaos T. Sakellarides, MD*

10:22–10:28 am Long Term Follow-up of Proximal Row Carpectomy for Advanced Stage Kienbock's Disease: An Average 15 Year Follow-up  
*Boyd Christopher Lumsden, MD*

10:29–10:35 am Discussion

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**Concurrent Scientific Paper Session C-2**

**Microvascular**

8:30–8:36 am Long-Term Outcome Following Functioning Free Muscle Transfer in the Young Pediatric Patient  
*Arshad R. Muzaffar, MD*

8:37–8:43 am Toe Transfer in Hand's Functional Improvement  
*Alexandru V. Georgescu*

8:44–8:50 am Functional Recovery after Hand Transplantation—Results at Three Year Follow Up  
*Warren C. Breidenbach MD, FRCSC(C)*

8:51–8:57 am Neuromuscular Reconstruction in Severe Brachial Plexus Lesions  
*Pietro Giovanoli, MD*

8:58–9:04 am Limits of Replantation Surgery and Alternative Procedures for Injuries of the Distal Phalanges  
*Franz Lassner, MD*

9:05–9:11 am Discussion

**Nerve**

9:12–9:18 am Correction of Internal Rotation Deformity in Brachial Plexus Palsy with Latissimus and Teres Major Rerouting and Lengthening  
*Firas R. Karmo, MD*

9:19–9:25 am The Anatomy of the Sensory Communication of the Median and Ulnar Nerves in the Palm  
*Sam Biafora, MD*

9:26–9:32 am Results of Musculofascial Lengthening Technique for Submuscular Transposition of the Ulnar Nerve  
*J. Henk Coert, MD*

9:33–9:39 am Functional Outcome of Surgical Treatment of Radial Tunnel Syndrome: Review of 213 Cases  
*Nash Naam, MD*

9:40–9:46 am Treatment of Cubital Tunnel Syndrome: Comparison between Simple Decompression, Endoscopic Assisted Release and Anterior Transposition  
*Tsu-Min Tsai, MD*

9:47–9:53 am Discussion

**Microvascular**

9:54–10:00 am New Method of Bone Marrow Transplantation Leads to the Extension of Skin Allograft Survival across Major Histocompatibility Barrier  
*Maria Siemionow MD, PhD*

10:00–10:07 am Toe Transfer with an In-Continuity Arterio-Venous Loop  
*Erin E. Brown MD, PhD, FRCSC(C)*

10:08–10:14 am Cross Replantation of Right Forearm to the Left Side for a Case of Bilateral Amputation of Both Forearms in a Train Accident  
*Sneh-Sadan Sneh-Sadan, MD*

10:15–10:21 am The Superficial Palmar Branch of the Radial Artery as a

Source of Enigmatic Upper Extremity Pain  
*Woodward L. Coleman, MD*

10:22–10:28 am The Effect of Nerve Growth Factor Antibody on Long-Term Sensory Function in Rat Skin Grafts  
*William G. Williams, MD*

10:29–10:35 am Discussion

10:35–11:00 am Break

11:00–11:30 am **Ancient Greek Coinage: The Stories from Smuggler to Sotheby's**  
*Arnold-Peter Weiss, MD*

11:30 am–12:00 pm Advances in Management of Scapholunate Ligament Tears  
*Richard Berger, MD*

12:00–12:10 pm **ASSH President Address**  
*Dennis Phillip II, MD*

12:00–12:40 pm Defend Your Plate  
*Jorge Orbay, MD*

12:40–1:40 pm **President's Business Meeting**  
**Presidential Address**  
"Half a Cup"  
*Alan Freeland, MD*

1:45–2:30 pm AAHS Board Meeting

**Saturday, January 11, 2003**  
**AAHS/ASRM/ASPN Combined Day Program**

6:30–7:00 am Coffee

7:00–5:00 pm Posters Open

7:00–8:00 am **Instructional Courses**

201 Thoracic Outlet  
*Susan Mackinnon, MD*  
*Lee Dellon, MD*

202 Multi-disciplinary Pain Management  
*James Campbell, MD*

203 Repetitive Making for Major Limb Replantation  
*Peter Amadio, MD*

204 Decisions Making for Major Limb Replantation  
*Gabriel Kind, MD*

205 Brachial Plexus  
TBA

8:00–8:15 am **Presidents' Welcome**  
*Alan Freeland, MD (AAHS President)*  
*Julia K. Terzis, MD, PhD (ASRM President)*  
*William Kuzon, MD (ASPN President)*

8:15–9:30 am Combined Panel: Functional Restoration Following Devastating Injuries  
*Rod Hentz, MD, David Chuang, MD, Gu Yu Dong, MD*

9:45–10:30 am **Presidents' Invited Lecture**  
"An Eighteen Year Experience of Treating Upper Extremity Injuries in the NFL"  
*Art Rettig, MD*

10:30–11:15 am Coffee/ Exhibits Break

11:15 am–12:15 pm Outstanding Nerve Paper Presentations

# Kienbock's Disease

Stiles T. Jewett, Jr., MD, FACS

**A**s discussed in the accompanying "Around the Hand Table", a variety of procedures are employed in the treatment of Kienbock's disease. The complexity of treatment increases with the severity of the disease. The Lichtman modification of Stahl's original radiographic classification is widely used to stage the disease.

Generally speaking, a trial of conservative immobilization management may be employed in early Stage I disease in an attempt to restore blood supply to the lunate.

Coding for this treatment falls under standard E & M codes or **25630** – Closed treatment of carpal bone fracture without manipulation or **25635** – with manipulation.

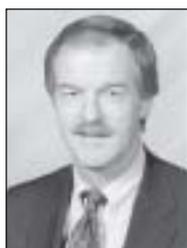
For *Stage I, II, and IIIA* disease, treatment may be either revascularization and/or equalization osteotomies of the radius or ulna designed to unload the lunate.

In *Stage IIIB*, rotatory subluxation of the scaphoid is present and mandates some form of fusion to correct the deformity. The most commonly employed fusions are the triscaphe and scaphocapitate.

Proximal row carpectomy and wrist arthrodesis have proven effective for the salvage of *Stage IV* disease.

Silicone implant replacement arthroplasty has fallen out of favor due to the problem of silicone synovitis.

Let us look at the coding for these procedures by stage.



STILES T. JEWETT, JR., MD, FACS

TABLE 1		
Stage	Procedure Options	CPT Code(s)
I	Non-Operative	E & M or 25630 – Closed treatment of carpal bone fracture; without manipulation 25635 – " ; with manipulation
I, II, IIIA	Revascularization -utilizing bone graft  Revascularization -without bone graft	25645 – Open treatment of carpal bone fracture 20900-51 – Bone graft, any donor area; minor or small 25645-22 open treatment of carpal bone fracture
IIIB	Limited Intercarpal Fusion	25820 Arthrodesis, wrist; limited, without bone graft 25828 with autograft includes obtaining graft
IV	Salvage Procedures	25800 Arthrodesis, wrist; complete, without bone graft 25805 with sliding graft 25810 with iliac or other autograft (includes obtaining graft) 25215 proximal row carpectomy

## Stage I, II and IIIA (lunate collapse without scaphoid rotation)

Revascularization is usually performed with a pedicled bone graft from the radius as described by Braun<sup>1</sup>. Since a specific code does not exist for this procedure it can be coded utilizing **25645** – open treatment of carpal bone fracture plus **20900** – Bone graft, any donor area; minor or small. An alternative would be to utilize **25825** – Arthrodesis, wrist, limited, with autograft. Although the latter does not fit exactly, it does accurately reflect the nature and complexity of the bone graft procedure. Tamai, Yajima and Ono<sup>2</sup> have described an arterial revascularization procedure in which the second dorsal metacarpal artery and vein are passed into the lunate. No specific code exists for this procedure and it therefore can be coded as either **25645** – open treatment of carpal bone fracture (one could consider appending a -22 modifier to reflect

the added work and complexity of the procedure) or, less desirable, **25999** – unlisted procedure, forearm or wrist. As is well known to you veteran coders, try whenever possible to avoid the use of nonspecific and unlisted codes as they are certain to cause delays in processing and payment of your claims.

In the presence of ulnar-minus variances, an equalization procedure is usually the operation of choice to reduce shear stresses across the lunate. Radial shortening osteoplasty is coded **25390**. Ulnar lengthening with autograft is coded **25931**.

## Stage IIIB

Stage IIIB disease is usually treated by some form of limited intercarpal fusion. This can be either a triscaphe or scaphocapitate fusion or capitate shortening with capitate hamate fusion depending on surgeon preference. These procedures would be coded as **25820** –

Arthrodesis, wrist; limited, without bone graft or **25828** with autograft (includes obtaining graft).

### Stage IV

Stage IV represents a generalized carpal degeneration and is usually treated by **25800** - arthrodesis, wrist; complete, without bone graft, **25805** with sliding graft or **25810** - with iliac or other autograft (includes obtaining graft) where strength is sought at the expense of mobility. Proximal row carpectomy **25215** gives good range of motion but decreased strength.

Although now rarely performed, prosthetic replacement arthroplasty of the lunate is coded **25444**. If done in conjunction with another procedure one would append the -51 modifier to the code.

ICD-9-CM code for Keinbock's is **732.3**.

### You Code It!

A 35 year old RH heavy laborer is evaluated for increasing right wrist pain. X-rays reveal Kienbock's of the wrist with rotary subluxation of the scaphoid (Stage IIIB). A triscaphe fusion with use of autogenous bone graft from the distal radius is performed.

Code: 25828 Arthrodesis, wrist, limited; with bone graft. ICD-9-CM = 732.3. **H**

1. Braun, R: The pronator pedicle bone grafting in the forearm and proximal row. Presented at the 38th annual meeting of the American Society for Surgery of the Hand, March, 1983.
2. Tamai, S. et al. Revascularization Procedures in the treatment of Kienbock's disease. *Hand Clinics*9:3,455-66, 1993.



## Historian and Education Committee Chair W. P. Andrew Lee, MD

**A**ndy Lee was 15 years old when his parents in Taiwan sent him, their youngest child, to the United States for education. Staying with his siblings' families, he adapted himself to the American language and culture. "I was fortunate that I came to this land of opportunities," he says, "where the admission officers in top schools gave me a chance." He graduated from Harvard College with honors in physics, and received his medical degree from Johns Hopkins University. Attracted to the diverse yet precise nature of plastic surgery, he completed general surgery training at the Johns Hopkins Hospital, and came to the Massachusetts General Hospital for his plastic surgery residency.

It was at the Mass. General where his interests in hand surgery solidified. Influenced by its long tradition of collaboration between orthopedic and plastic hand surgery, he chose an orthopedic hand fellowship at the Indiana Hand Center. He returned to the Mass. General in 1993 to join its academic faculty, and subsequently became the Director of the hand fellowship and hand surgery service in the Department of Surgery, and Associate Professor of Surgery at Harvard Medical School.

Dr. Lee has been interested in transplantation of composite tissue allografts, such as a limb. His research in rodent and swine models has been directed at defining the rejection process of these allografts and obviating the need for chronic immunosuppression in the recipients, i.e., inducing "toler-

ance" to the allografts. He feels that more scientific investigation is necessary before the current hand transplants should be carried out on a widespread basis.

AAHS was one of the first professional organizations that Dr Lee joined, and he has not missed a meeting since 1993. He served as the scientific program chair for the Palm Springs meeting in 1996. In 2001, he led the Education Committee to establish a public education section on the AAHS website with "e-brochures" on common hand conditions. He joined the Board of Directors in 2002 as Historian, and looks forward to continuing his contribution to the Association.

Dr. Lee has received 28 awards and honors, including the 1991 Kappa Delta Award from the American Academy of Orthopedic Surgeons, and 1995 Sumner Koch Award from the American Society for Surgery of the Hand. In 2001, he was named one of Boston's top doctors in plastic surgery by *Boston Magazine*.

Dr. Lee served as the Chairman of the Plastic Surgery Research Council in 2001-2002. This August he moved to the University of Pittsburgh School of Medicine to become the Chief of the Division of Plastic Surgery and Professor of Surgery. He hopes to continue the long tradition of excellence in Pittsburgh Plastic and Hand Surgery. **H**

## Kienbock's Disease

This *Around the Hand Table* touches upon some of the interesting facets of Kienbock's disease. The panel is moderated by **Thomas Hunt, MD**, Head, Section of Hand Surgery, Department of Orthopaedic Surgery, The Cleveland Clinic Foundation, Cleveland, OH. Serving on the panel are hand surgeons **David Bozentka, MD**, Associate Professor, Director, Hand and Microvascular Surgery Section, Dept. of Orthopaedic Surgery, Hospital of the University of Pennsylvania, Philadelphia, PA, **Mark Hendrickson, MD**, Section Chief, Hand and Microsurgery, Department of Plastic and Reconstructive Surgery, The Cleveland Clinic Foundation, and hand therapist **Patricia Shimko, OTR/L**, Clinical Specialist, Hand & Upper Extremity Center, Sports Health & Orthopaedic Rehabilitation, The Cleveland Clinic Foundation.



**ARTHROSCOPY,  
PRIOR TO YOUR  
EVENTUAL  
PROCEDURE, IS A  
GOOD ALTERNATIVE IF  
YOU'RE REALLY UP  
AGAINST THE WALL  
AS FAR AS  
DIAGNOSIS.**

**THOMAS HUNT, MD**

**Dr. Hunt:** To begin with, why do people get Kienbock's disease, and what happens when they get it? What's the natural history of the disease? Any thoughts?

**Dr. Bozentka:** Multifactorial, and controversial.

**Dr. Hendrickson:** Once established, the progression of untreated avascular necrosis of the lunate is patterned; the cause is controversial.

**Dr. Bozentka:** There are a number of potential problems: vascular, skeletal, and trauma, whether it's one traumatic event versus repeti-

tive injury. The vascular supply of the lunate has been well described and there may be a lunate at risk basically with abnormal blood supply with either just a single vessel or just no arborization of the vessel per se.

**Dr. Hunt:** I would agree. In my mind, the etiology is multifactorial. Cumulative micro-trauma, in a patient who is at increased risk from a hematologic difference or due to tenuous lunate blood supply is the most likely cause. As you stated, the vascular supply of the lunate has been well outlined by Gelberman and others. The

extraosseous network of blood vessels is substantial but the interosseous blood supply may define the "at risk" lunate.

**Dr. Hendrickson:** I agree. The intraosseous and extraosseous anatomy has been very well documented. An early, interesting longitudinal study from the German literature followed cases of lunate avascular necrosis with arteriography. Again, the palmar supply is more significant than the dorsal extraosseous vascular supply to the lunate. However, the intraosseous supply seem to be the at risk factor, specifically the single or absent nutrient artery.

**Dr. Bozentka:** Hulten reported that the patient population with an ulnar negative variance had a higher incidence of having Kienbock's disease compared to those patients that were ulnar positive or neutral. There've been other studies that have tried to refute this theory. Although ulnar negative variance certainly is a significant factor when we look at the biomechanical studies that have been performed, there are other skeletal factors, such as skeletal geometry, that may be involved. The relative inclination of the radius as well as the lunate morphology has also been proposed as factors as well.

**Dr. Hunt:** What do you think about the contribution of humoral factors?

**Dr. Hendrickson:** The significant risk factors seem to be lunate morphology, ulnar negative variance and single or absent intraosseous vascular

supply. Other risk factors include Sick cell anemia and high dose steroid. However, lunate dislocation, which would disrupt volar and dorsal blood supply, do not regularly progress to lunatomalacia. So, some seemingly significant factors can be confounding.

Also, differences are seen in different groups such as women and children.

**Dr. Hunt:** In what way?

**Dr. Hendrickson:** Well, women tend to be diagnosed at an older age. Additionally, avascular necrosis of the lunate in women tends not to be so related to heavy or manual work, I should say. Also, a slightly less direct relationship to ulnar negative variance was noted with women.

**Ms. Shimko:** Dr. Hendrickson, is there a higher incidence in women than men in the studies you've seen?

**Dr. Hendrickson:** Well, you know, I think actually it's the other way.

**Ms. Shimko:** In the clinic, I have seen a higher incidence in men than women, especially industrial injuries or manual laborers.

**Dr. Bozentka:** That's correct. There is a higher incidence in men than women, a higher incidence in patients that do more manual labor, as well as it tends to occur in patients around 40 years of age.

**Dr. Hunt:** Certainly that's been my experience. Getting back to some of the hemologic concepts, we've been looking at a series of patients with

Kienbock's disease, in regard to levels of antithrombin III, protein C, protein S, APC, and tPA. Our thoughts regarding these substances are based on a study by Glueck and others indicating a thrombotic tendency caused by altered levels in patients with Perthes disease. Other than some minor trends that really don't provide any conclusions, we have not found much as of yet.

**Dr. Bozentka:** There are case reports of patients with lupus, on hemodialysis or other comorbidities that have developed Kienbock's. But there's no well defined correlation of systemic or neuromuscular processes that tend to lead to Kienbock's.

**Dr. Hunt:** In summary, the group feels the etiology of Kienbock's disease is a bit controversial and somewhat multi-factorial. Would that be a fair assessment?

**Dr. Hendrickson:** Right.

**Ms. Shimko:** Yes.

**Dr. Bozentka:** Accurate.

**Dr. Hendrickson:** In the end, I think some thrombotic factors will be related to the development and/or progression of Kienbock's.

**Dr. Hunt:** So what do you think about the natural history of Kienbock's disease? Ms. Shimko, have you noticed how your patients fare when treated only by immobilization?

**Ms. Shimko:** I have seen more cases of the end stages of the disease process where surgical intervention is indicated because of lunate collapse. For the patients that were treated by immobilization alone, they managed fine.

**Dr. Hunt:** Do you have any experience treating early stage Kienbock's disease and simply observing what happens?

**Dr. Bozentka:** I tend to treat those patients with stage I Kienbock's with immobilization. There are

several studies looking at the natural history which have conflicting results.

**Dr. Hendrickson:** And I agree. And actually this is one of the other groups that we look at. This group is the skeletally immature or young athletes, especially the junior high and high school athletes. Women gymnasts are an especially interesting group.

In any case, I treat the stage with immobilization, either splinting or casting rather than either internal or external distraction.

**Dr. Hunt:** Let's switch gears to treatment of the disease, specifically use of some of the more "cutting edge" alternatives. What do you all think about revascularization procedures including and vascularized bone grafting and pedicle implantation? What's been your experience and what are your indications for such procedures?

**Dr. Hendrickson:** MRI is invaluable with regards to staging and surgical planning. Direct visualization with arthroscopy is also valuable. The quality and quantity of a significantly diseased lunate can be directly assessed.

The options for increasing local perfusion are pedicle implantation, local bone flap and free bone flap. Most likely, pedicle implantation does not yield long term perfusion. Similarly, free tissue transfer of bone is uncommonly indicated and is somewhat technical. In contrast, a bone flap is logical and simple.

The details of pedicled, local bone flaps are well described. Zaidenberg initially described a distal radius bone flap for scaphoid nonunions. Berger, Bishop and the Mayo Clinic hand surgery group have enhanced the details using a canine model in two canine studies. Their group also reported clinical outcomes in scaphoid nonunions after implanting distal radius pedicled bone flaps.

**Dr. Bozentka:** I'd agree. It seems intuitive to place vascularized bone

into a lunate with osteonecrosis. In determining the surgical treatment, I look at the stage, ulnar variance, and the condition of the cartilage surfaces. Vascularized bone grafts work well for stage II when there's no collapse. In stage IIIA, I try to expand the lunate or sort of increase the lunate height although I have not had as much success with maintaining that height.

**Dr. Hunt:** What is your pedicled bone graft of choice, and do you utilize an unloading procedure together with a vascularization procedure? Do you protect your vascularized bone graft with bridging fixation or temporary intercarpal pinning?

**Dr. Bozentka:** I've tended to use the fourth and fifth ECA described by Bishop et al. I tend to combine it with some type of unloading procedure. If the patient is ulnar negative I tend to perform a radial shortening osteotomy and if ulnar positive I tend to combine it with a capitate shortening osteotomy.

**Ms. Shimko:** I have two questions for the panel. When doing the revascularization procedure, do you tend to use the pronator quadratus muscle as described by Brahm in the literature or possibly a pisiform bone or other bone graft, like iliac crest for transfer?

**Dr. Hendrickson:** That's a very good question because the evolution of pedicled transfers becomes evident. Simple vascular pedicle implantation was augmented by including some local muscle.



**ALTHOUGH ULNAR  
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INVOLVED.**

**DAVID BOZENTKA, MD**

Hand Surgery  
Quarterly

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Autumn  
2002

11

*continued on page 12*

## AROUND THE TABLE

continued from page 11

However, neither transfer consistently demonstrates revascularization. In contrast, the bone flap described by Zaidenberg did. This distal radius bone flap concept was expanded by the Mayo Clinic hand group.

The Mayo group demonstrated with canine studies the vascular anatomy by injection studies and bony perfusion by microsphere blood flow studies.

**Dr. Bozentka:** Yes, retrograde pedicle grafts such as those based on the 2, 3 intercompartmental suparetinacular artery (2, 3 ICSRA) or 5 + 4 extensor compartment artery (5 + 4 ECA). And that's really kind of what led us to this actual class or segment of bone with a defined pedicle that you elevate up. It's well vascularized. It bleeds. You put the graft in there and in most of the cases it goes on to heal. And the

point I'm getting to is, what the Mayo group demonstrated initially in dog studies is the absolute anatomy of this finding. By doing latex and other injections, then also using microsphere blood flow studies, they demonstrated that there was blood flow to this isolated bone flap, that it was greater than just base line blood flow and that two weeks after the transfer, blood flow was significantly higher than the non-vascularized bone. So what we use today are these well-defined segmental or compartmental bone flaps that have been very well defined by the Mayo group.

**Dr. Hunt:** Do you all feel that revascularizing the lunate actually alters the natural history? Have you noted in your patients that lunate collapse has halted and the process seems to have been stopped?

**Dr. Hendrickson:** The logic and coherence are present. Short term studies suggest this improved outcome, but for scaphoid nonunions. We need longer term outcome

results to document these outcomes, five, ten and twenty years out. My few cases suggest this for Kienbock's; however, I limit loads for these patients for at least a year.

**Dr. Bozentka:** We still need to wait for the long-term results of these procedures, the jury's still out in that respect.

**Dr. Hunt:** Some of the worst complications resulting from surgical treatment of this disease that have ended up on my doorstep have been cases in which the surgeon utilized multiple procedures together. Generally a radius shortening osteotomy, a pedicled bone grafting, and sometimes bridging external fixation. In my mind, revascularization procedures are sometimes a bit over-emphasized and over-utilized because they are the newest alternative. It seems the treatment is often not matched with the patient and their particular problem. I think there's kind of a tendency to simply throw everything at it.

## 2003 Application for Research Grants

The AAHS Research Grant Awards were established to further the purpose of the Association as stated in its Bylaws and to foster creativity and innovation in basic and/or clinical research in all areas pertinent to hand surgery.

### Awards and Eligibility

Grants will be made for a one year period to up to three investigators. Grants are available to all AAHS members. One of the investigators must be an **active** or **affiliate** member of the association.

### Grant Application

Applications may be obtained from:  
American Association for Hand Surgery  
20 N. Michigan Avenue, Suite 700  
Chicago, Illinois 60602

Applications (**an original plus seven copies**) must be received by the committee chair no later than **Friday, November 1, 2002**, in order for the judging to be completed in time and the recipients to be announced at the Annual Meeting.

The AAHS and the Research Committee are required by the IRS to document disbursement of grant funds. Award recipients will be required to sign a letter of accep-

tance and submit a progress report once each year. The AAHS must be acknowledged as the source of funding in any presentation or publication. A final report must be submitted at the completion of the study. It is expected that the results of the funded research be submitted for presentation at an Annual Meeting within two years of the receipt of the award.

Funds must be returned to the AAHS if the study is not undertaken within twelve months of the receipt of the award.

Failure to follow these guidelines will disqualify the recipient from any further grant opportunities and from presenting any papers at the AAHS Annual Meeting for a period of three years following such default.

### Mail Grant Proposals to

Saleh M. Shenaq, MD  
Baylor College of Medicine  
6560 Fannin Street, Suite 800  
Houston, TX 77030



**Dr. Hendrickson:** Correct.

**Dr. Hunt:** I think that's maybe becoming a little more of a problem.

**Dr. Hendrickson:** Correct. I agree. At the intermediate stages, joint leveling, either radial shortening or capitate shortening may be the place to start. Vascular pedicle transfer would depend on the severity of the avascular necrosis and collapse.

**Dr. Bozentka:** That's interesting. That goes back to how controversial this process is. You look at that study from Argentina in which a metaphyseal core decompression of the radius and ulna were performed for patients with Kienbock's disease and the results were comparable to many other studies.

**Dr. Hunt:** Essentially the same outcome was achieved as with any other treatments.

**Dr. Hendrickson:** Right. The impetus for their study was the outcome of Kienbock's in a patient with a nondisplaced distal radius fracture. Of the study group, the average follow-up was about 10 years. Some of the patients had long term follow-up MRIs.

**Dr. Hunt:** If you have a patient with, let's say, a collapsed lunate, and ulna positive variance, what's your treatment of choice?

**Dr. Bozentka:** You're considering it a IIIA?

**Dr. Hunt:** I would say a IIIA.

**Dr. Bozentka:** I tend to do the capitate shortening osteotomy for an ulnar neutral or positive variance. I typically do not combine the procedure with a capitate hamate fusion. I have stayed away from the radial wedge osteotomies due to the conflicting opinions on that topic. The several biomechanical studies that have been performed have shown diametrically opposed results, with respect to whether the opening wedge versus closing wedge will decrease strain on the lunate.

**Dr. Hendrickson:** I agree. At times, caution and consideration of ulnocarpal impaction is useful. With

some of these cases, stepping back and carefully excluding ulnocarpal impaction is helpful. Reviewing the previous radiographs and other imaging such as MRI is useful in avoiding the wrong surgical journey.

**Dr. Hunt:** How do you make that distinction, Dr. Hendrickson? Sometimes you'll see a patient who will be tender over the lunate and will have some cystic changes, not just on the proximal ulnar corner of the lunate, but maybe diffusely over the lunate. Depending on your diagnosis, the treatment alternative may be exactly opposite.

**Dr. Hendrickson:** Correct.

**Dr. Hunt:** How do you ferret that out?

**Dr. Hendrickson:** Well, I think that's a very good question. I go back to confirm the patient's history, specifically the details of any injury and the progression over time. Again, review of the previous imaging is valuable. But I agree with you. I'd be interested to see what you and Dr. Bozentka thought.

**Dr. Bozentka:** There are a number of patients that are referred to my office that have been given the diagnosis of Kienbock's disease that ultimately are found to have ulnar impaction syndrome.

On examination patients with ulnar impaction syndrome will tend to have more of their pain ulnarly and tenderness just distal to the ulna. In Kienbock's disease, the pain and tenderness is more dorsal and central about the wrist. Those patients with Kienbock's will more often have swelling or limited motion of the wrist compared to those patients with ulnar impaction syndrome.

Changes on the MRI that occur at the proximal ulnar aspect of the lunate, less than half of the lunate is involved, and there is a ulnar neutral or positive variance tends to lead me toward the diagnosis impaction syndrome. Whereas changes on the MRI that occur more in the radial aspect of the lunate and greater than half of the

lunate is involved tends to be given the diagnosis of Kienbock's disease.

**Dr. Hunt:** If you're riding the fence in terms of diagnosis, what do you do? Is there a procedure or test that might treat both possibilities or is it just a matter of waiting until you have the diagnosis more well defined before instituting treatment?

**Dr. Bozentka:** This may be the patient that I'll immobilize for a period of time. Sometimes I'll immobilize them for about three months, repeat the MRI to see if there's been a significant change or progression of process.

**Dr. Hendrickson:** I agree. Another option would be arthroscopy. Arthroscopy can help discriminate between Kienbock's and ulnocarpal impaction.

**Dr. Hunt:** Arthroscopy, prior to your eventual procedure, is a good alternative if you're really up against the wall as far as diagnosis, you've done everything you can in regard to physical examination and radiologic testing and you're still uncertain. I have utilized it for that purpose with good results.

Does anybody have much experience with Kienbock's disease occurring in the younger population?

**Dr. Hendrickson:** Well, the few cases that I've seen have been high school or junior high women athletes. The injuries were related to softball or gymnastics is what I've seen. The literature re-enforces the uncommonness of Kienbock's in the pediatric population. Less than 1% of the reported cases of Kienbock's are in the young child or adolescent. Injury, particularly, sports injuries,

*continued on page 14*



**AT THE INTERMEDIATE STAGES, JOINT LEVELING, EITHER RADIAL SHORTENING OR CAPITATE SHORTENING, MAY BE THE PLACE TO START.**

**MARK HENDRICKSON, MD**

## AROUND THE TABLE

continued from page 13

are noted. Relationship to cerebral palsy is also noted.

**Dr. Hunt:** Recently I had a 12 year old patient and I was struck by the fact that these kids simply do better.

**Dr. Hendrickson:** Correct.

**Dr. Hunt:** Their symptoms sometimes improve with immobilization and if they eventually go to surgery, they tend to resolve their symptoms more completely than the adults I've treated.

**Dr. Hendrickson:** Correct. They seem to revascularize much better, heal and revascularize.

**Dr. Hunt:** Ms. Shimko, have you seen many kids come through with this disease?

**Ms. Shimko:** No, I have not seen small children or women come in to the clinic with this disease.

Primarily, I have seen the disease process in men working on an assembly line or an industrial injury.

**Dr. Hunt:** Let's talk a little bit about rehabilitation. How do you rehabilitate somebody following a pedicle bone graft or some other procedure that doesn't involve immobilization of the wrist?

**Ms. Shimko:** Stage II?

**Dr. Hunt:** Let's say a patient with stage II disease who underwent a radius shortening and insertion of a vascularized bone graft.

**Ms. Shimko:** Okay. Without external fixation?

**Dr. Hunt:** Yes.

**Ms. Shimko:** I would treat this similar to a wrist fracture. Usually the day of surgery, I would instruct the patient on edema control techniques, bandage care, gentle active range of motion of the digits, the elbow and the shoulder. Once the bandage is removed, and the type of immobilization is applied, whether it is a cast or splint, the patient will continue with range of motion exercises and edema control technique. After the desired length of immobilization with a cast or splint, a gentle wrist range of motion program is started along with scar management, edema control techniques, functional range of motion, functional activities to restore independence and ADLs.

**Dr. Hunt:** How early should that motion be started in a patient like this?

**Ms. Shimko:** Usually I've seen patients about a week after surgery to start a gentle range of motion.

**Dr. Hunt:** Do you feel as comfortable with that kind of early motion with the pedicle bone graft?

**Dr. Bozentka:** If I put a pedicle bone graft in, I tend to hold them a little bit longer before I'd start range of motion. Since the pedicle bone graft is just placed within the lunate, I tend not to be as aggressive. I may hold these patients for four weeks before I start range of motion. Certainly edema control measures and range of motion of digits, elbow and shoulder are important early on.

**Dr. Hunt:** What do you think, Dr. Hendrickson?

**Dr. Hendrickson:** I agree, especially knowing that the canine studies demonstrated at least a two week threshold. For caution and protection, I tend to hold them for four weeks. I also limit loads for about a year after the surgery.

**Dr. Hunt:** Are there any particular instructions you give to patients regarding the vascular bone implantation in terms of smoking cessation etc.? Or are those factors of little consequence?

**Dr. Hendrickson:** Smoking is probably more difficult on a pedicle bone flap, in contrast to free tissue transfer. So, I do everything I can to discourage them from smoking. At every visit, I document their smoking quantity and their understanding the negative impact on their healing.

**Dr. Hunt:** Are there any other subjects that are interesting to you all that you feel would be good to discuss now?

**Dr. Bozentka:** How about salvage procedures? Let's talk about the patients with a stage IIIB.

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Hand Surgery  
Quarterly

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Autumn  
2002

## HAND THERAPY PROFILE

### Janice F. Pagonis, MS, OTR/L, CHT

**Personal:** Born April 28, 1951, married 25 years this October, and living in the suburbs north of Pittsburgh, PA.

**Education:** M.S. in Health Related Professions, 1984 University of Pittsburgh; BSOT, 1976 Tufts University; ASOT, 1971 Mount Aloysius Junior College.

**Employer:** Allegheny General Hospital, Human Motion Rehabilitation in Pittsburgh, PA treating out-patients with hand traumas and injuries.

**AAHS Involvement:** Attended my first meeting this January in Cancun. Applied for Affiliate membership this May and look forward to becoming an active and participating member.

**Best Part of My Job:** Splinting, problem-solving and working with clients to regain their self-confidence and independence in their routine activities and return to prior life roles.

**Major Accomplishments:** Lecturing to occupational and physical therapy students at four local universities/colleges; publishing articles in *AJOT & Orthopaedic Phys Ther Cln of North Amer.* publishing a chapter on "Documentation" in a management text, successfully lobbying for licensure of occupational therapists in Pennsylvania and having the opportunity to be an active licensure board member for 5 years.

**Clinical Specialties:** Adult hand trauma and orthopedic injuries.

**Greatest Challenge:** Having successful outcomes in the managed care environment.

**Three Words That Describe Me:** Responsible, tenacious, concerned. **H**



**JANICE F. PAGONIS, MS,  
OTR/L, CHT**

**Dr. Hendrickson:** Right. Specifically, I would like comments on PRC and maybe even limited fusions.

**Dr. Hunt:** I must admit that the patients I've seen who have been treated with a proximal row carpectomy have usually been referred in, because it's not a procedure I perform for this particular problem very often. Based on that patient population, I don't think they do as well, but I have no good explanation. I use a PRC for SLAC wrist reconstruction and other diagnoses but in this particular patient group, it seems to me not to be as successful. Has anyone else noticed that?

**Dr. Bozentka:** Do you think it's related to the change of the lunate facet of the radius that these patients have?

**Dr. Hunt:** My experience is that the articular surfaces in patients with stage IV disease seem much better preserved than I would have expected from the radiographs. So I don't know. I would like to blame it on that, but I don't know.

**Dr. Hendrickson:** I think that's probably what it is though. I think there's some level of articular injury that escapes a very detailed evaluation.

**Dr. Hunt:** Regarding the treatment of stage IIIB patients, though there are a lot of options, I must admit I tend to lean toward a scaphocapitate arthrodesis. Partially I lean in that direction because I think it's an easier operation to do successfully than an SST arthrodesis and because some of the studies have shown that the force transference and the load taken away from the lunate may actually be a little greater than occurs following an STT arthrodesis.

**Dr. Bozentka:** My treatment is very similar. I'd consider an inter-carpal arthrodesis for stage IIIB and typically I do a scaphocapitate fusion as well.

**Dr. Hendrickson:** I would agree for the same reasons.

**Ms. Shimko:** With STT fusions there is a restricted amount of range of motion, especially in radial deviation. These patients do not achieve full radial deviation. With the SC arthrodesis procedure, do you notice that also there's limitation in radial or ulnar deviation?

**Dr. Bozentka:** Certainly you do see limitations in radial deviation as well.

**Dr. Hunt:** For me, inter-carpal arthrodeses, including SC or STT, all end up about the same, with about half the motion. Dr. Hendrickson, have you noticed a

big difference in outcome between these procedures?

**Dr. Hendrickson:** I agree with the observations regarding the SC and the STT fusions. The outcome seems to be fairly equivalent.

**Dr. Hunt:** Dr. Bozentka?

**Dr. Bozentka:** I would agree with flexion and extension. The results are fairly similar.

**Dr. Hunt:** Thank you for your insight into the treatment of this challenging and controversial disease process. **H**

# American Association for Hand Surgery Calendar

## 2002

**September 19-22, 2002**  
American Society of Hand  
Therapists 25th Annual  
Meeting  
Ottawa Congress Center  
Ottawa, Canada

**October 3-5, 2002**  
57th Annual Meeting  
American Society for  
Surgery of the Hand  
Phoenix, AZ

## 2003

**January 8-11, 2003**  
33rd Annual Meeting  
Hyatt Regency Kauai  
Koloa, Kauai, HI

**February 5-9, 2003**  
American Academy of  
Orthopaedic Surgeons –  
Annual Meeting  
New Orleans, LA

**April 10-12, 2003**  
Post Traumatic  
Reconstruction of the Upper  
Extremity  
Hotel Inter-Continental  
Chicago, IL

**July 18-20, 2003**  
Mid Year Board of Directors  
Meeting  
Casa Del Mar  
Santa Monica, CA

**September 17-19, 2003**  
American Society for Surgery  
of the Hand – 58th Annual  
Meeting  
Chicago, IL

## 2004

**January 14-17, 2004**  
34th Annual Meeting  
Westin Mission Hills  
Palm Springs, CA

**March 10-14, 2004**  
American Academy of  
Orthopaedic Surgeons –  
Annual Meeting  
San Francisco, CA

**June 11-14, 2004**  
Mid-Year Board of Directors  
Meeting  
St. Regis Monarch Beach Resort  
Dana Point, CA

**September 9-11, 2004**  
American Society for Surgery  
of the Hand – 59th Annual  
Meeting  
New York, NY

## 2005

**January 12-15, 2005**  
35th Annual Meeting  
Sanibel Harbor Resort  
Sanibel Island, FL

**September 22-24, 2005**  
American Society for Surgery  
of the Hand – 60th Annual  
Meeting  
San Antonio, TX

## 2006

**January 11-14, 2006**  
36th Annual Meeting  
Loews Ventana Canyon Resort  
Tucson, AZ

**September 7-9, 2006**  
American Society for Surgery  
of the Hand – 61st Annual  
Meeting  
Washington, DC

## 2007

**January 10-13, 2007**  
37th Annual Meeting  
The Westin Rio Mar  
Beach Resort  
Rio Grande, Puerto Rico

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## Inside This Issue:

- 1 *From the President: Mid Year Report*
- 2 *From the Editor's Desk*
- 3 *People in the News*
- 5 *2003 Annual Meeting Program at a Glance*
- 8 *Coding Corner*
- 9 *Leadership Profile: W. P. Andrew Lee, MD*
- 10 *Around the Hand Table: Kienbock's Disease*
- 15 *Hand Therapy Profile*