The State of the Association

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 is 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 State of the Association

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...
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?

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.
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. Chairman 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.

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) 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 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...
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**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>6:00–7:30 am</td>
<td>Continental Breakfast</td>
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<tr>
<td>7:00–7:05 am</td>
<td>President’s Welcome</td>
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<tr>
<td>7:06–7:10 am</td>
<td>Program Chair Welcome</td>
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<tr>
<td>7:11–7:15 am</td>
<td>Hand Therapy Program Co-Chair Welcome</td>
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<tr>
<td>7:15–7:30 am</td>
<td>The Epidemiology of Hand, Wrist, Elbow Injury in Sports</td>
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</tbody>
</table>
|               | **Avaluation Injuries: Why Won’t It Bend?**  
|               | *Moderator: Nash Naum, MD*                                   |
| 7:31–7:40 am  | Diagnosis and Treatment                                      |
| 7:41–7:50 am  | Rehabilitation                                               |
| 7:51–8:00 am  | Diagnosis and Treatment                                      |
| 8:01–8:10 am  | Rehabilitation                                               |
| 8:11–8:20 am  | Diagnosis and Treatment                                      |
| 8:21–8:30 am  | Rehabilitation                                               |
| 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                                  |
| 9:06–9:15 am  | Ligament Injuries—Gymnast’s Wrist                            |
|               | Richard Berger, MD                                            |
| 9:16–9:25 am  | TFCC Injuries                                                |
| 9:26–9:35 am  | Rehabilitation                                               |
|               | Terri Skirven, OTR, CHT                                      |
|               | Paul Brach, MS, PT, CHT                                       |
| 10:00–10:15 am| Break                                                        |
|               | **Tennis Elbow, Anyone?**                                    |
|               | *Moderator: Keith Bentsoan, MD*                              |
| 10:15–10:30 am| Is There a Scientific Rational for the Treatment of Elbow    |
|               | Tendonitis?                                                  |
|               | Kevin Platcher, MD                                            |
| 10:31–10:45 am| Arthroscopic Treatment of Tennis Elbow                       |
| 10:46–11:00 am| Golfer’s Elbow—Medial Epicondylitis                         |
| 11:01–11:15 am| Rehabilitation of Elbow                                      |
| 11:16–11:30 am| Is There Light at the End of the Radial Tunnel?              |
|               | Lee Delfin, MD                                                |
|               | **Nerve Injuries in Sports**                                 |
| 11:31–11:37 am| Hand and Wrist: Thumb                                        |
|               | Bowlers’/ Cyclist’s Palsy                                    |
|               | Brian Adams, MD                                               |
| 11:38–11:45 am| Nerve Injury about the Shoulder                              |
| 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**                                          |
| 12:16–12:25 pm| Hand Fractures in the Large Sports Medicine Practice         |
|               | Shannon Singleyary, MD                                       |
| 12:26–1:00 pm | Protective Splinting and Hand Gear for the Athlete at All    |
|               | Levels of Play                                               |
|               | Presidential Guest Speaker                                   |
|               | Art Retting, 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, CSc                               |
| 1:00–2:15 pm  | **Instructional Courses**                                    |
| 101           | Malalignment Bone and Soft Tissue Tumors                     |
| 102           | Disorders of the Distal Radioular Joint                      |
| 103           | Hand Fractures                                              |
| 104           | Management of Rheumatoid Hand and Wrist                      |
|               | Anthony De Santolo, MD                                       |

**Thursday, January 9, 2003**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>6:00–7:00 am</td>
<td>Coffee</td>
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<tr>
<td>7:00–8:10 am</td>
<td><strong>Instructional Courses</strong></td>
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<tr>
<td>105</td>
<td>Congenital Hand</td>
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<td>106</td>
<td>Wrist Reconstruction</td>
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<tr>
<td>107</td>
<td>Vascularized Bone Grafts</td>
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<tr>
<td>108</td>
<td>Advances in Upper Extremity Soft Tissue Coverage</td>
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<tr>
<td>109</td>
<td>Updates on Basilar Joint Arthritis</td>
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<td></td>
<td><strong>Concurrent Scientific Paper Session A-1</strong></td>
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<tr>
<td>8:30–8:36 am</td>
<td>Locked Percutaneous Intramedullary Nailing of Metacarpal and Phalangeal Fractures</td>
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<td>8:37–8:43 am</td>
<td>Motion Influencing Factors in Digital Fractures</td>
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<td>8:44–8:50 am</td>
<td>Acute vs Delayed Treatment of Open Distal Phalanx Fractures</td>
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<tr>
<td>8:51–8:57 am</td>
<td>A New Dynamic Spring Distraction Device in the Treatment of Proximal Interphalangeal Joint Fracture Dislocation</td>
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<tr>
<td>9:05–9:11 am</td>
<td>Discussion</td>
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continued
Program at a Glance

continued from page 5

Hand/Wrist Fractures

9:12–9:18 am Long-Term Results of Management of Gun Shot Wounds to Proximal Interphalangeal Joints Using External Fixator
C. Badravidh, MD
9:19–9:25 am Sports Casting of the Upper Extremity In-Season Athlete Ronald E. Palmer, MD
Jorge Orbay, MD
9:33–9:39 am Palmar Plating for the Fracture of the Distal Radius Masayuki Kanamo, MD, PhD
9:40–9:46 am Management of Distal Radius Fractures
Kevin Chung, MD, MS
9:47–9:53 am Discussion

Wrist

9:54–10:00 am Management of Dorsal Radiocarpal Ligament Tears
David J. Stlasky, MD, FRCS(C)
10:01–10:07 am A Salvo of Operations for Kienbock’s Disease with Unsuccessful Radial Osteotomy: Three Case Reports of a Vascularized Bone Graft Combined with Capitate Shortening and Carpal Tunnel Syndrome
Ryoaske K. Akinoki, MD, PhD
10:08–10:14 am Outcome Assessment of Wrist Denervation—A Review of 84 Patients
Michal Sauerbier, MD, PhD
10:15–10:21 am Stability of Scaphoid Waist Fractures in Response to Forearm and Wrist Rotation and the Role of the Radiocapacitate Ligament
Timothy R. McAdams, MD
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
Timothy R. McAdams, MD
10:29–10:35 am Discussion

Concurrent Scientific Session A-2

Tendons

8:30–8:36 am Cerebral Reorganization Following Flexor Tendon Lesion of the Fingers
J. Henk Coert, MD
8:37–8:43 am Biomechanical Analysis of Swan Neck Tendency in

Two-Stage Flexor Tendon
grafts
Shrikant J. Chinhalkar, BScOT, OTR, CH
8:44–8:50 am Reduction Flexor Tenoplasty for Repair of the Flexor Tendon Using Large Core Suture: A Biomechanical Cadaver Study
Houshang Saraz, MD
8:51–8:57 am Improved Technique of Reconstruction of the Finger Distal Extensor Aponeurosis by Dermal Bandelets
Alexandra V. Georgeou, Prof
8:58–9:04 am Endoscopic Trigger Finger Release
Tyson Cobb, MD
9:05–9:11 am Discussion

Carpal Tunnel Syndrome

9:12–9:18 am Percutaneous Trigger Finger Release Using a Push Knife
Michael John Dunn, MD
9:19–9:25 am Scapho-trapezial Synovitis as a Cause of Prolonged Pain after Carpal Tunnel Release
Hooman Soltanian, MD
9:26–9:32 am Eleven Year Follow-up of the Distal Single Incision Scope Assisted Carpal Tunnel Release
M. Ather Mirza, MD
9:33–9:39 am A Meta-Analysis of Randomized Controlled Trials Comparing Open and Endoscopic Carpal Tunnel Decompression
Achilles Thoma, MD, FRCS(C)
9:40–9:46 am Carpal Tunnel Syndrome in the Elderly
Mark F. Hendrickson, MD
9:47–9:53 am Discussion

Basic Science

9:54–10:00 am Wrist Flexor Spasticity Results in Dramatic Muscle Sarcomere Lengths
Richard Lieber, PhD
10:00–10:07 am Spastic Muscle Cells Are Shorter and Stiffer Than Normal Cells
Richard Lieber, PhD
10:08–10:14 am Effects of Tgf-Beta on Flexor Tendon Healing
Matthew Klein, MD
10:15–10:21 am Local Application of Low Molecular Heparin in Crush Injuries: an Experimental Study in rats
Yi-Hui Yan, MD
10:22–10:28 am Long-Term Outcomes in Surgical Rehabilitation of the Upper Limb in Tetraplegia
Vincent R. Hentz, MD
10:29–10:35 am Discussion
10:29–11:00 am Break
11:00–11:30 am President Invited Speaker
“Innovation in Hand Surgery”
Arnold-Peter Weiss, MD
11:30–12:30 pm Ask the Doctor

Total Elbow Arthroplasty (sponsored by DePuy)
William Geissler, MD
11:30–11:35 am Discussion
11:36–11:42 am Radial-Ulnar Synostosis after the Two-Incision Biceps Repair: a Standarized Treatment Protocol
Amir Salam, MD, PhD
11:43–11:49 am Reconstruction Essex-Lopresti Injury
Gary Kazui, MD
11:50–11:56 am Steroid Injection vs. Autologous Blood Injection in Lateral Epicondylitis
Miguel Saldana, MD
11:57 am–12:03 pm Lateral Antebrachial Cutaneous Nerve Entrapment at the Elbow
Nash Naami, MD
12:04–12:10 pm Outcome Following Repair of Distal Biceps Ruptures Using a Single Incision Technique and Early Rehabilitation
Thomas R. Hunt III, MD
12:11–12:17 pm Discussion
12:18–12:40 pm Break
12:41–1:10 pm Arthroplasty of the Hand
Robert Beckenbaugh, MD
Arnold-Peter Weiss, MD
1:11–1:30 pm International Speaker
“History of Hand Surgery in Venezuela”
Anthony DeSantolo, MD

Friday, January 10, 2003

6:00–7:00 am Coffee
7:00–8:15 am Instructional Courses
110 The Elbow
Mark Cohen, MD
111 New Frontiers in Wrist Arthroscopy
David Stlasky, MD
112 Use of Electrophoretic Shrinkage in Hand & Wrist
Steven Topper, MD
113 Upper Extremity Vascular Disorders
Neal Jones, MD
114 Management of Acute/Chronic Flexor Tendon Injuries
Scott Keizin, MD

Concurrent Scientific Paper Session C-1

11:36–11:42 am Radial-Ulnar Synostosis after the Two-Incision Biceps Repair: a Standarized Treatment Protocol
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“History of Hand Surgery in Venezuela”
Anthony DeSantolo, MD

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

Scientific Session B

Papers: Elbow

11:36–11:42 am Radial-Ulnar Synostosis after the Two-Incision Biceps Repair: a Standarized Treatment Protocol
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Steven Topper, MD
113 Upper Extremity Vascular Disorders
Neal Jones, MD
114 Management of Acute/Chronic Flexor Tendon Injuries
Scott Keizin, MD

Concurrent Scientific Paper Session C-1

Wrist

8:30–8:36 am Capsulodesis for Chronic Scapholunate Dissociation
Steven L. Moran, MD
8:37–8:43 am The Outcome of Isolated Lunotriquetral Interosseous Ligament Tears Treated by Ulnar Shortening Osteotomy
M. Ather Mirza, MD
10:29–10:35 am Discussion

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. Miszaffar, MD

8:37–8:43 am Toe Transfer in Hand’s Functional Improvement
Alexandra V. Georgescu

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

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

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

9:05–9:11 am Discussion

Nerve

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

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

Arthritis

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

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

10:08–10:14 am An Update on Radioulnar Fusion for Radiocarpal Arthritis Due to Malunion of Distal Radius Fracture
Jaijeung Ryu, MD

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

10:22–10:28 am Long Term Follow-up of Proximal Carpeytopathy for Advanced Stage Kienbock’s Disease: An Average 15 Year Follow-up
Boyd Christopher Lumden, MD

10:29–10:35 am Discussion

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 Delton, MD

202 Multi-disciplinary Pain Management
James Campbell, MD

203 Repetitive Making for Major Limb Replantation
Peter Annaloo, 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 Kazon, MD (ASPN President)

8:15–9:30 am Combined Panel: Functional Restoration Following Devastating Injuries
Rod Lentz, 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

Hand Surgery Quarterly
Autumn 2002 7
Kienbock’s Disease

Stiles T. Jewett, Jr., MD, FACS

As 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 Stahle’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.

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. Since a specific code does not exist for this procedure it can be coded utilizing 25645 – open treatment of carpal bone fracture and 20900-51 – Bone graft, any donor area; minor or small.

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 –
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 Kienbock’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.

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.

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 repetitive 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 aborization 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 seems 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 Sickle 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. Zaidemberg 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 revascularization 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 pedicled implantation was augmented by including some local muscle.

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**ALTHOUGH ULNAR NEGATIVE VARIANCE CERTAINLY IS A SIGNIFICANT FACTOR WHEN WE LOOK AT THE BIOMECHANICAL STUDIES, THERE ARE OTHER SKELETAL FACTORS THAT MAY BE INVOLVED.**

**David Bozentka, MD**
However, neither transfer consistently demonstrates revascularization. In contrast, the bone flap described by Zaidemberg 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 supraretinacular artery (2, 3 ICSCA) 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.

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**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.

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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 acceptance 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 capititate 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 capititate shortening osteotomy for an ulnar neutral or positive variance. I typically do not combine the procedure with a capititate hamate fusion. I have stayed away from the radial wedge ostetomies due to 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
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 flap 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 pedicled 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.
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 easier operation to do successfully than an STT 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.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event Details</th>
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| 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 |
| 2004 | 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 |
| 2005 | 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 |
| 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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