

HAND SURGERY

QUARTERLY



FROM THE EDITOR'S DESK

Time to Give Up Surgical Prejudice?

The focus of this issue is osteoarthritis of the thumb carpometacarpal joint. This is a common problem, so it would be reasonable to expect that we know a lot about the treatment of this condition. It would be reasonable, but it is not the case. Despite all the published descriptions of treatment for this condition, and their results, we actually know very little about which treatments are most effective, and when they might be indicated.



PETER C. AMADIO, MD

Why is this? Because almost all papers on the condition report on a single treatment, for a specific indication, usually based on the surgeon's prejudice (euphemistically called preference). Men? Why of course, they all require strong grip, and everyone knows that arthrodesis gives the strongest pinch. Does it? The literature does not confirm either the premise or the outcome. Women? Why of course they all have low demand, so anything will work for them. Resection arthroplasty without ligament reconstruction? With, by any of

dozens of methods? Implants of silicone, metal and plastic, solid metal, constrained or not: apparently all give excellent results, except that the proponents of one refuse to consider the use of the others. Why?

One reason is that our prejudices make us reluctant to give up something that works in our own hands, for something that works in someone else's, unless the difference is very large. And that is not likely to be the case for thumb CMC arthritis, where series after series, regardless of method of treatment, report patient satisfaction rates of 80-90%, with function and pinch strength in the acceptable though perhaps not quite normal range.

Another reason is that the results in individual patients vary enough, that it takes very large series to show meaningful differences. Davis et al (*Trapeziectomy alone, with tendon interposition or with ligament reconstruction* *Journal of Hand Surgery - British* Volume 22:689-94, 1997) have pointed out that, to demonstrate a 20% difference in pain relief (say, between 60% of patients reporting pain relief versus 80%—a pretty large difference) would require a prospective, randomized trial with at least 90 patients in each arm—and that is only if you would be willing to accept a 20% probability that, by chance alone, you would still fail to detect a difference that big! (The probability of detecting such a difference, then, would be 80%,

a value also referred to as the statistical power of such a study). Even for a common condition like thumb CMC arthritis, it is not likely that a single center could collect so many patients in a reasonable period of time.

So now we have reason number three, which could be called the 'herding cats' reason—the difficulty of getting large numbers of doctors to agree on the same inclusion and exclusion criteria, treatment arms, and the randomization process itself.

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Time to make plans to attend the 34th Annual Meeting. For a preview of Hand Therapy Specialty Day, the Annual Meeting and Scientific Program and Combined Day Program, turn to the "Program at a Glance" starting on page 4.

EDITOR'S DESK

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Enrolling several hundred patients and following them for several years might take the resources of a dozen hand centers. There have been few studies that large in hand surgery, and there probably will be fewer yet in the future, for the fourth and final reason: money, or, rather, the lack of it.

Twenty years ago, most large clinical trials were done in academic centers. Multicenter trials required a relatively uncomplicated pooling of data by cooperating clinicians, with little in the way of regulatory oversight. No more. As a result of a number of true scandals in large clinical trials, starting in Nazi Germany and including the infamous Tuskegee study, in which patients in a control arm of a 1940's era US Public Health Service-funded project were left with untreated syphilis for decades, and other US studies in the 1960's in New York City where senile and mentally retarded inmates of chronic care hospitals were injected with cancer cells and hepatitis virus, clinical research is no longer left to unsupervised investigators. The result has been better and more ethical research, but it has come at a price, quite literally, both administrative and financial. Today, all clinical research in the US is governed by the NIH's Office for Human Research protection (OHRP), which has mandated the use of Institutional Review Boards (IRB's), data safety management boards (DSMB's) and a host of other research subject protective mechanisms. More recently, the Health Insurance Portability and Accountability Act (HIPAA) has also mandated patient privacy protections that affect the conduct of clinical research.

As a result of the increased cost (as much as \$1000-\$2000 per enrolled patient in some cases) and the administrative complexity of such large trials, they are beyond the means of most small- to medi-



AAHS/ASSH Summit

AAHS leadership met with the leaders of ASSH during the Mid Year Board of Directors Meeting in Santa Monica, CA, in July. From left to right: Susan Mackinnon MD, AAHS Vice President; Dennis Phelps MD, ASSH President; Roy Meals MD, ASSH President-Elect; Mark Anderson CAE, ASSH Executive Director; Laura Downes Leeper CAE, AAHS Executive Director; Richard Berger MD, PhD, AAHS President-Elect; and Allen Van Beek MD, AAHS President.

um-sized organizations. Now most large clinical trials are funded by industry, and conducted by for-profit clinical research organizations (the largest, Quintiles, Inc., took in almost \$2 billion last year). Such trials focus on new products, and are designed to show that the products are safe and minimally effective. The NIH and large foundations fund most of the other large clinical trials, which are more likely to compare competing treatments. Yet such organizations are not willing to spend millions on mediocre research, or on research that is never completed, which is why they look to centers and investigators with a proven track record of success in multicenter trials.

We hand surgeons have few exemplars to point to. It is almost a catch-22: we won't be able to get funding for any large multicenter trials until we have had a few successfully completed ones. The situation is not completely hopeless; I am aware of five published multicenter studies of carpal tunnel syndrome (3), nerve conduit repair (1) and flexor tendon surgery (1). But all these compared a new product to standard therapy; I am not aware

of any multicenter studies in hand surgery that compared two accepted therapies, as would be necessary to determine, for example, if arthrodesis is a better option than arthroplasty in patients meeting certain criteria, or to compare resection arthroplasty with and without ligament reconstruction. Moreover, only one of these five studies was completed in the last five years; consistent with the trends noted above, academic clinical trials are becoming less common over time, not for lack of interest, but for lack of resources.

Although I would like to be optimistic, I believe that, realistically, there are probably many conditions for which we will never have the evidence we need to confidently choose between treatment alternatives. That should not deter us from trying, though. The NIH and large foundations, such as the Robert Wood Johnson Foundation, do support large clinical studies, when they are well designed, appropriately powered, and perceived as being likely to be successfully completed. It won't come easy, but we really have no choice: our patients, and our professionalism, require it. **H**

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FROM THE PRESIDENT

Faster than the Speed of a Lifetime

The lack of access to information during the recent multi-state blackout was often cited in new reports. The need for information during crises for either national events or even private events becomes the keystone of rational decision-making. When were the subways going to run, how long before power returns: what happened seemed to dominate. The quest for clinical information to make appropriate care-giving decisions is a pressing need for practicing surgeons. Questions are many, and the answers are often experience-

or opinion-based, rather than data-based. What is the best treatment plan for those unusual disease processes? What prosthetic device is most durable? What time parameters off work are justified? Are my outcomes comparable to others? What therapy modalities are efficacious?

In a previous newsletter, the growth of information volume and the speed with which it is disseminated was discussed with the recommendation that AAHS members obtain broad

band high speed internet access rather than what is referred to as dial up access.

The problem with information as it presently exists on the Internet is the authenticity and accuracy of the information. Readers beware. Increasingly, the savvy web surfer will look to professional organizations, such as the AAHS websites at handsurgery.org, for information. Personal websites and corporate websites can be very informative while others often have bias and can be disgustingly self-serving and inaccurate.

Information is knowledge acquired in any manner. Knowledge is defined as the body of information, facts, and ideas accumulated by mankind. It is this body of information that is crucial to hand surgeons because it impacts our patients' lives and livelihood. In the past, information was accumulated by individuals, institutions or cohorts of individual experience with hand problems. This information often required a lifetime of experience to accumulate before changes were implemented or concepts confirmed. Is the accumulation of clinically relative information always going to be slow while the dissemination of information is at the speed of light? The answer is a resounding no!

In the past, we all answered mailed or faxed members surveys with a few questions about complications, anesthesia, results, or even what products we used. My answers were always based on my recall and estimation of numbers, and never actual information. The information might have been reliable: it was obtained based on recall, usually had very limited specific data, and always required information tabulation. I always groaned when approached for my

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ALLEN L. VAN BEEK, MD

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AAHS 34th Annual Meeting

January 14–17, 2004
Westin Mission Hills
Palm Springs, California

Hand Therapy Specialty Day Wednesday, January 14, 2004

Hand Therapy Through the Ages

6:30–7:00 am	Coffee
7:00–7:05 am	President's Welcome <i>Allen Van Beek, MD</i>
7:05–10:20 am	Joint Dissociation and Fracture Management Through the Ages <i>Moderator: Sue Michlovitz, PT, PhD, CHT</i>
7:05–7:20 am	Fracture Healing <i>Julianne Howell, MS, PT, CHT</i>
7:20–7:50 am	Distal Radius Fracture <i>Brian Adams, MD</i> <i>Sue Michlovitz, PT, PhD, CHT</i>
7:50–8:20 am	Scaphoid Fracture <i>Mark Baratz, MD</i> <i>Georgette Fogg, OTR/L</i>
8:20–8:50 am	Monteggia Fracture <i>Robert Goitz, MD</i> <i>Gail Groth, PT, CHT</i>
8:50–9:20 am	Radial Head Fractures <i>Paul Brach MS, PT, CHT</i> <i>Dean Sotereanos, MD</i>
9:20–9:50 am	TFCC <i>Richard Berger, MD</i> <i>Paul LaStayo PT, PhD, CHT</i>
9:50–10:20 am	Elbow Dislocation <i>Robert Slater, MD</i> <i>Aviva Wolff, BSc, OTR/L, CHT</i>
10:20–10:30 am	Break
10:30 am–12:00 pm	Nerve Injuries Through the Ages <i>Moderator: Dean Sotereanos, MD</i>
10:30–11:00 am	Diagnosis and Outcome of Complex Nerve Injuries <i>Christine Novak, MS, PT</i>
11:00–11:30 am	Evaluation and Management of Brachial Plexus Birth Palsy <i>Susan Duff, Ed.D, PT, OTR/L, CHT</i> <i>Scott Kozin, MD</i>
11:30 am–12:00 pm	Rehabilitation and Management of Complex Nerve Problems <i>Joan Collins OTR/L, CHT</i> <i>Allen Van Beek, MD</i>

12:00–1:00 pm	Lunch
1:00–3:00 pm	The Performing Artist: Then vs Now <i>Moderator: Keith Bengston, MD</i>
1:00–1:45 pm	History of the Harmonica in Blues Music: An Interactive Presentation <i>Mark Baratz, MD</i>
1:45–2:15 pm	Medical Management of the Performing Artist: Then Vs Now <i>Peter Amadio, MD</i>
2:15–2:45 pm	Therapeutic Management of the Performing Artist: Then vs Now <i>Lauren Valdata-Eddington, PT, CHT</i>
2:45–3:00 pm	Discussion
3:15–4:30 pm	Concurrent Instructional Courses
101	Reconstruction of the Burned Hand <i>Bruce Brewer, MD</i> <i>Roger Simpson, MD</i>
102	The Mangled Hand and Replantation <i>W. P. Andrew Lee, MD</i> <i>Bradon Wilhelmi, MD</i> <i>David Ruebeck, MD</i>
103	Extensor Tendon Repair and Replantation <i>Joe Banis, MD</i> <i>Scott Kozin, MD</i> <i>Wyndell Merritt, MD</i> <i>Miguel Saldana, MD</i>
104	An Overview of Wrist Biomechanics <i>Brian Adams, MD</i> <i>Richard Berger, MD</i>
3:15–5:15 pm	Concurrent Instructional Courses
105	Distal Radius Fractures <i>Alan Freeland, MD</i> <i>William Geissler, MD</i> <i>Amy Ladd, MD</i> <i>Robert Medoff, MD</i> <i>Jorge Orbay, MD</i> <i>Matthew Putnam, MD</i> <i>Scott Wolfe, MD</i>
6:30–7:30 pm	AAHS Welcome Reception Enjoy sparkling conversations and beverages while sharing stories and experiences at the AAHS reception. Visit with old friends and meet new ones while tasting delicious hors d'oeuvres and enjoying a cocktail. A good time awaits one and all! Cost: \$95 per person for an additional ticket

Thursday, January 15, 2004


6:00–7:00 am	Coffee
6:30–7:40 am	Instructional Courses
106	Phalangeal Fractures <i>Mark Baratz, MD - Extraarticular Phalangeal Fractures</i> <i>Alan Freeland, MD - Intraarticular Phalangeal Fractures</i> <i>Maureen Hardy, MD - Rehabilitation of Phalangeal Fracture</i>
107	Management of the Arthritic Wrist <i>A. Lee Osterman, MD</i>
108	Creating Multimedia Presentations <i>William Dzwierzynski, MD</i> <i>George Landis, MD</i>
109	Treatment of Pediatric Traumatic Hand Injuries (Includes fractures) <i>Robert Russell, MD</i> <i>Bradon Wilhelmi, MD</i>
110	Rheumatoid Hand and Wrist <i>Brian Adams, MD</i> <i>Matthew Tomaino, MD</i>
7:00–5:00 pm	Poster Session Open
8:00 am–4:00 pm	Computerized Instructional Courses Individualized learning stations focusing on latest techniques from a number of well known physicians.
7:45–8:45 am	Concurrent Panels
	Management of Radial Nerve Palsy <i>Scott Kozin, MD</i> <i>Susan Mackinnon, MD</i> <i>Steve McCabe, MD</i>
	Thumb Carpometacarpal Joint Disease (or Basilar Joint Arthritis) <i>Richard Berger, MD</i> <i>Richard Brown, MD</i> <i>A. Lee Osterman, MD</i>
8:45–10:21 am	Concurrent Scientific Paper Session
10:21–10:50 am	Break
10:50–10:55 am	AAHS Endowment <i>Miguel Saldana, MD</i>
10:55 am–12:00 pm	AAHS Keynote Speaker <i>Robert Gorlin, MD (tentative)</i>
12:00–12:20 pm	Break
12:20–1:20 pm	Concurrent Panels
	Computers in Your Practice: Photography, PDA's, Archiving, & Presentations <i>Keith Brandt, MD</i> <i>George Landis, MD</i>

FROM THE PRESIDENT

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opinion or recall regarding various maladies and now I consider it the Pony Express of data collection and information creation. This needs to change to better serve our patients that trust us with their care.

Outcome studies, clinical statistics, trend analysis, and procedure related sentinel events are becoming priorities by government, business, media, and patients. As individuals, we might accumulate significant data during our practice lifetimes. Taking a lifetime to prove a point of information seems a bit long in this, the informational era. Our society members, as a large cohort using specific fields and internet-based data accumulation software, could provide information crucial to a hand surgeon's clinical practice—well, if not at the speed of light, perhaps, at least at the speed of sound or something faster than the speed of a lifetime. I would urge AAHS members to become information providers. We can become a cohort of hand surgeons providing essential information to web-based databases creating information that either would never exist or take decades to collect.

It is my understanding that the American Society of Plastic Surgeons and the Plastic Surgery Educational Foundations TOPS program is one of a few cohort member-based surgical outcomes study program. The Association needs to begin, perhaps in cooperation with other organizations interested in hand surgery, to explore the process of clinical outcomes in hand surgery using web-based information collection and assessment. Those that entrust us with their care deserve it and some are beginning to require it. Are you ready to help? 

Hand Surgery
Quarterly

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Autumn
2003

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Failed Nerve Repair
Peter Amadio, MD
Larry Colen, MD
Christine Novak, CHT
Robert Russell, MD
Dean Sotereanos, MD

1:20–1:35 pm **2002 Vargas Award Winner**

5:30–6:30 pm **Family Programs:**

Home Video and DVD for Family

Planning for Your Financial Future

Tattooing Throughout the Ages

Friday, January 16, 2004

6:00–6:30 am **Coffee**

6:30–7:45 am **Instructional Courses**

- 111 Dupuytren's contracture
Lynn Bassini, CHT
Rod Hentz, MD
Mike Jabaley, MD
L. Scott Levin, MD
Nick Vedder, MD
- 112 Malignant Bone and Soft Tissue Tumors of the Upper Extremity
Peter Murray, MD
Stephen Trigg, MD
- 113 Peripheral Nerve Repairs
L. Scott Levin, MD
Moheb Moniem, MD
George Omer, MD
Miguel Pirela-Cruz, MD
- 114 Scaphoid Fractures
William Pederson, MD
Kevin Chung, MD
Mrenir Sheh, MD
- 115 Congenital Hand
Amit Gupta, MD
Simon Kay, MD

7:00 am–5:00 pm **Poster Session**

8:00 am–4:00 pm **Computerized Instructional Courses (Continuation)**

7:45–8:45 am **Concurrent Panels**

Nerve Decompression
Allen Bishop, MD
L. Scott Levin, MD
Nash Naam, MD
Walter Palermo, MD
Dean Sotereanos, MD
Robert Spinner, MD
Tsu-Min Tsai, MD

Clinical Challenges for the Past Presidents
Peter Amadio, MD
Robert Buchanan, MD
Alan Freeland, MD
Wyndell Merritt, MD
Robert Russell, MD
William Swartz, MD
Allen Van Beek, MD

8:45–10:21am **Concurrent Scientific Paper Session**

10:21–10:50 am **Break**

10:50–10:55 am **AAHS Endowment**
Miguel Saldana, MD

10:55 am–12:00 pm **Presidential Speaker**
TBA

12:00–12:20 pm **ASSH & ISSH Presidential Remarks**

12:20–1:20 pm **President's Luncheon / AAHS Annual Business Meeting/Presidential Address**

1:30–2:15 pm **AAHS Board of Directors Meeting**

AAHS/ASRM/ASPN Combined Day Program Saturday, January 17, 2004

6:00–6:30 am **Coffee**

6:30–7:30 am **Instructional Courses**

Nerve Conduits
David Chiu, MD
A. Lee Dellon, MD
Yasushi Nakao, MD

Obstetrical Brachial Plexus Palsy
Howard Clarke, MD
Peter Waters, MD

Soft Tissue Coverage of the Hand (Micro and Non-micro)
Gunter Germann, MD
L. Scott Levin, MD
William Lineaweaver, MD
Julian Pribaz, MD

Preoperative and Intraoperative Nerve Assessment
Steve McCabe, MD
Walter Palermo, MD

Major Limb Replantation
Chris Pederson, MD
William Zamboni, MD

7:30–7:40 am **Presidents' Welcome**
Allen Van Beek, MD, AAHS
Ronald Zuker, MD, ASRM
Keith Brandt, MD, ASPN

7:40–8:55 am **Panel: New Approaches to Nerve Reconstruction in the Upper Extremity**
Warren Breidenbach, MD
Susan Mackinnon, MD
A. Lee Osterman, MD
Christopher Oberlin, MD

8:55–9:40 am **Presidents Invited Lecture: John W. McDonald, III, MD, PhD**

9:40–10:15 am **Coffee/Exhibits Break**

10:15–11:15 am **Outstanding Nerve Paper Presentations**

11:30 am **8th Annual Day at the**

President-Elect Richard A. Berger MD, PhD

Richard A. Berger MD, PhD has been an enthusiastic supporter of the Association and partici-

part in Association activities since being introduced to the AAHS by his mentors, partners and friends, Past Presidents Robert D. Beckenbaugh, MD and Peter C. Amadio, MD in 1991. Dick cites the mission of AAHS, the quality and character of its members, the inclu-

sive nature of the Association and its proud tradition of providing the highest level of education opportunities in a relaxed and conducive atmosphere as truly unique and attractive features of the AAHS.

Dick was born in Austin, Minnesota, only 40 miles from where he lives today. He has been to other places in the interim, though. After growing up in western Colorado, he attended Midland College in Fremont, Nebraska where he graduated in 1976 with B.A. in Biology and Natural Science. He immediately entered the University of Iowa Medical Scientist Training Program, where he was awarded his PhD in Anatomy in 1980 and his MD in 1984. His doctoral thesis was entitled "A Three-Dimensional Kinematic Analysis of the Carpal Bones" and his doctoral advisor was Adrian E. Flatt, MD. During his studies at the University of Iowa, he became acquainted with a number of wrist investigators, resulting in a founding membership in the International Wrist Investigators Workshop. Pursuing some of the questions that devel-

oped during his doctoral studies, he spent his senior year in medical school as a Fulbright Scholar, studying the anatomy of the wrist ligaments with Prof. Dr. Johann M. F. Landsmeer at the University of Leiden, The Netherlands. Upon returning to the United States, he began his residency in Orthopaedic Surgery at the University of Iowa, which was completed in 1989. He then moved back north to Rochester, MN where he completed his year of fellowship training in Hand Surgery at the Mayo Clinic. He was invited to join the Division of Hand Surgery in the Department of Orthopedic Surgery, where he has remained to this day.

Dick is currently a Professor of Orthopedic Surgery and Anatomy and is the Director of the Mayo Clinic Hand Surgery Fellowship. He has developed a clinical practice with special emphasis on disorders of the wrist and distal radioulnar joint, paralleling his research emphasis, but maintains a general spectrum of patients as well.

Dick's wife, Evelyn, is an accomplished immunohistochemist, enjoys gourmet cooking, and is directing his laboratory for his NIH grant on mechanoreceptors of the wrist joint ligaments. His daughter, Andrea, is completing her bachelor's degree at Central College in Pella, IA. Dick enjoys playing golf and the piano, as well as amateur astronomy, billiards, cross-country skiing and

managing his lawn and garden.

Using his previous experiences in the governance structures of the AAHS and learning from previous leaders, Dick will strive to continue to streamline the administrative process for efficiency without negatively affecting the quality of membership benefits and services, to work with the Central Office staff to continue its inclusivity of membership and to make AAHS as relevant as possible to attract new, young members, and to work closely with the American Society for Surgery of the Hand in areas of mutual interest where the power of both organizations together is greater than the sum of the individual powers. Included in these mutual interests are physician advocacy, public awareness, attracting young physicians into the rewarding field of hand surgery, and medical liability. **H**



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Thumb CMC Arthritis

The moderator for this topic is **Ron Palmer, MD**, Assistant Clinical Professor, University of Illinois Medical School, Peoria, Illinois, and Orthopedic Institute of Illinois, Great Plains Sports Medicine, Peoria, IL. Joining him on the panel are surgeons **Brent Bamberger, DO**, Program Director of Orthopedic Surgery at Grandview Hospital, Ohio University, **Leonard Bodell, MD**, Chief of Hand Service, Phoenix Orthopaedic Residency Program, Phoenix, AZ, and Clinical Professor Orthopaedics Midwestern University, Glendale, AZ, and **Jeff Garst, MD**, Orthopedics, Private Practice, Peoria, IL, and hand therapist **Paul Brach, PT, CHT**, Centers For Rehab Services, Hand Rehabilitation Center, Pittsburgh, PA.

Dr. Palmer: We're going to be talking about basilar thumb pain, in particular carpal metacarpal arthritis. Dr. Bodell, when you have a patient come into the office with a history of thumb pain unrelated to trauma, how do you proceed with the evaluation?

Dr. Bodell: I think the first thing is the basics. In this particular instance, we want our history to include gender, age, occupation, and hand dominance. Next, proceed with information such as the length of time they've had the pain, and whether it is activity related. Does it occur with pinching, with gripping, with small objects or large objects? What are their avocations, as thumb-based arthritis tends to be more gender specific, more in women than men. Do they sew or do things that have traditionally been more female activities that generate a lot of load on the basal joint of thumb from pinch activities. Then, of course, you go to your physical exam to try and localize the pain. I want to differentiate an arthritic process from say, a de Quervain's, or perhaps an arthritis that may be more isolated to the STT joint, or a combination of problems such as CMC arthritis with carpal tunnel syndrome.

Dr. Palmer: Dr. Garst, do you proceed the same way?

Dr. Garst: I look for the same things, but by far the most common prob-

lems I see with radial sided wrist and thumb pain is either trigger thumb or CMC arthritis or de Quervain's. With x-rays, I start looking for other things, such as STT arthritis, or even radial carpal or radioscaphoid arthritis.

Dr. Palmer: I think you made an excellent point. When someone comes in with a complaint of radial sided pain, my opinion is probably 90% or 95% of the radial sided pain is either the most common condition which is trigger thumb, the 2nd most common which is osteoarthritis of the trapezial metacarpal joint, or de Quervain's syndrome. If there is radial sided pain, palpitate volarly over the MCP joint and if there is tenderness or any history of triggering, then think trigger thumb. If there is a positive Finklestein's test and tenderness over the radial styloid then this is de Quervain's syndrome. Then, if there is pain at the base of the first metacarpal and a positive grind test, it is likely carpometacarpal arthritis. If you evaluate these three entities, you have included the majority of radial sided pain problems that come unassociated with trauma.

In the evaluation of the patient suspected of CMC arthritis, does everyone get three views of the base of the thumb or is there any other particular view that you like to see?

Dr. Bodell: I think one of the easiest views to get for patients is actually a PA view of the thumb. It often will give you a reasonably good view not only of the CMC joint, but you can sometimes get good configuration, if done well, of the STT and you can sometimes even unload the trapezium and trapezoid, or what some people might call the TT joint. I find that lateral views are not valuable even though we always look for subluxation. I tend to get a PA oblique and use that with the PA view as my two standard views. The other view I often like, I learned it as a Betts or Clements view. It's basically an offset view where you take your hand and oblique it to the x-ray plate at about 45 degrees, and come in at a slight angle with your x-ray. It not only gives you a full view of the trapezium, but it gives you a good CMC view and then isolates the STT and TT joints. It helps me to stage the disease and then use that in the selection of surgical technique. Is this a patient who I really should do a trapeziectomy for, or some type of suspension, or is it



I EXCISE THE TRAPEZIUM AND FILL THE SPACE WITH GEL FOAM. I THEN USE THE ABDUCTOR POLLICIS LONGUS TO WEAVE AND REINFORCE THE CAPSULE.

RON PALMER, MD

AROUND THE TABLE

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somebody where I can do something just to the CMC joint?

Dr. Palmer: Dr. Garst?

Dr. Garst: I also sometimes get a stress view. I have the patient put both palms on the plate, with the thumbnails together, and push together against both thumbnails. That will accentuate the subluxation. Also, that allows me to show it to the patient and see how much they're coming out, and to see if they're starting to get in trouble on the other side.

Dr. Palmer: Dr. Bodell, you mentioned you stage CMC arthritis. Can you tell us a little bit more about the staging?

Dr. Bodell: I have tended to use a combination of the two different stages that Eaton and Littler described and combined with that of Adrian Flatt. In Stage

One, we may not see any changes on x-ray, or we may see some distraction of the joint because of fluid. Stage Two is where you have some loss of joint cartilage, small osteophytes, and if any subluxation at all, less than 25%. Although we see patients in all stages, the Third Stage is when patients seem to have the most discomfort. The osteophytes are larger, but there's virtually no joint space left. The second form of Phase Three may be people who have a degree of instability, say 50% or greater. The Fourth Stage was classically described as either complete destruction of the CMC joint or a

combination of advanced CMC and STT arthritis. I've subdivided the Stage Fours' as an A which is very advanced CMC change, generally without much subluxation. Stage Four B's have a lot of subluxation and therefore have typically developed secondary hyperextension changes, or even ulnar collateral ligament changes and instability of the MCP joint. Stage Four C's has pantrapezial arthritis. I create an algorithm for treatment based upon those stages.

Dr. Palmer: Dr. Garst, what's been your experience in the radiologic findings of osteoarthritis in these different stages related to the symptomatology of the patients?

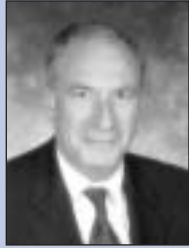
Dr. Garst: Well, like most other disorders in the hands, they don't always correlate. Most of the times when the patients have classic symptoms, you'll get x-rays and it will show you the arthritis. But occasionally you'll see patients for another problem and it shows terrible disease there and they're not complaining of that. Most commonly you'll see an older person with a Colles fracture, you get the x-rays and you notice that they have terrible arthritis at the CMC joint when you're looking at the fracture but they don't complain of that, and they never did.

Dr. Palmer: Well that's an excellent point. I'm sure we've all seen that symptoms don't necessarily correlate with radiographic findings. Often there will be significant degenerative changes radiologically, but the patients have little or no com-

plaints. I've also seen a number of patients that have rather severe disease and have had significant symptomatology, but as time goes on their symptoms tend to improve with no treatment. So it's important to remember that radiologic changes don't necessarily correlate with symptoms.

What about other diagnostic tests, such as a bone scan? Dr. Bodell?

Dr. Bodell: A bone scan is something I would use—infrequently—if I had concern as to a more systemic problem, or if I was thinking about some kind of a bone tumor or soft tissue mass that didn't seem to make sense. If a patient comes in with terrible x-ray changes, maybe even some obvious deformity, and yet the pain is not reproducible on the exam, or it seems like it's elsewhere, I might use differential injection into a joint or into the first dorsal compartment, or maybe even into the carpal tunnel to try to see if we can't differentiate the real reason the patient is here. Often



I THINK ONE OF THE EASIEST X-RAY VIEWS TO GET IS A PA VIEW OF THE THUMB...IT GIVES YOU A GOOD VIEW OF THE CMC, STT AND EVEN TT JOINT.

LEONARD BODELL, MD


Hand Surgery Quarterly

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Autumn 2003

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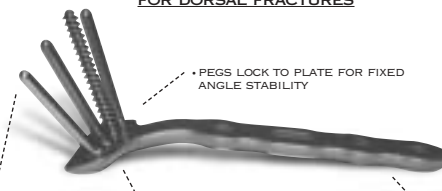
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times they'll say "I'm here for pain" and yet when you do a Tinel's, where you do provocative tests for carpal tunnel, they say, "yes, that's it," and you say, "well, isn't that numbness?", to which they agree. But they thought it was pain. And it really wasn't the more obvious problem, which was the thumb base. So to differentiate that, if the patient is not a reliable historian, I might do injections. But I haven't resorted to bone scans all that frequently.

Dr. Palmer: Does anyone use MRI in the evaluation of this arthritis?

Dr. Garst: Not unless I think there's some sort of zebra involved. I agree completely with Dr. Bodell, I rarely order a bone scan. I use differential injections frequently if I'm a little confused as to whether they have de Quervain's or CMC arthritis. If they have some sort of a mass, if I'm suspicious of Kienbock's disease or if their pain is near the radial side of the wrist but not quite there, then I'll get an MRI. But CMC arthritis is usually a fairly straightforward diagnosis for me.

Dr. Palmer: Let's go on. Once you've made the diagnosis of CMC thumb arthritis, what is your treatment plan? Dr. Bamberger?

Dr. Bamberger: Non-operatively first. If a patient has failed medical treatment I may consider an injection. This depends on the age of the patient. I do not like injecting younger patients because of the risks with the steroid itself. However, in an older patient I will try an injection of kenalog and xylocaine. I also use a hand-based thumb spica splint. I immobilize that area for a short period of time and then I have them wean out of it.

Dr. Palmer: Dr. Garst, do you have anything to add?

Dr. Garst: I usually start with a splint and an anti-inflammatory if they don't have gastrointestinal problems. And if they're still having symptoms in a month or six

weeks with the splint, then I'll give them an injection. I prefer conservative care before I think about surgery.

Dr. Palmer: I think that's a good idea because surgery is certainly not without problems. Mr. Brach, tell us about splinting. How do you proceed at this point with the patient's care in therapy?

Mr. Brach: The goal of splinting for the CMC joint is primarily for pain relief and support with prehension activities. Whether or not it is hand-based or forearm-based is left up to the discretion of the treating physician. We favor the use of a hand-based thumb spica thermoplastic splint. This splint allows for wrist motion while still providing adequate support of the CMC joint. However, another consideration that must be taken into account is the patient's activity level. In more active patients, a neoprene splint may provide comfort to the patient while still providing some support.

Dr. Palmer: Dr. Bodell, what type of thumb splint do you prefer for your patients?

Dr. Bodell: For most of our patients we use a hand-based splint. However, because of the heat here in Arizona, splint toleration is not always good. So we also use the neoprene as Mr. Brach mentioned.

From an anecdotal standpoint, I've also found that patients in the earlier stages of arthritis who come in on glucosamine and chondroitin sulfate report improvement in their symptoms, although not a reversal of the arthritis per se.

Our therapists have used home paraffin wax on patients with some degree of success. I'd like to ask you, Mr. Brach, what is your experience?

Mr. Brach: The patients who get paraffin baths really seem to enjoy it. It provides comfort and they do report some increases in mobility after undergoing paraffin treatments. I'll suggest that they purchase a unit for home, and then first thing in the morning, or afternoon,

or whenever their hands become stiff and tired, they give themselves a little bit of a treatment for some short term relief.

Dr. Palmer: Dr. Bamberger, what kind of splint do you prefer?

Dr. Bamberger: I like the hand-based splint because it allows the patient to maintain hand function. I think all the treatment points made by the panel, including glucosamine, paraffin, and anti-inflammatories, are important.

The difficulty in treatment is deciding how long will younger patients have pain, and when should we intervene? I offer non-operative therapies as long as they help. As far as glucosamine is concerned, patients have reported relief and I haven't seen any studies showing that it has harmed patients.

Dr. Palmer: I'd like to return to injections for just a moment. It's been my experience that some patients won't let you give them too many of these injections because they hurt, and other patients return and ask for them. Dr. Garst, how many injections do you give and how often do you give them?

Dr. Garst: Academy guidelines have suggested no more than 2 or 3 in the same location in a year's time. That's generally what I use for the CMC joint. If they're getting more than that, they need something done.

Dr. Palmer: Okay. If a patient has tried conservative treatment and he or she still comes into your office complaining that they can't live with the pain, what is your next step? Dr. Bamberger, what is your



I EXCISE THE ENTIRE TRAPEZIUM, TAKE THE ENTIRE FCR AND BRING IT THROUGH THE FIRST METACARPAL, SEWING IT TO ITSELF IN THE ARTHROPLASTY SITE.

JEFF GARST, MD

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surgical procedure of choice, and how do you make the decision to proceed?

Dr. Bamberger: In the 50- to 60-years-old, or the older patient where you can't get the needle in the joint, I do an abductor pollicis longus (APL) suspensionplasty, resecting the entire trapezium. I weave the slip of APL through the first metacarpal, underneath the FCR, through the 2nd metacarpal, and then suture it to the ECRL. The post-operative dressing is quite important. Care must be given so that you do not place the MP joint of the thumb in hyperextension. The thumb metacarpal needs to be placed in abduction and allow slight flexion of the MP joint

Dr. Palmer: Do you fill the space where you excised the trapezium with anything?

Dr. Bamberger: With gel foam and capsular closure.

Dr. Palmer: Dr. Garst?

Dr. Garst: I do a Burton-Pellegrini type operation. I excise the entire trapezium, take the entire FCR and bring it through the first metacarpal, sewing it to itself in the arthroplasty site. Then I close the capsule and use a thumb spica splint.

Dr. Palmer: Dr. Bodell?

Dr. Bodell: The procedure I favor is the more traditional Burton-Pellegrini, with ligament reconstruction, tendon interposition. I tend to use the whole tendon and

have not personally found difficulty with it. It gives you a good anchovy to fill the space, and I don't tend to use K-wires. We try to stabilize this with the tendon transfer and our dorsal capsular repair.

Dr. Bamberger: I don't use pins either. I think you need to make sure that you ABDUCT the metacarpal and that you do not hyperextend the metacarpal joint when you put on the post-operative splint.

Dr. Palmer: What about using the whole FCR versus only half of it?

Mr. Brach: Matthew Tomaino looked at the loss of the FCR to see if it contributed to any significant wrist flexion weakness. His results found basically no significant loss whatsoever of wrist flexion strength with the use of the whole tendon of the FCR.

Dr. Garst: I would reiterate that also. Patients just don't complain about using the whole FCR.

Dr. Palmer: In my 24 years of experience I've tried most every operation that has been described for this procedure. I used to use the Swanson silastic trapezial implant. I used it for years and was happy with it. Most patients also seemed to be happy with it. Many of the implants subluxed, but they didn't tend to have pain. I've yet to see silastic tenosynovitis in any of these patients. However, when the reports on silastic tenosynovitis came out, I quit doing that procedure. Today, I excise the trapezium and fill the space with gel foam. I then use the abductor pollicis longus to weave and reinforce the capsule much as Dr. Bamberger described. I have used a K-wire, but stopped as the wire seemed to be the primary source of problems. It's very important that to preserve the volar intermetacarpal ligament when you remove the ulnar bone spike from the trapezium between the first and second metacarpal.

Dr. Garst: If I may, I would disagree with one of your observations, Dr. Palmer, and that is the silastic

implant. I have revised a few of those that were painful and did have synovitis.

Dr. Palmer: There have been a number of reported problems with silastic implants and silastic synovitis is certainly a recognized complication. I didn't mean to trivialize that.

How about other operations? What about arthrodesis?

Dr. Bamberger: During my residency, we looked at Dr. Peter Stern's experience with arthrodesis of the basal joint and found that patients were satisfied with their result. In my experience, a younger patient who fails treatment for an intra articular fracture and develops symptomatic post-traumatic arthritis is a good candidate for a fusion.

Dr. Bodell: Could we just pose one caution, though, on fusions? There are thumbs, my own being a good example, that have a flat joint and little motion. In someone like me, a fusion is contraindicated, whereas in a young construction worker, with 60 degrees of MP motion, fusion is probably a good operation.

Dr. Bamberger: I agree 100%.

Dr. Palmer: We've operated on the patient. I immobilize my patients for 5 weeks in a thumb spica cast. When a pin was used, it is removed at 5 weeks and they are sent to the therapist. Dr. Bodell, how do you proceed?

Dr. Bodell: We hold them for 4 weeks and then begin circumduction exercises therapy. However, we work on IP and MP motion almost from the start.

Dr. Palmer: Dr. Bamberger, do you immobilize your patients post operatively?

Dr. Bamberger: We also use cast immobilization for about 4 weeks and then begin range of motion with the therapist. We've been trying to push the envelope in terms of starting motion earlier (at about two weeks), by using an interference screw into the 2nd metacarpal



IN A 50- TO 60-YEAR-OLD PATIENT...I DO AN ABDUCTO POLLICIS LONGUS SUSPENSIONPLASTY, RESECTING THE ENTIRE TRAPEZIUM.

BRENT BAMBERGER, DO

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to stabilize the tendon. With limited experience the patients have been quite pleased.

Dr. Palmer: Dr. Garst?

Dr. Garst: I'm a little bit more aggressive. I like to immobilize them in general for 4 weeks; however I agree with Dr. Bamberger that immediate post op dressing is very important. What I don't like is them getting a thumb adduction contracture post op because we didn't have anything between the thumb and index. So I make sure I get that thumb out in abduction. Then I normally keep them like that for 2 weeks and when I get the sutures out then I send them to therapy for a C bar, just between the index and thumb. I have them wear that for a few weeks, and then I start them on motion with the

thumb. While in the C bar, I have them start motion of the fingers.

Dr. Palmer: We haven't addressed the MCP joint. Can someone discuss their guidelines on how they address the MCP joint if there is hyperextension and when do they consider a surgical procedure?

Dr. Bamberger: If patients complain of pain at the MP joint, and have either radial/ulnar instability or hyperextension beyond 25 degrees, then I will do either a capsulodesis or volar plate advancement. If they have significant degenerative changes at the MP joint, I will consider an arthrodesis of the MP joint.

Dr. Palmer: Dr. Bodell?

Dr. Bodell: If it seems as though they have a zigzag collapse at about 10 degrees of hyperextension, I will

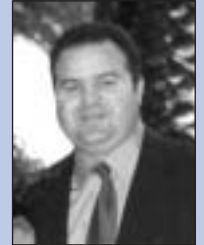
tend to pin them in a flexed position. That's assuming they can be flexed down. Some of them get into the hyperextension position and get fixed in that posture, like a fixed swan neck. I think those patients need a capsulodesis, sesmoidesis, or even a fusion. The patients with multiplanar instabilities, such as a game keeper's associated with hyperextension, those I tend to fuse automatically.

Dr. Garst: I've tried all the above and I've never been happy with any of them. I've tried just pinning it in flexion with pins in the metacarpal head into the shaft, and my experience has been to pull the pin out and they don't tighten down or shorten in place, they just stretch out and go back to hyperextension. I tried the pin with the volar plate advancement to augment that and try to tighten it down and they still stretch out and go back into hyperextension. And I tried fusing them and the patients aren't all that happy with fusion with the CMC arthroplasty, so I usually just leave it alone.

Dr. Palmer: Mr. Brach, we've got the patient out of the cast. How do you usually proceed?

Mr. Brach: The patient will arrive into our clinic at 4 weeks from the time of their surgery, where we will fabricate a forearm-based thumb spica splint, making sure to place the thumb in maximal abduction to decrease any occurrence of a web space contracture. A home exercise program will be instructed on wrist AROM out of the splint and thumb isometrics in the splint. They also start a formal therapy program for wrist and thumb AROM, edema

continued on page 12



**FOUR WEEKS FROM
THE TIME OF SURGERY,
WE FABRICATE A
FOREARM BASED
THUMB SPICA SPLINT
MAKING SURE TO
PLACE THE THUMB IN
MAXIMAL ABDUCTION.**

PAUL BRACH, PT, CHT

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control and scar mobilization at this time. At 5 weeks post-op, thumb opposition and flexion can be initiated. At 6-8 weeks post-op, grip strengthening as well as forearm strength can be started. No prehension activities can get underway until there is minimal subjective report of pain. Prehension can usually begin at 8-10 weeks. The splint can be d/c around this time as well if complaints of pain are to a minimum.

Dr. Palmer: Very good. We've covered this subject pretty well. I'd like to just bring up one case and throw it up for discussion and then we'll probably draw this to an end. Consider a 65-year-old white male, who has had a resection of the trapezium, and an anchovy-type procedure. He did well for 5 or 6 years with little pain. He returns and has complaints of renewed pain at the base of the thumb. Dr. Bodell?

Dr. Bodell: Oftentimes we think about more immediate pain after getting out of therapy, or 6 months later, maybe a year. Medial osteophytes could be a consideration. But if you don't get the whole thing cleaned out, you can get this impingement where you tighten everything up so much that the base of the first metacarpal can hinge on the base of the 2nd. And they often have pain either because of a residual osteophytes or just because of the position that we put it in. But I've not seen that at a 5-year time frame, and if anything I would think the soft tissues would tend to loosen up a little bit.

What concerns me in this particular scenario is the possibility of a progressive trapezoidal scaphoid arthrosis in the line with the index finger ray that might have been quite mild at the time and now has become more significant 5 years later. And the patient might have remained quite active because the

symptom stopped hurting. I would go back to those other x-rays that we talked about earlier, and particularly get a look at the best view and see if I can outline the trapezoid well and look at the scaphoid and trapezoid joint. Maybe if it looks like that might be the source, go ahead and do a local injection. And, if we can pinpoint that area,

go in and actually fuse the trapezoid to the scaphoid.

Dr. Palmer: The reason I brought this case up, I've seen 2 cases where patients have later come back with pain. When one tried to isolate the pain, it seemed to be more at the base of the index finger.

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2004 Application for Research Grants

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Thumb CMC Arthritis: A Challenge to Code

The Autumn issue of the Coding Corner deals with thumb CMC arthritis. Since we are dealing with a single diagnostic entity for this quarter's topic, the spectrum of codes that need to be discussed will be more limited than the last two *HSQ* Coding Corner columns. However, this subject is perhaps more difficult than the previous topics because there are many variations in operative procedures for treating thumb CMC arthritis. Furthermore, the CPT guide offers several different ways of coding for the same basic procedure.

The easiest coding considerations for treating CMC arthritis relate to the option of fusing the thumb CMC joint. This is coded for using 26841 (with or without internal fixation). If autogenous bone graft is used, then code 26842 is appropriate. If the thumb CMC joint is opened just for the purpose of a synovectomy, then code 26130 would be used. Some surgeons have reported using arthroscopy as an adjunct in treating early CMC arthritis. While no specific code exists for thumb CMC arthroscopy, it can be considered part of the wrist joint, and appropriate wrist arthroscopy codes should be used (29840—diagnostic; 29844—partial synovectomy; 29845—complete synovectomy; 29846—debridement).



LEON S. BENSON, MD

Thumb CMC Arthritis	
26481	Arthrodesis, carpometacarpal joint, thumb, with or without internal fixation
26482	Arthrodesis, carpometacarpal joint, thumb, with or without internal fixation; with autograft (includes obtaining graft)
26130	Synovectomy, carpometacarpal joint
29840	Arthroscopy, wrist, diagnostic, with or without synovial biopsy
29844	Arthroscopy, wrist, synovectomy, partial
29845	Arthroscopy, wrist, synovectomy, complete
29846	Arthroscopy, wrist, and joint debridement
25210	Carpectomy, one bone
20924	Tendon graft, from a distance, through a separate incision
25445	Arthroplasty with prosthetic replacement; trapezium
25447	Arthroplasty, interposition, intercarpal or carpometacarpal joints

Perhaps the most common procedure performed to treat CMC arthritis is some version of an excisional arthroplasty in combination with a tendon transfer. Usually at least two codes would apply. It is important to note that the only appropriate code for use of a tendon transfer used for an interpositional graft is 20924. Use of this code is dependent upon harvesting the tendon graft through a separate incision (such as the forearm when obtaining a flexor carpi radialis graft). The codes 25310 or 26480, which code for tendon transfers in the region of the forearm or wrist, respectively, are not appropriate because the transfer used in a resection arthroplasty is not an active tendon transfer designed to provide independent motor power for the affected joint.

As far the trapezium resection part of the operation, two codes may apply. One could use code 25210, which describes excision of the trapezium. More commonly used, however, is code 25447, which is more specific and describes "arthroplasty, interposition, intercarpal or carpometacarpal joints." Note that if the procedure

involved actually replacing part or all of the trapezium with a prosthetic device (and not a tissue graft), then use of a single code, 25445, would be appropriate.

The various procedures and corresponding codes for treating thumb CMC arthritis are summarized in the table below.

You Code It

A 54-year-old woman fails conservative care for her right thumb CMC arthritis pain and undergoes surgical care. The surgeon excises the entire trapezium and uses the ipsilateral split flexor carpi radialis tendon as ligament reconstruction/tendon interpositional graft.

Solution:

25447 + 20924
Arthroplasty (interpositional) + tendon graft, from a distance. **H**

AROUND THE TABLE

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Of these two patients, I arthrodesed the 2nd metacarpal joint and they got pain relief. I was curious whether anyone else had seen anything similar. I actually got the idea from Dr. Linscheid at Mayo Clinic. He had discussed this issue and described an arthrodesis of the 2nd carpometacarpal joint.

Dr. Bodell: Dr. Palmer, Linscheid's concern regarding the 2nd CMC really has to do with going back to the days when we were doing silicon implants and resecting some of the trapezoid in order to seat the silicon in. And his fear or concern, or his observation, perhaps, is that that procedure destabilized to some degree some of the ligamentous constraints in the 2nd CMC joint and that made them prone, over time, to subtle instability that led to subtle degenerative change that became painful and required fusion. I've not personally seen that in situations where the trapezoid is left untouched, but perhaps it does go on anyway.

Dr. Palmer: Well, I haven't seen the scenario but as far as the differential diagnosis of the hand, this is not the person that has sublock and we're looking at either the base of the index or the trapezoid and the scaphoid. I agree that at the time of the index surgery, look at the scaphoid and trapezoid and actually don't fuse that but resect that area. I haven't seen them down the road where they've destabilized. It makes a lot of sense with someone with a "metacarpal bosey" type of presentation, where going in and doing a fusion of the trapezoid and inflating metacarpal would help.

Very good. We'll call an end to this panel discussion and I thank everyone for joining us. **H**

HAND THERAPY PROFILE

Carol Page PT, CHT



Personal: After college, I moved to New York City to pursue my first career as a modern dancer. My interests then led to a change in career to orthopedic physical therapy and ultimately hand therapy. In addition to my work, I enjoy gardening, quilting, inline skating, and downhill skiing. I live in Park Slope, Brooklyn with my partner of 23 years.

Education: Certified Hand Therapist since 1998. Post-baccalaureate certificate in Physical Therapy from CUNY Hunter College. MFA in Dance and BS in Sociology from Florida State University.

Employer: Clinical Supervisor of Hand Therapy, Hospital for Special Surgery, New York City.

AAHS Involvement: I have applied for affiliate membership. At the 2002 meeting in Cancun, I gave a platform presentation of my research on stiff elbows and was awarded Best Therapist Paper.

Best Part of My Job: Working at an institution which is committed not only to the highest quality patient care, but also to research and education.

Major Accomplishments: Published in *Journal of Hand Therapy* ("Electromyographic activity in stiff and normal elbows during elbow flexion and extension") and *Techniques in Hand and Upper Extremity Surgery* ("Postoperative management of Dupuytren's contracture"). Platform/poster presentations at AAHS, ASHT, NYPTA, and Philadelphia Hand Conference. Co-chair of two courses on UE Trauma at Hospital for Special Surgery.

Clinical Specialties: Post-operative management of hand, wrist, and elbow injuries and disorders

Greatest Challenge: Fully pursuing all of my many interests in hand therapy, which include patient care, management, research and lecturing.

Three Words That Describe Me: Multifaceted, organized, enthusiastic. **H**

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American Association for Hand Surgery Calendar

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

May 21–23, 2004
Work Related Disorders
of the Upper Extremity
Wyndham Chicago

June 8–11, 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

July 15–17, 2005
Mid Year Board of
Directors' Meeting
The Lodge & Spa at
Cordillera

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

July 14–16, 2006
Mid Year Board of Directors'
Meeting
The Broadmoor Hotel

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

2008

January 9-12, 2008
38th Annual Meeting
The Westin Century Plaza
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Beverly Hills, CA

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