Collegiality in Cancun

Each time I attend a medical conference I am amazed at how much I learn. This year's AAHS annual meeting in Cancun was no exception. The educational program developed by Jesse Jupiter and Sue Michlovitz presented a combination of new research, instructional courses, and panel discussions that gave all of the attendants a lot to think about and take back to their practices'. Additionally, they certainly delivered on their theme of "Collegiality". The sessions were interactive and invited member participation throughout.

As someone who is a fully trained and experienced hand surgeon, you might think that there isn't all that much new material to cover. Many of us, including myself, become comfortable with a particular way of treating a disease or managing a complex problem. But nothing is more likely to make you question your "standard approach" than the free flow of ideas that occurs at a great meeting. When speakers honestly present their experiences, and attendees are given the opportunity to question and understand those experiences, there is an exchange of information that prompts everyone involved to reconsider their methodology. It is easy to discount or ignore a journal article based on its purported flaws. It is harder to ignore an idea when you can discuss those weaknesses with the authors and understand how they came to their conclusions. From this past meeting alone, I have modified my approach to carpal tunnel syndrome, carpal instability, and distal radius osteotomies.

Nothing is more likely to make you question your "standard approach" than the free flow of ideas that occurs at a great meeting.

What continues to draw me to meetings, however, is the collegiality I experience while there. In the hallways between sessions, during the dinners in the evening, and even an occasional night at the bar, you have the opportunity to meet great people with a variety of interests and backgrounds. More than a social event, though, it is a continued opportunity to learn. I learned my current preferred technique for tendon repairs at lunch one afternoon. I was prompted to learn the technique for percutaneous apponeurotmy by a colleague at dinner one night as well. It is in these informal settings that I feel I learn as much as during the formal meeting program.

What is unique about the AAHS annual meeting is that even the "formal" sessions allow for a tremendous amount of information exchange. There are multiple opportunities for questions and participation by the attendees. The instructional courses are intimate enough so that there is opportunity to gather the opinions of audience members that have knowledge and experience equal to that of the presenter. Therefore, we should congratulate Jesse and Sue, as well as, last year's president, Lee Osterman for creating an environment of education and collegiality that was beyond compare.

I would also prompt those members unable to join us in Cancun, to consider coming to next year's meeting in Las Vegas at the Red Rock Casino Resort and Spa. Removed from the glitz of the Vega Strip (but not too far), the Red Rock is a wonderful venue for another stimulating annual meeting. You may find that you learn a lot while having a great time!

Thomas Hughes, MD

On another note, I want to take a moment to introduce a new feature to the Hand Surgery Quarterly. In response to my column last month, which encouraged member involvement in the AAHS, I was contacted by Asif Ilyas. Asif proposed that we include a column in the Hand Surgery Quarterly that would discuss articles recently published in the AAHS' journal, *Hand*. I thought this would be a worthwhile addition to the newsletter and asked him to begin the column with this issue. The result: "Highlights of Hand". I would like to thank Asif for both his creative suggestion and his willingness to take on the project each quarter.

HAND SURGERY
Quarterly

President
Steve McCabe, MD, FACS
Editor
Thomas Hughes, MD

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

Jeff Friedrich

Jeff Friedrich is the current Junior Director at Large for the American Association for Hand Surgery. Dr. Friedrich has been an AAHS member since 2008 when his training mentor and former AAHS President Dr. Nicholas Vedder recruited him to the Association. He is also a current member of the AAHS Research Committee.

Jeff trained in plastic surgery at the University of Washington. He returned to Seattle in 2007 to be on the plastic surgery staff following hand and microsurgery fellowship at the Mayo Clinic in Rochester, Minnesota. His time in Seattle is split between Harborview Medical Center (the only Level I trauma center for Washington, Alaska, Montana, and Idaho) and Seattle Children's Hospital. At Harborview, his practice encompasses all aspects of hand surgery from carpal tunnel releases to complex repair and reconstruction of mangled hands, while his work at Children's is a mixture of congenital hand defects and low-energy hand trauma. He is Assistant Professor of Surgery and Orthopedics, and Adjunct Assistant Professor of Urology.

Dr. Friedrich insists that the educational component of his job is easily the most exciting and rewarding. He is involved in clinical and didactic teaching of plastic and orthopedic surgery residents, and is the associate program director for the University of Washington hand fellowship. In 2009, he was honored with the Division of Plastic Surgery's Resident Teaching award.

Jeff's research is devoted to the study of clinical outcomes in hand surgery. He is currently working on a prospective cohort study of distal radius fractures and return to work that is funded by an AAHS grant. He is also working with the Department of Rehabilitation at the UW to develop new hand surgery outcome instruments based on psychometric principles. This effort has the objective of developing metrics that have minimal respondent burden, and allow standardization of hand surgery outcomes.

Jeff Friedrich, MD

Dr. Friedrich's time outside of the hospital is devoted to his loving and supportive family. He is married to Allison, who is a children's media consultant. They have a daughter Elizabeth (8) who is a second grader, and a son Wilson who turns 4 in April. Together they enjoy traveling in the Northwest, and enjoying the natural beauty of that part of the country. Jeff is also an avid cyclist (mountain and road), and a craft beer enthusiast, but he assures us that he does not practice those two hobbies simultaneously.

President's Message (continued from page one)

collection, nobody might show up. No judgment either way. The "best papers" and posters will be selected in the usual manner for the usual format but if you are a member you can have the microphone at the "speakers' corner". **Send in your abstract and plan to participate in your annual meeting**.

We are planning to give the microphone to any member who wants to speak.. If you are a member and submit an abstract you will be accepted on the program for a presentation.

We will continue to share our meeting time and location with the ASPN and the ASRM. We have a close working relationship with these two organizations and meet to plan the location, format, and structure of our alliance. We will continue to jointly plan and execute our combined day on the Saturday of our annual meeting.

We are continuing our collaboration with the ASSH. Our member, Dan Nagle, is the current President of the ASSH and our organizations share many members. We have formed a joint committee for coding and a committee to trial and evaluate so called luxury vendors at our meetings. We will maintain our identity and unique qualities but there are issues that our two organizations can work on together, saving duplication of effort and expense. We have a positive working relationship with the ASSH and will seek out these opportunities.

We are continuing our relationship with organizations that represent the varied interests of our members. In addition to the ASSH we maintain our connections to the ASPS, the AAOS, and are building a relationship with the ASHT. Several of our members have in the past and currently hold leadership positions in these organizations.

Our organization is on a solid financial footing. Through careful management and attention to detail we have weathered the downturn and have a reasonable safety net in place. My first responsibility as the President is to take care of your money and make sure you are getting good value. We will not waste your money.

The Hand Surgery Endowment is stable. Ron Palmer is the current president of the endowment and will be asking the membership their thoughts on its future. Please participate in this information gathering when it is requuested.

If you would like to become more involved with the AAHS and its operation, please email me and pass along your interest, experience, and what you would like to accomplish. **If you would like to participate on a committee please let me know**.

Finally, to insure our future, please encourage your colleagues to join the AAHS. We have streamlined the membership process to make it easier to navigate. We have a great organization that delivers great service for its members.

If you have ideas for initiatives or improvements in our organization please let me know. Thanks

Steve McCabe
steven.mccabe@louisville.edu

Members Only Website Access: http://handsurgery.org/members/

AAHS Members have exclusive access to the Members Only area of the AAHS website. To access, simply log-in with your individual Username and Password.

- **Access HAND, the official Journal of the AAHS - This is the best way to gain full access.**
- **Go Green and receive electronic-only access to HAND**
- **Search the AAHS Membership database by name, geographic area, or specialty to find your colleagues.**
- **Sign up to receive Table of Contents alerts from HAND.**
- **Update and verify your Member Record for efficient and effective communication.** *Please be sure to note your specialty so your colleagues can find you!*

Specialty Day in Cancun

This year's "Specialty Day" in Cancun took on a new face and was a great success thanks to Sue Michlovitz, Specialty Day Chair and Jesse Jupiter, Program Chair. Their goal for this day was to expand and intensify the program; I think all would agree that this duo was successful. Their success was achieved by adding instructional courses to the morning program, making the overall format more collaborative between the surgeon and therapist, and encouraging more interaction with the audience. This year's specialty day had a vast array of courses to offer attendees, which provided something of interest for everyone.

The course and panel format for this year's conference took a twist from the format of the previous years. The instructional courses were interactive with more open dialogue than usual and the panels were very candid. In general, the speakers, who were both therapists and surgeons, shared their research and clinical knowledge and at times debated whether therapy or surgery would be the best choice. The open dialogue offered exploration of various concepts and views which peaked interest for later discussion of the possibilities. The attendees liked this open forum approach because questions could be asked and answered in a casual environment.

Being that the panels were lively, candid, and as secretive as Jesse Jupiter could be, most of the speakers had to answer some of the questions impromptu, from their gut, just as they do when patients ask questions in the clinic. The only difference here was that this was done on a stage in front of an audience. I think this was a "golden" opportunity to reinforce that there isn't only one correct answer, we can all learn from another, and it is acceptable to have different opinions or paths to reach the same goal. For those who attended specialty day, I think this "open" style allowed folks to let down their guard, feel comfortable to ask any level of question and to even offer their ideas.

The "Margaritas with Mentors" reception was a hit. Therapists and surgeons gathered to celebrate the growth of the AAHS journal - HAND, and to relax and enjoy conversation with peers. Some attendees continued on with educational conversation with their mentors while others relaxed after attending a knowledge-packed opening day at the conference. This reception provided time to meet new members and to find out more about AAHS and how you can become more involved in this organization. Special thanks to Springer for sponsoring this reception.

Georgette Fogg, OTR/L, CHT

After the Springer reception, everyone continued on to the official "Welcome" reception, which was graciously sponsored by Auxilium. This venue was fun for all ages and provided members an opportunity to meet significant others and families. There were AAHS members who have attended this conference for many years, and many new faces too, as this organization becomes more recognized from year to year. All who attended this event seemed to enjoy the Spanish ambience while enjoying conversation with both familiar and new friends, and all while making exciting new memories.

AAHS membership is as beneficial for the therapist as it is for the surgeon and any therapist who attends Specialty Day would have to agree that AAHS continues to make this known through its efforts to collaborate with therapists. In my opinion, as a therapist, AAHS is a hidden gem and I am grateful for my association with this organization.

Georgette Fogg, OTR/L, CHT
Sr. Affiliate Director

AAHS Annual Research Grant

Alexander Y. Shin, MD, Mayo Clinic

Condiut Wrapping after Nerve Repair - Functional Analysis

The Research Awards were established to foster creativity and innovation in basic and/or clinical research in all areas pertinent to hand surgery. AAHS Members, residents and fellows are eligible to apply. The deadline for grant application is **December 1st.** Guidelines and application are available at http://handsurgery.org/grants.

CODING CORNER

Eon K. Shin, MD

Since the round table discussion for this issue of *Hand Surgery Quarterly* is focused on phalangeal fractures, this column will provide coding tips for surgical treatment of these ubiquitous injuries.

Firstly, these fractures are generally identified as closed or open injuries. Editorial revisions were recently made to the codes used to report debridement of open fractures and/or dislocations. If the debridement is limited to the skin and subcutaneous tissue, code 11010 is employed. Likewise, if the debridement includes skin, subcutaneous tissue, muscle, and bone, code 11012 is used. In the case of phalangeal fractures, one could substitute debridement of tendon for muscle in the surgical description.

Secondly, these fractures can be treated via closed means, percutaneous pinning, or open fixation. For closed treatment of a proximal or middle phalangeal shaft fracture, codes 26720 or 26725 should be utilized. Code 26720 describes fracture treatment without manipulation. Code 26725 describes fracture treatment with manipulation and with or without digital traction. Similarly, codes 26740 and 26742 describe treatment of articular fractures about the metacarpophalangeal and proximal interphalangeal joints. Finally, codes 26750 and 26755 are applied for closed treatment of distal phalangeal fractures. For closed treatment of interphalangeal joint dislocations, codes 26770 and 26775 are used to describe reduction maneuvers without anesthesia and with anesthesia, respectively.

When phalangeal injuries are treated by percutanous pinning, code 26727 is utilized for skeletal fixation of proximal or middle phalangeal injuries. Code 26756 is used for distal phalangeal injuries. Finally, code 26776 describes pinning for interphalangeal joint dislocations.

Open fixation codes are similarly arranged. Code 26735 is used for open treatment of a proximal or middle phalangeal fracture. For articular fractures around the metacarpophalangeal or proximal interphalangeal joints, code 26746 is employed. Open treatment of distal phalangeal fractures—while probably not commonly performed—is described by code 26765. Open treatment of finger joint dislocations is coded by 26785.

Open Fracture Codes	
11010	Debridement including removal of foreign material at the site of an open fracture and/or dislocation (eg, excision debridement); skin and subcutaneous tissues
11011	Debridement including removal of foreign material at the site of an open fracture and/or dislocation (eg, excision debridement); skin, subcutaneous tissues, muscle fascia, and muscle
11012	Debridement including removal of foreign material at the site of an open fracture and/or dislocation (eg, excision debridement); skin, subcutaneous tissues, muscle fascia, muscle, and bone

Closed Reduction Procedure Codes	
26720	Closed treatment of phalangeal shaft fracture, proximal or middle phalanx, finger or thumb; without manipulation, each
26725	Closed treatment of phalangeal shaft fracture, proximal or middle phalanx, finger or thumb; with manipulation, with or without skin or skeletal traction, each
26740	Closed treatment of articular fracture, involving MCP or PIP joint; without manipulation, each
26742	Closed treatment of articular fracture, involving MCP or PIP joint; with manipulation, each
26750	Closed treatment of distal phalangeal fracture, finger or thumb; without manipulation, each
26755	Closed treatment of distal phalangeal fracture, finger or thumb; with manipulation, each
26770	Closed treatment of IP joint dislocation, single, with manipulation; without anesthesia
26775	Closed treatment of IP joint dislocation, single, with manipulation; requiring anesthesia

Percutaneous Pinning Procedure Codes	
26727	Percutaneous skeletal fixation of unstable phalangeal shaft fracture, proximal or middle phalanx, finger or thumb, with manipulation, each
26756	Percutaneous skeletal fixation of distal phalangeal fracture, finger or thumb, each
26776	Percutaneous skeletal fixation of IP joint dislocation, single, with manipulation

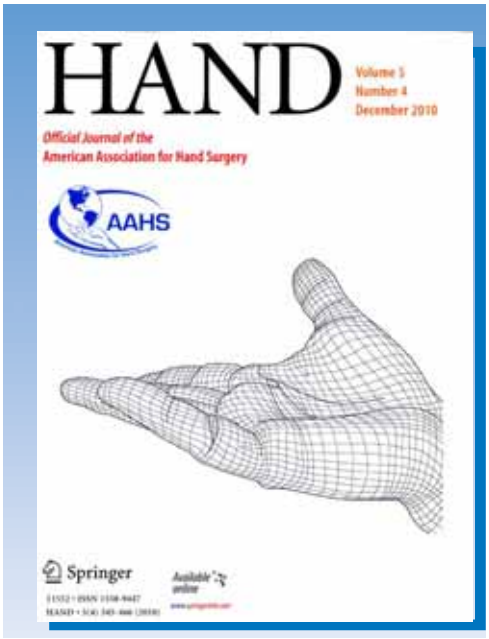
Open Fixation Procedure Codes	
26735	Open treatment of phalangeal shaft fracture, proximal or middle phalanx, finger or thumb, with or without internal or external fixation, each
26746	Open treatment of articular fracture, involving MCP or PIP joint, with or without internal or external fixation, each
26765	Open treatment of distal phalangeal fracture, finger or thumb, with or without internal or external fixation, each
26785	Open treatment of IP joint dislocation, with or without internal or external fixation, single

Highlights from *HAND*

The staff at the AAHS and the Hand Surgery Quarterly is pleased to announce the introduction of a new column: "Highlights of *HAND*." This column will focus on recent publications in the journal HAND, which is the official peer-reviewed journal of the AAHS. The journal features articles written by clinicians worldwide and includes current research, surgical techniques, review articles and case reports from the field of Hand Surgery.

HAND was launched in 2006 under the supervision of the Editor-in-Chief, Dr Elvin Zook, with the publisher, Springer. The journal began as a quarterly publication emphasizing clinical articles focusing on the clinical care and rehabilitation of the hand and upper extremity. Since inception, submissions and the distribution of the *HAND* has grown steadily. *HAND* is now under the leadership of the Editor-in-Chief, Dr Michael Neumeister.

In the first issue of *HAND* for 2011 (Volume 6, Issue 1) a number of provocative original articles are presented lending insight and perspective to our current practices:



- Comminuted radial head fractures treated with pyrocarbon prosthetic replacements.
- Hand numbness and carpal tunnel syndrome after volar plating of distal radius fractures.
- Repair of acute and chronic distal biceps tendon ruptures using the Endobutton.
- Is it true that injecting palmar finger skin hurts more than dorsal skin?
- Predictors of successful outcomes in first web space contracture release.

This issue also highlights a number of review articles:

- Perilunate injuries.
- Surgical approaches to the distal radius.
- Hand and foot abnormalities associated with genetic diseases.

Of note, LeBlanc et al present a multi-center prospective study analyzing the safety and utility of using a minor procedure room, rather than a main operating room, for procedures such as carpal tunnel release. In their study, which was drawn prospectively from five centers in Canada, they examine the infection rate of performing carpal tunnel surgery using only "field sterility" – which includes a procedure room, standard prepping of the hand, a single drape about the forearm, a modest tray of sterile instruments, sterile gloves and a mask for the surgeon (but no gowns), and an awake patient. Anesthesia was local only and placed by the surgeon, without sedation. No prophylactic antibiotics were given. The study included over 1500 consecutive carpal tunnel release cases, with no exclusions for co-morbidities. Using this approach, they identified a superficial wound infection rate of 0.4% (6 in 1504 consecutive carpal tunnel release cases) – and all were treated successfully with antibiotics alone. They also identified a 0% deep infection rate with no cases of deep post-operative infections, no incision and drainages, and no hospital admissions were noted. This provocative study is the first in the literature prospectively examining infection rates following carpal tunnel release surgery as the primary outcome. Furthermore it questions the economics of performing minor procedures such as carpal tunnel release surgery in the main operating room where the costs have been reported at four times or greater and with considerably less efficiency.

Asif Ilyas, MD

HAND is the official peer-reviewed Journal of AAHS, featuring articles written by clinicians worldwide presenting current research and clinical work in the field of hand surgery.

AAHS Members have complimentary access to HAND.

PANEL DISCUSSION: FINGER FRACTURES

I would like to welcome the panelists to discuss finger fractures, specifically the principles of treatment and rehabilitation of these challenging injuries. I would like to introduce the surgeons, Dr Don Lalond from Saint John in New Brunswick, Canada and Dr Dave Netscher from the Baylor College of Medicine in Houston. Dr Lynn Feehan will provide the therapists' perspective on these injuries. The 3 panelists are eminent figures in hand surgery and have several years of experience in treating hand fractures and I look forward to an insightful discussion.

Dr. Bindra: I'd like to begin the discussion with Dr. Lalond. Don, what do you think sets finger fractures apart from other fractures, such as fractures of the metacarpals or the wrist?

Dr. Lalonde: The issue that sets finger fractures apart the most is the proximity of the gliding tendons to the bone hematoma, scar, and callus. When finger fractures heal, the callus and scars trap the tendons, which can lead to significant stiffness. The bony healing can impede tendon gliding.

Dr. Bindra: Dr. Netscher, do you have any additional thoughts on why you might treat finger fractures differently than other injuries?

Dr. Netscher: I would agree very much with Don that the primary problem is the issue with motion. But then, perhaps more than anywhere else, we have the potential for instability of these fracture fragments because of the multiple deforming forces that occur across the fracture, and, then sometimes, it's just the tiny size of the fracture fragments that we don't really experience with the bigger bones.

Dr. Bindra: So the small size, the muscle imbalance, the closeness of tendons and the stiffness are all issues with finger fractures. Lynn, from your perspective as a therapist, what challenges do you face when you see somebody with a finger fracture compared to other fractures of the hand or wrist?

Dr. Feehan: I think it is essentially the same issues that have already been outlined and it is really just the challenges of finding a way to get these fractures moving early, with the understanding that there are a number of potential deforming forces that we need to counterbalance in order to allow motion to occur. The primary challenges are coming up with the individualized design of the orthosis and formulating an individual motion plan.

Dr. Bindra: Lynne, I know you have a lot of experience with finger fractures, having done your PhD work on finger fractures and early motion. I would like to ask you to tell me how you initially assess somebody who comes to you with a broken finger, referred by their primary care doctor or hand specialist. What does your initial workup consist of?

Dr. Feehan: The most important thing to me is not only seeing the patient, but making sure I have access to the full imaging of the fracture at the time of the evaluation with the patient. I think it is very important for the therapist to

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I do not feel plates should be the primary line of treatment for a phalanx... my concern is the 50 percent removal rate because of the scarring and the lack of space around the phalanx.

Randy Bindra

Moderator: Randy Bindra, MD
Professor, Department of Orthopaedic Surgery
Loyola University Medical Center, Chicago, Illinois

Panelists: Dr. David Netscher
Clinical Professor, Division of Plastic Surgery & Department of Orthopedic Surgery, Baylor College of Medicine, Houston, Texas
Dr. Donald Lalonde
Professor of Surgery, Dalhousie University, Saint John, New Brunswick, Canada
Dr. Lynne Feehan, PhD, PT, CHT
Michael Smith Foundation for Health Research, Post-Doctoral Fellow, University of British Columbia, Vancouver, British Columbia, Canada

Hand Table

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understand the fracture configuration and how it was treated; it really helps us understand how we can approach it. I try to make sure I have both the pre- and post-reduction imaging, as well as any post-fixation images. I am also really persistent in connecting with the referring physician or surgeon, so that I have either their operative report, or a direct feedback from them - what their initial impressions are about the actual stability of the fracture, so that we really know what we are working with from the outset. My hope is to be evaluating them at three days post-fracture, not at three weeks post-fracture.

Dr. Bindra: Dave, from your perspective, when somebody walks into your clinic with a broken finger, what factors are included in your initial assessment?

Dr. Netscher: Well, we might be seeing the patient a few days before the therapist, so there might be some more acute injury things that we need to assess, whether it is in the office or in the Emergency Room. Obviously, right up front, we need to make the distinction between an open and a closed injury, and then, still focusing on soft tissue, what has been the mechanism of the injury?
In other words, has there been a crush component? Because if we are going to have a lot more soft tissue swelling or soft tissue injury, it is going to make the subsequent rehab a little more difficult. Following that, I would focus on the extremity and the digits involved and the fracture, and both clinical evaluation and radiographic evaluation would go hand and hand. Some things that might be immediately obvious are whether it is a comminuted or non-comminuted fracture and whether there was any bone loss, for example. Then I would want to know and evaluate articular and extra-articular types of injuries. Then, particularly, the displacement of the fracture and rotational malalignment, as well as angular malalignment in two planes; radial to ulnar and volar to dorsal. Finally getting an impression as to the stability of the fracture and, more particularly, if I need to reduce the fracture by manipulation. Will it remain stable in that particular configuration?

Dr. Bindra: Don, we have talked about the x-rays and the clinical findings of the digit itself. With reference to your assessment of the patient, do you believe other factors matter such as hand dominance, their occupation and hobbies?.
Dr. Lalond: They certainly do. The type of treatment and the amount of postoperative movement I will allow depend greatly on the type of patient I have. For example, if I have a 16-year-old skateboarding, yahoo-type of patient, I will be much more likely to immobilize his finger fracture longer, knowing that he is much more likely to displace his fracture, and much less likely to become stiff than a 67-year-old. If I have an older person I can trust with early protective movement, I am going to go down that road, if at all possible. If I have someone who has numbness in their hand, either because of an old nerve injury or carpal tunnel disease, and they can't feel pain, then I am going to be very careful about early protective movement. If they are reliable and will not take pain killers, I will trust them with early protected pain guided movement. If I have a drug addict who is on opiates, I would not allow early protective movement. The type of brain connected to the finger is often more important than the finger injury itself in treatment decision making.

Dr. Bindra: It seems to me that there is a fracture personality and patient personality. Both factors affect how we treat these folks. Don, most of the patients we see in our clinic either have simple fractures or non-displaced fractures. Lynn did a study looking at 14,000 fractures a few years ago and found that 70 percent of them either needed no reduction or some very simple maneuver. Don, how do you treat someone who comes to you with a proximal phalanx fracture that is non-displaced or just a minimally displaced fracture?
Dr. Lalond: If one of you came to me with a stable proximal phalanx fracture, with minimal displacement and no scissoring that didn't require surgery, here's what I would do. I would give you a splint, mostly for the Hollywood effect, which is that it reminds you and those around you that you can't do all the things you normally do. When you get home and you go to open the door with your injured hand, you would see the splint, and you would likely stop and think, "…Maybe I should use the other

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I think that the energy of the injury and the soft tissue crushing are clearly going to play a very significant role...[additionally] positional splinting and early range of motion are critical.

David Netscher

Hand Table

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hand". I would use the smallest protective splint that might make life relatively easy for you. I would also tell you that there are two kinds of pain with any fracture. There is the pain of the break, which lasts for a day or two, and for which you could take Advil or Tylenol. As soon as that pain subsides, around day three or four, you will move into the pain of "Doctor it only hurts when I move." At this point, I would tell you to stop the pain killers and don't do what hurts. Listen to your pain. The human body did not spend two billion years evolving pain because it is bad for us. It is nature's only way for our fractured finger to tell us, "Hey stop that. I am trying to heal in here and you are messing it up."
Further, I would tell you that you can take your splint off in the evening while you are watching television after the kids were in bed. You could move your fingers as long as you are not on pain killers. Don't do what hurts, but don't baby it either. I would advise you to continue to wear the splint during the day when you are out and around as you may use your hand more than when you are sitting in the evening I would suggest that you wear your splint to bed at night so you don't smack your finger on the bed post while you are sleeping. Basically, the splint is for protection and to remind you that you can't do everything. You could certainly take it off to get in the shower in the morning.

Dr. Bindra: Any different thoughts, Dave?

Dr. Netscher: I would agree very much with splinting. It also serves another purpose in addition to a reminder. It does keep the hand in a functional position and it stops getting up into an extension position at the MP joint. In the intrinsic plus position, the extensor hood also acts almost like a splint to the fracture fragment because it forms a cowl over the proximal phalanx. But, I think splinting with intermittent motion, either with buddy taping or with free motion, is a very important component.

Dr. Bindra: Dave, when you are treating a fracture that is essentially non-displaced or you have reduced them and you feel they are stable, how often do you follow them up in your clinic?

Dr. Netscher: It would depend on the closeness with which I would work with the hand therapist and also on the patient personality. If I feel the patient is going to be responsible, they might be able to do their own therapy and I may see them a week later. I would want to see the patient within the week so that I could repeat an x-ray to be sure that the fracture that I initially felt was stable, is remaining stable, and of course, to assess their compliance with therapy, their range of motion, and the prevention of contractures. As we become more comfortable with the way that things are progressing, we could stretch out the visits.

Dr. Bindra: Lynne, you have done a fair amount of work on early motion after fractures. What is your approach now, having done your own studies and reviews on patients with a non-displaced proximal phalanx fracture?

Dr. Feehan: Essentially, I concur with what is being said in that these are ideal fractures to be moving early. We do need to remember that we still require some protection and support and the positioning of the splint is important. We only really need to keep the one finger that has been fractured contained within a hand based splint, there is rarely a need to include the wrist in the splint. For proximal phalangeal fractures it is important to have them resting in the splint with the MCP in flexion. And just as important is to have the IP joints resting in extension, particularly the PIP joints. They can have straps that that provide some form of immobilization when they are using their hand, but the straps can be removed to have them moving either under supervision, or when they want to use their hand for light functional use. It is also really important as mentioned before that they are resting in extension in the IP joints at night, because even with non-displaced fractures, they can still develop a PIP flexion contracture fairly quickly and it is important to get a handle on that ahead of time. If there is no reason why a non-displaced fractures can't be moved with early active motion, they don't need to be treated with an early controlled passive motion protocol. I would also keep in mind that just because they are a non-displaced fracture, they are still not going to be functionally stable or able to go without some sort of protection or support (with heavy use or sports) for up to three months. We need to think about the long term potential for re-fracture for these fractures and provide some sort of additional stabilization for when people return to work and sports.

Dr. Bindra: Lynne, do you have any special treatment protocol for a high demand individual such as an athlete or a musician or even s surgeon?

Dr. Feehan: It certainly depends on the sport or the type of musical instrument. If you have a young, strong, athletic male who is returning to high contact sports, I do make them sport specific splints that allows them to use their hand for sport specific function as necessary, while at the same time providing more support that would be required for normal daily functioning. If this is a throwing hand or they are holding a hockey

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AAHS 2011 COMPREHENSIVE HAND SURGERY REVIEW COURSE

Tumors of the Hand and Wrist
Edward Athanasian, MD

Compressive Neuropathies & CRPS
William Pederson, MD

Thumb Basal Joint Arthritis and Inflammatory Arthritis
Steven Moran, MD

Distal Radius Fractures
David Bozentka, MD

Distal Radioulnar Joint (DRUJ)
Peter Murray, MD

Scaphoid Fractures and Non-Unions, Kienbocks Disease
Robert Goitz, MD

Carpal Instability, Wrist Arthritis
Jose Ortiz, Jr., MD

Fractures of the Metacarpals and Phalanges
Jerome Chao, MD

Flexor & Extensor Tendon Injuries
Loree Kalliainen, MD

Infections of the Hand
E. Gene Deune, MD

Congenital Hand Differences
Robert Havlik, MD

Tendonopathies and Dupuytren's Contracture
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stick for example, the splint provides enough support that it really can withstand contact. I make fairly rigid splints and I try to position by molding them around the stick or into the position of throwing. If necessary, we can add additional padding to the splint so they can return to the sport. The same goes with early return to work. I make sure that they get the appropriate splints so that they can use their hand normally but still have protection during specific work tasks that may stress the healing fracture; rather than delaying a person's return to work until the time when the fracture is considered 'strong enough' for heavy work, which is many cases is several weeks following a hand fracture. With return to playing a musical instrument the biggest challenge is getting the person to gradually return to play and practice, using fatigue and pain as their guide. Musicians will not wear a splint that limits their ability to play their instrument so often you need to come up with creative solutions.

Dr. Bindra: Dave, what are your current indications for doing surgery on finger fractures?

Dr. Netscher: Surgery means a lot of things. It could mean a closed manipulation and locking fracture fragments in a stable configuration. Or, it could mean manipulation and pinning or open reduction. If I am going to intervene, one way or the other, I want to know about any rotational malalignment, because that just doesn't remodel. I would have a lower threshold for manipulation if there was a volar to dorsal angulation and perhaps be a little more inclined if there was an ulnar to radial inclination, because those also don't remodel as well as the volar to dorsal angulation. If there was rotational malalignment, that would generally go with a long spiral oblique fracture that tends to be unstable. If there is a displaced intraarticular fracture, of any significance, I think that is going to need intervention of some type. If there is significant shortening, intervention may be necessary. If it is an open fracture, it needs to be washed out. If there is severe comminution or bone loss, then clearly operative intervention is required, but that then gets to the more complex injuries.

Dr. Bindra: Don, do you believe that more serious injuries need more significant surgery?

Dr. Lalonde: I think the most important principles that guide when to operate or not operate rest on how the bones are going to heal. I never operate on a finger fracture with an open procedure where I cut skin and then look at the bones if I can treat the same fracture with closed manipulation and pinning. I think every time you open a fracture, you are going to create callus and scarring between the tendons and the bone in the surgical dissection planes, and you are going to generate stiffness that will last for months, more than if you can do it closed with pinning and untouched gliding tissues. With joint fractures, whenever I can get congruous joints with a percutaneous Kwire, I will do it., If I have a spiral fracture, with scissoring and rotational displacement, I will always try to do it closed with a pin first. If I am not successful with low power fluoroscope and pinning, then I will open.
I do all of my finger fractures wide awake now. I think that makes a huge difference because you can see how stable your pinning is. If you fire a couple of K-wires across your fracture, and then you get the patient to actively flex and extend through a range of motion under low power fluoroscopy, you can see if you need a third K-wire for more stability. What I try to do is to get functionally stable fixation. I am no longer interested in rigid fixation. All I want is enough fixation that the bone will heal in a good position of function.

Dr. Bindra: That is a very interesting perspective. Especially the "wide awake" philosophy, as it certainly seems to be a nice way to evaluate the motion, stability and alignment intraoperatively. Say you had an athlete and he has a spiral oblique proximal phalanx fracture that is rotationally unstable. Would you be tempted to open and put some screws in there to let him start moving early or would you still abide by your rule of trying K-wires first?

Dr. Lalonde: That's a great question. Screws may be more stable than K-wires. However, I don't think that young athletes take all that long to heal their finger fractures. You and I have operated on many three or four week old finger fractures in young people that are already solid as a rock. I am not sure that you gain that much strength, stability, or time out of sports with a screw versus a K-wire. If he were my son or my grandson, I probably would still go with K-wires. If I have to open it to put a screw in, I am going to generate a lot more scarring. I will take out the K wires when the finger fracture is not tender to palpation; usually 2 weeks or so.

Dr. Bindra: Dave, what are your thoughts on that in a young athlete with a spiral oblique fracture? What would be your favorite treatment for that situation?

Dr. Netscher: I agree that the time of healing is relatively short in the life span of an athlete or sport season. I think it is much more important to get fractures healed in a high school or college athlete, who is not necessarily an elite athlete, with least possible surgical manipulation to avoid adhesions and stiffness that are so significant

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of a problem. Get a fracture healed in three weeks. Aim to start protected range of motion and maybe full contact by six weeks. Doing an open reduction doesn't necessarily buy you a whole lot of time. A cannulated screw would be great, but done percutaneously. Still, I wouldn't allow a full contact elite sportsman to return to those full activities unless there was some sort of protective glove or bracing. They will destroy a 2 mm screw and a 2 mm screw is not going to be strong enough to resist the rigors they are going to put my bone fixation through. The fracture is not going to be healed before a minimum of three weeks even with primary bone healing. So, I am not sure that screw fixation adds a whole lot and I don't think I would be tempted to open it just for the sake of getting a more rigid fixation.

Dr. Bindra: Lynne, you probably see patients treated with different techniques referred to you for therapy after surgery. From a therapist's perspective, can you compare and contrast someone who has been fixed with K-wires versus somebody who has had an open reduction and screws placed? Can you give me the two scenarios and tell me which works out better from your perspective?

Dr. Feehan: Quite honestly, from my perspective I much prefer to see someone with K-wire fixation because my concerns about potential complications associated with the surgical interventions associated with plate and screw fixation. The results can be better and achieved more quickly if you move the fractures that have been fixed with K-wire fixations. Just because there are K-wires, it doesn't mean that we can't start with early motion. K-wires can also come out earlier before 4 to 6 weeks which also allows for better motion more quickly. If there is a screw , they still often require some form of protection or splinting during the initial stage of healing and also need ongoing support for return to a sport and work. Having a plate or screw fixing a fracture doesn't change how quickly they will return to the sport. What we gain from moving fractures with K-wires early is far fewer complications associated with either immobilization or from the additional tendon adhesion and joint contractures that we see frequently see when there is any form of plate or screw fixation, especially in proximal phalangeal fractures.

Dr. Bindra: Dave, what do you love and hate most about K-wires?

Dr. Netscher: I have really grown to love K-wires for phalangeal fractures because one gets very facile with using them. They are easy to use. They are excellent for the delicacy that you need for the small fracture fragments. You don't need to do the more significant soft tissue dissection, even if you are doing an open reduction. You can use them to manipulate your fracture in so many ways, as a joystick, especially the small little pediatric fractures where you've got a condylar neck fracture. You can "shishkabob" it, on the joint, get the joints aligned. That fracture fragment is almost too small to even try and hold between your fingertips. Once the K-wires stabilize it across the joint, then you can put it across your main bone fragment. So you can use K-wires so wonderfully as an instrument, as a tool to help you get the reduction, and then, of course, to stabilize the reduction. There are also the advantages of being able to be used percutaneously.
There are not too many things that I really hate about K-wires. There are a few technical tips that are important, obviously, so that you don't have cross K-wires maintaining a distraction of your fracture site. They don't give you the rigidity that perhaps a screw fixation can give you. And sometimes we tether the skin or the extensor mechanism. These are all little things that may be an irritation and there are little technical maneuvers to avoid them. But, perhaps the most significant thing that I dislike about K-wires is the irritation you can get at the skin, especially when we want to move fractures. One can get an irritation at the skin junction, or even a pin track infection. With pin migration they may work loose and back out. So, those are some of the things that can be really problematic with K-wires, although I find that doesn't happen very often.

Dr. Bindra: Do you get your patients moving actively after fixation with K-wires for proximal phalanx fractures?

Dr. Netscher: Depending on how close it is to the PIP joint and provided my fixation wires are not protruding immediately adjacent to the PIP joint, then I might have them do some gentle passive movement at the PIP and particularly at the DIP joint just to keep the extensor mechanism gliding and the intrinsics getting a little stretch on them, much as you would a Boutonniere deformity to get a little DIP range of motion. It is not vigorous range of motion, but it is started to maintain some of the elasticity in the extrinisic and intrinsic mechanism.

Dr. Bindra: Don, do you have any tips for us about how to prevent complications with K-wires, because I was taught as an orthopedic resident: "K-wires incinerate, because they do generate a fair amount of heat, they incarcerate the extensor mechanism and eventually suppurate.

Dr. Lalonde: Most of our finger fractures are fixed with K-wires. I have moved away from screws and plates almost entirely because the

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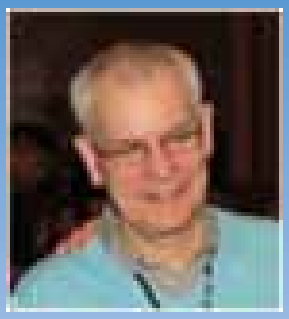
dissection required to put them in causes scarring that interferes with tendon gliding On day 3 or 4, we treat them with early protected movement just like flexor tendon repairs. For the first three days, they do absolutely nothing but keep their hand elevated. I tell them their hand is on strike. Collagen formation doesn't start for three days, and movement in that time will just generate bleeding and more future scarring and callus. They can take pain killers for the first 2-3 days. We have them come to see us between three and five days after K-wire fixation when we have our clinic with the hand therapists. The hand therapists and I have had a chance to assess the patient during the surgery because most of the K-wires are inserted in the clinic with the therapist present. We get a chance to find out what kind of patient they are when we are doing them wide awake. When they come back in 3-5 days, we already have a pretty good idea of who they are. If they are good, compliant patients, we will allow early protective movements; active movements of the fingers with the K-wires in there, just like we do with flexor tendons, for the same reason. If we have a stiff finger after a flexor tendon repair, we all consider that a failure. If I get a stiff finger after a finger fracture, I consider that a failure. So, we allow them to do early protective movement and we build them early protected movement splints. We get them to stabilize the fractures with their other hand, and we get them to actively move the joints just enough to keep the tendons gliding. Thirty degrees of IP joint movement is 5 mm of tendon glide. The main guiding principle is that they cannot be on pain killers, and that they must not do what hurts. This is pain guided early protected movement. If they are not able to do that without even Advil or Tylenol on board, or if they are not a reasonable cooperative patient, then we don't do early protected movement. . Reasonable cooperative patients are managed just like flexor tendon repairs. The way to stay away from trouble with K-wires is to listen to your pain and don't do what hurts. If you don't do what hurts, you are not going to irritate the skin as much.

The next important note is that K-wires don't need to stay in a long time for most fractures. We know that radiological union in fingers is useless. The radiologist will tell us that the finger fracture is not united. You and I will go in there and operate on it and it is as solid as rock. The clinical exam is the most important indicator of healing. If it doesn't hurt when you press on the fracture, it is healed. That is when I take my K-wires out. I remove most of my K-wires at 2-3 weeks. The younger they are, the less time they need the K-wire in there. It also depends on the fracture. If it is a long spiral fracture with a lot of bone contact, you don't need the K-wire in there nearly as long as if you have a small piece of condyle of a PIP joint off of the rest of the phalanx. To avoid skin irritation, the best idea is to get the K-wire out sooner rather than later; as soon as there is clinical healing with palpation not causing pain. Those are some of the helpful things to stay out of trouble with K-wires.

Dr. Bindra: Don, do you recommend any special pinsite care? Do you have them shower? Do they have to clean the pin sites daily?

Dr. Lalonde: The therapist usually explains to the patient how to keep the pins clean and we do let them shower. They can clean with hydrogen peroxide or just plain water. They rinse well at the end of the shower and put a little bit of ointment or Vaseline on the pin site. I think what really generates redness or inflammation in the skin is a lot of movement between the pin and the skin. If they listen to their pain, they are not likely to have as much pin irritation or pin inflammation.



The most critical factors determining the outcome are the ... severity of the injury ...[and] our ability to reduce and stabilize the fractures with a minimal amount of tissue dissection.

Donald Lalonde

Dr. Bindra: Having said that and hearing about the success with K-wires, would you ever consider plating a proximal phalanx fracture? As you know, there are newer devices such as locking plates as small as 1.3 mm with a very low profile. Are you still not seduced into considering plate fixation for some of these more complex injuries?

Dr. Lalonde: I love plating and inserting screws, but they cause problems in little bones like fingers. The problem is not so much the size of the plate or screw. The problem is the dissection and the space that I create between the tendon and the bone that causes scar and callus and interrupts gliding. I think that if I had a situation where I had a large piece of bone missing, with a

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bone gap that needed a bone graft, I would probably put a plate with bone graft in between the bone ends. With multiple metacarpal fractures and scissoring I will use plates. But those are metacarpals and we are talking fingers. I am more tempted to use plates in metacarpals than in fingers.

Dr. Bindra: What if you have to do a corrective osteotomy? Would you consider a plate?

Dr. Lalonde: If I did an osteotomy I may be tempted to use a plate, but I would probably still use K-wires. It is not just the plate itself that is the problem. The additional problem is the scar that forms over the plate. I have gone in to remove plates and seen a 2 mm of scar on top of the plate, and the extensor tendon bow strings over the scar. This is why we have all seen improved range of motion just by removing plates.

Dr. Bindra: David, do you have any indications where you think you might consider plating over K-wires?

Dr. Netscher: You know the new locking low profile mini plates are beautiful engineering designs, but I still have very little use for them on a phalangeal fracture. If I did use them I would want to try, if at all possible, to put them on laterally, rather than dorsally and I would use them if I was going to bridge something. If I had a bad comminution and I had a stable fragment proximally and distally, then I could bridge the comminution or bridge a bone gap and I think that they would really maintain my length better and more rigidly than I could accomplish with K-wires under those circumstances. I would also use them for secondary procedures. So, if I got a nonunion where I have got to resect bone or a rotational malunion that I am going to correct, I might be more tempted to use a plate or lag screws under those circumstances. The one acute situation where I found that I like to use the plate, and this particular plate has some criticisms, is the blade plate or that little mini condylar plate for the condylar fractures at the head of the proximal phalanx, and that is also put on laterally so, sometimes I use the little blade plate in the acute situation.

Dr. Bindra: So you feel there are some fractures or situations where a plate fixation would be better, but by and larger you try to avoid it?

Dr. Netscher: Correct.

Dr. Lalonde: Randy, I would like to know what you think about that. When do you use plates?

Dr. Brinda: I agree with both of you. I do not feel plates should be the primary line of treatment for a phalanx. They certainly do very well on a metacarpal. On a phalanx, my concern is the 50 percent removal rate because of the scarring and the lack of space around the phalanx. But I do not hesitate to use it for more complex injuries. So, if I had someone with multiple injuries or they hurt their tendon and their bone and things like that, I certainly prefer to go the route of plating, so that I take one variable of fracture stability out of the equation so my therapist can then focus on the soft tissue injuries. But, I do expect that I would more than likely have to remove the plate with a second procedure.
From your perspective, Lynne, as a therapist, do you prefer somebody who has come to you with a plated fracture? Do you feel it is secure enough that you can focus on getting back motion and not worry about the fracture losing its position?

Dr. Feehan: Actually, no. I always prefer K-wire fixation. Whenever someone comes in with a plate, particularly a dorsal plate on a proximal phalangeal fracture, I have typically seen more complications than I would see even with a potentially less stable fracture that had been treated with K-wire fixation. It is much easier for us to problem solve and figure out a controlled motion protocol for any proximal phalangeal fracture treated with K-wire fixation. I don't see that as a limitation at all. It may present some challenges for us in terms of splint design to ensure that we can work around the K-wires and still allow access for some pin care. I think there are all sorts of motion options we can consider. Like you say, we can easily introduce some active motion at the DIP joint, but we can also certainly introduce other forms of controlled limited such as passive motion at the PIP joint with some stabilization of the fracture. Further motion options are also available the earlier that we can get the K-wires out, so that they are no longer skewering the extensor mechanism or limiting motion because of tension in the skin.. Finally, I look at plates as a two-stage procedure, the second surgery and recovery only add a further significant delay a person's return back to their normal functioning.

Dr. Bindra: Lynne, how do you prioritize your initial treatment for a patient within the first two or three days after their surgery: edema control, pain relief or range of motion?

Dr. Feehan: If they have been truly resting and have had appropriate support, by 3 to 5 days, they should be coming in without any significant pain at rest or pain with dependency. To me, that is a bit of a red flag if someone still has pain at rest or with dependency at three to five days. If they have been treated with a bulky compressive dressing, usually there is not a lot of extraneous edema in the hand. I mean, you are certainly going to

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have tissue edema associated with the acutely healing fracture, but we can put on very light compressive dressings, if necessary, to help contain that. Quite honestly, if a person is moving their hand a little bit, moving is the best way to control the edema, because most edema in hand after a fracture is due to stasis. If we provide the appropriate support, that does truly protect the fracture and find ways to have them move early, the swelling and the pain resolve fairly readily. The most important thing is really knowing what sort of functional demands the person has during their day. If it is a young mother with two babies at home, we are certainly going to have to provide more protection and support to that fracture than someone who doesn't have the same functional demands. Those are my priorities- getting to understand the fracture and the functional demands of the person and then determining what is the right splint design and the right early controlled motion protocol for them.

Dr. Bindra: David, our Canadian colleagues' patients don't seem to complain too much about pain. Certainly in my practice here in Chicago, even for the simples fracture or surgery, people seem to want narcotic pain medication. What is your approach to these patients postoperatively, in terms of pain management and how often do you follow them up after surgery?

Dr. Netscher: You know, maybe our patients are not quite as stoic as the Canadians but I still think early motion is key. I am not adverse to prescribing narcotic pain medications as necessary, providing it is used very judiciously. But, I think early motion is important and there is no question in the evidence based literature on this that keeping patients immobilized for more than three or four weeks leads to far worse outcomes than getting them moving. I think that is one of the things that play out in our literature. I think active motion should start first and as the patient feels better and swelling goes down and the fracture becomes more stable and you get the correctional wires out, then you can become more forceful in your passive range of motion and resisted active range of motion.

Dr. Feehan: I just want to follow up on something Don was saying about treating fractures in a similar way that we do for any other fragile healing tissues, like our flexor tendons or extensor tendons. When we think in terms of what types of motion options are available to us, actually, active motion is in the midrange of what motion options are available. When we talk about introducing early controlled passive mobilization, we are not talking about introducing passive stretching, rather we are talking about early passive place and gentle active hold exercises or limited arc passive motion or maybe active motion into flexion and passive motion into extension. If we think in these terms this allows us far greater options for introducing motions earlier than three weeks. In many fragile healing fractures, I actually don't necessarily start with an active motion protocol. I would follow a protocol very similar to a flexor tendon protocol and introduce controlled passive motion and progress from there. We can teach patients passive motion exercises whether it is a healing fracture or a tendon. I think we just need to revisit how we are viewing fractures and think about other motion options that are available to us. It actually opens up the door to new approaches for moving fractures much earlier.

Dr. Lalonde: I agree with Lynn on that. We have been doing it for quite some time. I think the philosophy we use for flexor tendons should be translated to the treatment of phalangeal fractures because it avoids the same outcome; stiffness. In fact, it is much safer to do early protected movement on a phalanx fracture than on a flexor tendon, because the risk of moving a flexor tendon is rupture, and the risk of moving a fracture is only non union or malunion. How many times do we see nonunions in phalangeal fractures? Almost never, except for in the scaphoid or in the distal phalanx because the two pieces are separated by a country mile. Nonunions are almost nonexistent, and malunions are something that we can follow and treat should they occur if the stabilization of the fracture that we use with K-wires is not rigid enough. Even then, it is uncommon for things to fall apart with malunion. I think there is a lot less risk in doing early protective movement for phalanx fractures than there is for flexor tendons and there is just as much gain.

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I think a crucial factor as well, is the collaboration between the surgeon and the therapist, working as a team with the patient.

Lynne Feehan

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Dr. Bindra: I think you both raised some very interesting points and some food for thought because typically, like David, I have always felt that we started active range of motion when the patient was comfortable and we felt the fracture was well on its way to healing. We started passive motion so that we don't stress a healing fracture or displace a healing fracture. But, you raise an interesting point that perhaps we could treat them like tendons so that we allow that little bit of motion with early passive motion before active motion. That is something that needs to be looked at more closely.

Dr. Feehan: Yes, and I agree that if we think about it in terms of the purpose of the passive motion is to ensure tendon gliding and joint motion and nutrition to the cartilage, then from a pure functional perspective we are preventing the known complications of tendon tethering and joint stiffness and joint swelling following a fracture. More importantly we know that with early controlled motion introduced at three to five days, no matter what form of connective tissue, whether it is bone, tendon or nerve, that these early controlled stresses actually improve the rate at which these tissues heal. That is shown in multiple animal models.

Also, part of the research I did as my Ph.D., was looking at early controlled passive motion in an unstable fracture configuration in a rabbit metacarpal fracture model and found that just like all of our initial tendons healing studies in animals and dogs and chickens, these fractures heal not only more statistically significantly stronger, but from a mechanical perspective they are actually twenty five percent stronger at 4 weeks than are fractures that have been immobilized. So with early controlled motion you are further ahead from a recovery standpoint and which also means you can likely introduce more functional use earlier as well. We have learned so much from how we can mobilize all our tendon injuries early, all our nerve injuries early, all our other fragile healing tissues including skin injuries. We don't immobilize burns and we don't immobilize these other injuries. There is really no rationale to immobilize fractures, other than the fear that you are going to end up with a nonunion, and that is the least likely complication associated with a hand fracture. Less than five percent of open fractures heal with nonunion. Less than one percent of fractures that are treated closed heal with a nonunion. I really think we need to revisit why we are NOT moving fractures early. With early motion we are supporting the healing and we are improving the rate and quality of functional recovery. We work in partnership as hand therapists and hand surgeons and this concept of early controlled motion allows surgeons to consider different options for surgery. They can go in, maybe with a limited open reduction and do some form of less rigid fixation or do, a closed reduction with percutaneous fixation, and understand that doesn't preclude early motion, that as with other healing tissues we really can find a way to move all fractures early, and potentially have a significant impact on a person's functional outcome.

Dr. Bindra: Well, you certainly have sold me on that. I am going to send all my patients to Vancouver from Chicago!

Dr. Feehan: Well, you know that is the best thing about working with hand therapists. They already have all these skills, they already know how to do this. There are very small differences in how therapists would approach moving a tendon or a fracture early. The most important thing is the therapist needs to understand as much about the healing fracture as they do about a healing flexor tendon. If you are referring a patient three days post-op for a flexor tendon repair, you are not just going to send them to the therapist with a referral for flexor tendon repair. You are going to send them the operative notes and you are going to give them a heads-up as to your concerns about that repair and your thoughts about what sort of motion the repair is going to tolerate. It is the same sort of communication and collaborative working relationship that you can set up with hand therapists when referring your fracture patients at 3 to 5 days. Patients can do these exercises safely. It is no more difficult, often easier, than early controlled motion exercises for a flexor tendon. It is not difficult and it is amazing how much more quickly people heal but also recover functionality.

Dr. Netscher: It is interesting Lynne, you and I are 5000 kilometers apart and we have very similar philosophies and we have never worked together.

Dr. Feehan: Perhaps it may have something to do with the Canadian health system. In my review of 72,000 hand fractures in B.C. less than 10 percent of hand fractures were managed with any sort of open surgical intervention and even a much smaller percentage had plate fixation. Our health care system is also not litigation based. I am not sure if is has been an issue or not in the US but generally people in Canada aren't too worried about having a perfect x-ray, but they are worried about having a perfect functional outcome. I think surgeons in Canada aren't as concerned about having that perfect x-ray or at least hat is just my perspective, than surgeons in the states.

Dr. Bindra: I do agree with that. I think it is a different expectation

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from the patient's perspective and the treatment of x-rays, that outcome from the patient seems to be more critical in our society than the actual functional outcome, at least at the very outset, certainly, when you sit down and talk to them. Most of the time when I have a patient referred to me, often referred for fixation or a metacarpal fracture they are referred because it is angulated. It takes a lot more counseling to tell them they don't need anything for that boxer fracture.

Dr. Lalonde: I agree, sometimes it takes longer to talk a patient out of surgery than it does to do the operation. We need to get them to understand that we are treating their finger, not their X-ray.

Dr. Bindra: Now, from your perspective Lynne, what would you think was the most critical factor that you would say affects the outcome of a finger fracture?

Dr. Feehan: Early motion.

Dr. Bindra: And you, David?

Dr. Netscher: Well, I think if we are talking about the simple office fracture, then I think early motion and obviously attention to correct splinting are both important. But, I do think with all-comers that if you consider all severities of fracture, I think that the energy of the injury and the soft tissue crushing are clearly going to play a very significant role, so the severity of injury must come into play somewhere. But otherwise, if we are talking about the more routine fracture, then all of the things we have been talking about, positional splinting and early range of motion are critical.

Dr. Bindra: Don, what do you feel is the most critical factor?

Dr. Lalonde: The most critical factors determining the outcome are the negative effects of the severity of the injury balanced against the positive effects of having a patient who is able to get off pain killers early, listen to the pain in their finger and cooperate with early protected movement, along with our ability to reduce and stabilize the fractures with a minimal amount of tissue dissection.

Dr. Bindra: On that very philosophical note from Don, we could conclude this session. You have all shared some very interesting concepts on assessment, K wire fixation and early motion. It appears from your personal experiences that most finger fractures don't need surgery but they do need care with their splinting and follow-up. We do need to explore innovative ways of mobilizing fractures early, perhaps with the same vigor as after flexor tendon repair. As far as fixation is concerned, the panel is in favor of minimalistic fixation done percutaneously to try to avoid complications, especially in the proximal phalanx from plating and open surgery. Were there any other points that anybody on the panel would like to make in closing?

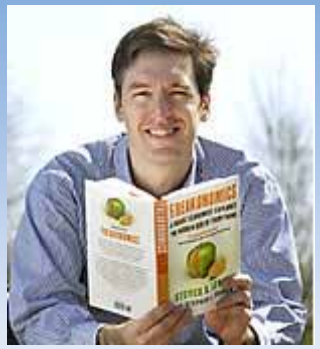
Dr. Feehan: I think a crucial factor as well, is the collaboration between the surgeon and the therapist, working as a team with the patient. I think it really is team work and if everyone really understands the fracture and what the functional demands are for the person recovering from the fracture that we are ultimately going to get better fracture outcomes if we work as at team and to find ways to move fractures early.

Dr. Netscher: I totally agree with that. It is worth mentioning that here the way it works is we see them all together, we pin the ones that need pinning together, the surgeons and the therapists, and then the therapists actually end up doing the bulk of the follow up and the work. If the therapist is concerned about the progress, for whatever reason, then the therapist will bring the patient back to the clinic and we will reassess the patient together and then I might have to do something. Most of the time, the therapists are doing most of the management in our practice.

Dr. Bindra:. Thank you to all three of you. It has been a very interesting and stimulating discussion and I have certainly learned some new ideas to implement into my practice. Thanks very much.

2012 Annual Meeting

Keynote Speaker



Professor Steven Levitt

Professor Steven Levitt has agreed to be our distinguished keynote speaker. Professor Steven Levitt is the author of the bestselling book, *Freakonomics*, and *Superfreakonomics* and is the William Ogden Professor of Economics at the University of Chicago. He is also a contributing author to the NY Times with his weekly blog, Freakonomics which has also been turned into a movie.

Saturday, January 14, 2012
10am – 11am
Red Rock Casino and Resort
Las Vegas, NV

NEW AAHS MEMBERS

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St. Petersburg, Florida

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Mawn, Georgia

Melanie Johnke BA/S, MOT
San Francisco, California

Xiaoping Re,n MD
Cincinnati, Ohio

Terri Skirven, BSC, OT
King of Prussia, Pennsylvania

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Birmingham, Michigan

Julia Bulatova, MD
Wynnewood, Pennsylvania

Kimberlly Chhor, MD
Philadelphia, Pennsylvania

Jonathan Donigan, MD
Iowa City, Iowa

Norah Harvey, MD
Philadelphia, Pennsylvania

Richard Hutchinson, MD
Oklahoma City, Oklahoma

Sanjeen Kakar, MD, MBBS, B.Sc
Rochester, Minnesota

Michael Kessler, MD
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Michael Mangonon, DO
Buffalo, New York

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Apurva Shah, MD
Boston, Massachusetts

Mark Wang, MD, PhD
Philadelphia, Pennsylvania

Recruit an AAHS Member

Online AAHS membership applications are now available on the AAHS Website: www.handsurgery.org

All AAHS members should consider sponsoring an associate, colleague, protégé, trainee, or fellow for membership in the American Association for Hand Surgery. Over the last several years the AAHS has increased its membership and continues outreach in this area. Because an application for membership requires support by an AAHS member, you are likely to be asked by a prospective applicant to serve as his or her sponsor. We know that there are a number of hand surgeons, hand therapists, and allied health professionals who have much to offer the Association. Please help us identify them.

To apply for AAHS Membership, a candidate must begin the online application process on the AAHS website: www.handsurgery.org

Please feel free to contact the Membership Committee chairs if you have any questions regarding a potential candidate or the application process.

Jeffrey B. Friedrich, MD, Active Membership Committee Chair
Rebecca von der Heyde, PhD, OTR/L, CHT
Affiliate Membership Committee Chair

Photo Highlights from the Annual Meeting

















The mission of the Hand Surgery Endowment is to foster and promote the highest quality of hand care through development and sponsorship of educational programs related to the hand and the upper extremity, through communications with health care professionals and the public, and through the endowment of research.

The HandSurgery Endowment depends greatly upon the generosity of AAHS members and affiliates for support. Contributions support the current and future initiatives:

- **Supports the Guatemala Healing Hands Foundation**
- **Sponsors Health Volunteers Overseas Missions**
- **Increased partnerships with International Federation of Societies for Surgery of the Hand (IFSSH), Orthopaedic Research & Education Foundation (OREF), and many other organizations for international outreach and volunteer missions to improve global hand care**
- **Makes the Vargas International Hand Therapist Teaching Award* possible**
- **Provides Research Grants, including the AAHS Annual Research Grant* and the HSE/AAHS/PSF Combined Pilot Research Grant***

** Applications for the AAHS Grants and Awards will be available on the AAHS website over the next several months.*

DONATE TO HSE

NEW ADDRESS AND CONTACT INFORMATION

The American Association for Hand Surgery has moved. Please note the new address and phone numbers:

900 CUMMINGS CENTER, SUITE 221U
BEVERLY, MA 01915
PHONE: (978) 927-8330
FAX: (978) 524-8890
EMAIL: contact@handsurgery.org

AAHS Calendar

2011

September 8-10, 2011
ASSH Annual Meeting
Las Vegas, NV

September 23-28, 2011
ASPS Annual Meeting
Denver, CO

2012

January 11-14, 2012
AAHS 42nd Annual Meeting
Red Rock Casino Resort & Spa
Las Vegas, NV

2013

January 9-12, 2013
AAHS 43rd Annual Meeting
Naples Grande Resort & Club
Naples, FL

2014

January 8-11, 2014
AAHS 44th Annual Meeting
Grand Hyatt Kauai
Resort & Spa
Kauai, HI

For information contact:

AAHS Office at 978-927-8330 or please visit www.handsurgery.org

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NOW ACCEPTING ABSTRACTS

Submission Deadline:

Friday, July 1ST, 2011

2012

AAHS ASPN ASRM
ANNUAL MEETINGS

AMERICAN ASSOCIATION for HAND SURGERY
January 11-14, 2012

AMERICAN SOCIETY for PERIPHERAL NERVE
January 13-15, 2012

AMERICAN SOCIETY for
RECONSTRUCTIVE MICROSURGERY
January 14-17, 2012

Red Rock Casino Resort & Spa, Las Vegas, Nevada