

DISTRACTIONS

The Newsletter of
The Limb Lengthening and Reconstruction Society: ASAMI North America

Volume 8, Number 1 January 2002

From the Desk of the Program Chair

Abstract submission
deadline extended to
March 1, 2002

Dear LLRS: ASAMI-North America Member:

It is time once again to plan to attend the LLRS' *Annual Scientific Meeting*. This year's meeting is **June 10 & 11, 2002**, in Irving, Texas. The conference will be held at the beautiful Four Seasons Resort & Club-Dallas at Las Colinas and is easily assessible via Dallas Fort Worth International and Lovefield Airports. If you wish to submit a scientific abstract to be considered for presentation at the annual meeting, please complete the form previously mailed to you and fax it to (512) 301-4751 by **March 1, 2002**. For those of you who have paid your membership dues, simply complete the registration form and fax it to (512) 301-4751 by **April 1, 2002**. If you have not paid your dues, please note that an assessment of \$50.00 (in addition to your dues) is now also due.

We are excited about the addition of *Essentials of External Fixation and Limb Reconstruction*, to be held immediately preceding the annual meeting, **June 7-9, 2002**, also at the Four Seasons. The agenda for this workshop is currently being finalized and will be sent to you with a registration form in the next few weeks. Confirmed Corporate Partners include Orthofix Inc., Smith & Nephew Inc., and Paradigm BioDevices Inc.

🐦 Early Bird Registration: Register for both meetings before March 1, 2002, and receive \$50.00 off the combined applicable registration fees! For more information, visit www.asaminorthamerica.org, or contact Karen Syzdek at ksyzdek@yahoo.com or (512) 301-7328.

Important General Information

Accommodations

Four Seasons Resort & Club-Dallas at Las Colinas – Call (972) 717-0700 before **May 20, 2002** and refer to *LLRS: ASAMI-North America*.

Travel

Continental Airlines – Call (800) 468-7022 and refer to Reference Number **UX81M6**.

Southwest Airlines – Call (800) 433-5368 and refer to ID Code **R2181**.

American Airlines – Call (800) 433-1790 and mention Number **A4162AI**.

United Airlines – Call (800) 521-4041 and mention Meeting ID Code **594XY**.

Avis Rental Car – Call (800) 331-1600 and refer to AWD Number **J991347**.

Registration

The abstract and registration forms for the annual meeting were mailed in October. The introductory course registration form will be mailed later this month. Simply complete the forms and mail with applicable payment to **LLRS, c/o Karen R. Syzdek, CMP, P.O. Box 91868, Austin, TX 78709-1868**. *Only US funds are accepted. No credit cards or Eurochecks, please.*

Letter from the President

Dear Colleagues:

The following information highlights several of LLRS-ASAMI's educational programs in 2002. I hope that you will make every effort to participate and will encourage your colleagues to attend, as well.

SPECIALTY DAY

We are now preparing for LLRS-ASAMI's first Specialty Day program in Dallas on Saturday, February 16, 2002. Dr. Doreen DiPasquale has organized an excellent comprehensive program on controversial topics in trauma and reconstruction, entitled "*A Non-Partisan Approach to Controversies in Trauma and Reconstruction.*" This program will present several aspects of trauma topics. We hope to see as many of you as possible at this meeting. Please tell your associates and residents about this instructive program.

CALL FOR ABSTRACTS

The deadline for submission of papers for our Twelfth Annual Scientific Meeting is rapidly approaching. Because of the proximity of the AAOS' annual meeting in February, we have extended the deadline for abstracts to **March 1, 2002**. Abstract forms are available from our web site www.asaminorthamerica.org. The meeting will be held at the elegant Four Seasons Resort and Spa—Las Colinas just outside Dallas on Monday and Tuesday, June 10 and 11, 2002. This will be our first freestanding meeting. We have two excellent guest speakers for this program. Steven A. Goldstein, PhD, from the University of Michigan Orthopaedic Research Laboratories will be the Codivilla Lecturer and will be speaking on "Mechanical and Biological Influence of Bone Formation." Dr. Goldstein has made many significant contributions to the literature from his research in distraction osteogenesis. Steven R. Cohen, MD, from San Diego will be the Presidential Guest Lecturer and will be speaking on "Research and Clinical Work in Facial Reconstruction." Dr. Cohen has produced some truly amazing results using distraction osteogenesis for facial deformities. Both men are outstanding speakers, and I look forward to their comments and insight.

COMSS

The Council of Musculoskeletal Specialty Societies (COMSS) met at The Sagamore in New York in October 2001. Dr. John Birch and Dr. Jim Binski represented the LLRS at this meeting. The ethics of accepting gifts from vendors was discussed. No arbitrary guidelines were established except that the recipient should make sure that his or her decision-making is not affected by gifts from vendors. The AAOS is conducting some Capital Hill visits on March 19 and 20, 2002, to meet with congressional members to discuss appropriations for musculoskeletal research. I will represent our society at this event.

AAOS ANNUAL MEETING 2003

The AAOS has asked all subspecialty societies to submit papers for Podium/Poster Presentations, Scientific Exhibits, Instructional Courses, Symposia, and Videotapes for the AAOS meeting in New Orleans on February 5–9, 2003. The deadline for submission is April 1, 2002, with the exception of Videotapes, which are due by July 1, 2002. Applications are available through the AAOS web site at www.aaos.org under Annual Meeting. Please contact the AAOS or me for applications for Instructional Courses, Symposia, and Scientific Exhibits.

ASSOCIATION OF BONE AND JOINT SURGEONS

The Association of Bone and Joint Surgeons is offering a \$1000 scholarship to young members to attend their annual meeting and to present a paper. The meeting will be held in Vancouver, B.C., Canada, May 15–19, 2002. Please contact the Association of Bone and Joint Surgeons at (847) 698–1636, or me, if you are interested in this scholarship.

YOUNG INVESTIGATOR'S AWARD

Dr. Will McKenzie has secured funding for our Young Investigators Award. There is no restriction on the grant, the age of the surgeon, or the work done. Please contact Will at (302) 651–5890 if you would like to apply for this award.

NEW BYLAWS

Dr. Ken Kuo has the final draft of our new bylaws to be submitted to the membership at the June meeting in Dallas. Several new features of the by-laws include a succession to the presidency of our organization, allowing the first vice president and second vice president to become acquainted with the workings of the organization before becoming president. Another provision is for the action required for failure to pay dues. We have members who are several years delinquent in their dues payment. Failure to pay dues will become grounds for expulsion from the organization upon passage of the new bylaws. Please pay your dues promptly, and remember that meeting registration is free for those whose dues are paid on time.

INTRODUCTORY COURSE

We are putting together the final plans for our society's first "Essentials of External Fixation and Limb Reconstruction" to be held before our Annual Scientific Meeting, Friday–Sunday, June 7–9, 2002, at the Four Seasons Resort and Spa, the same venue as our Scientific Meeting. I will contact many of you soon to serve on the faculty of this course. Unlike previous single vendor courses, this course will offer an opportunity to discuss state of the art products from all vendors, will feature an experienced faculty, and will offer CME credit. The goal of the course is to teach participants how to perform external fixation for basic fractures, lengthening, deformity correction, contractures, and nonunions. I appreciate the input that many of you have given me regarding this course.

Again, please encourage your associates to consider membership in LLRS: ASAMI and to attend these exciting programs in 2002. I hope to see you in Dallas in February and June.

Sincerely,
J. John Gugenheim, MD

Abstracts in A Minute

The purpose of Abstracts in A Minute is to facilitate members' self-study. Because of the brevity, these abstracts are not intended to be an authoritative or critical review.

Limb Lengthening

Lee SH, Szoke G, Simpson H. **Response of the physis to leg lengthening.** *J Pediatr Orthop B* 2001; 10:339-343.

Tibial lengthenings in immature rabbits were used to investigate the effect of lengthening on the physis. At 20% lengthening, regardless of the rate of distraction, there were no significant changes in the physis. At 30% lengthening, the growth rate was drastically reduced. At 50% lengthening, there was evidence of premature physal closure. Caution should be exercised for major lengthenings of children's bones. Effect was independent of rate of lengthening. Distal tibial physis was more severely affected than the proximal physis.

Shaw KJ, Crawford AH, Kumar S, Billmire D. **Limb lengthening after limb sparing for osteogenic sarcoma of the proximal humerus.** *Orthopedics* 2001; 24:1081-1082.

Case report of a child who underwent en bloc resection of a humeral osteosarcoma and allograft insertion at age five years, followed by insertion of a vascularized fibular graft at age six years and an 8cm distal humeral lengthening. Disease-free eight years after diagnosis with minimal arm length discrepancy.

Minguella J, Cabrera M, Escolá J. **Techniques for small-bone lengthening in congenital anomalies of the hand and foot.** *J Pediatr Orthop B* 2001; 10:355-359.

Thirty-one bones lengthened, including 15 metacarpals, 12 metatarsals, 1 foot stump, and 3 spaces from previously transplanted phalanx end. Eight cases underwent one-stage lengthening; 15 cases underwent callotaxis, 8 cases underwent rapid lengthening followed by bone grafting. One-stage group gained 7-15 mm (43%); callotaxis group gained 9-30mm (53.4%); and the rapid lengthening group gained 8-15mm (53.9%). Criteria for method selection discussed, based on patient age, amount of lengthening desired, and surrounding soft tissue.

Visit www.asaminorthamerica.org for more information about the 2002 annual scientific meeting.



Upper Extremity

Capuano L, Craig N, Ashcroft GP, Maffuli N. **Distraction lengthening of the radius for radial longitudinal instability after distal radio-ulnar subluxation and excision of the radial head: a case report.** *Scand J Plast Reconstr Surg Hand Surg* 2001; 35:331-335.

Case report of distraction lengthening of the radius through an Ilizarov frame in 29 year old patient after a complex Essex-Lopresti fracture dislocation and late symptoms of ulnar carpal impingement. Previous procedures for symptomatic proximal migration of the radius and increased ulnar variance after radial head resection have been disappointing.

Foucher G, Navarro R, Medina J, Khouri RK. **Metacarpal synostosis: a simple classification and a new treatment.** *Plast Reconstr Surg* 2001; 108:1225-1231.

K-shaped synostosis occurs between fourth and fifth metacarpals. The head of the short fifth metacarpal abuts the metaphysis of the fourth. Osteotomy and distraction lengthening provide predictable results for correction of this deformity.

Kashiwaga N, Suzuki S, Seto Y, Futami T. **Bilateral humeral lengthening in achondroplasia.** *Clin Orthop* 2001; 391: 251-257.

Twenty humeral lengthenings in 10 achondroplastic dwarfs using the Ilizarov fixator were reviewed. Mean age 12 years, 10 months (range 6 years, 11 months to 17 years, 8 months). Mean length obtained was 7.8 cm (range 3.5 cm to 10 cm). Healing index averaged 30 days per cm (27 days/cm when two patients with radial nerve palsy were excluded). Transient radial nerve palsy developed in two patients, and lengthening was discontinued. One recovered spontaneously; one recovered after surgical exploration of the nerve. This technique is very effective for improving function and restoring body proportions.

Lower Extremity

Hutchinson RJ, Betts RP, Donnan LT, Saleh M. **Assessment of Ilizarov correction of clubfoot deformity using pedobarography. A preliminary report.** *J Bone Joint Surg Br* 2001; 83:1041-1045.

Authors noted a statistically significant difference in the distribution of pressure across the foot during Ilizarov treatment. Twenty-six feet assessed before and twenty-one feet assessed postoperatively. Mean age = 11 (3-17) years. This objective reproducible measurement technique showed changes in pressure distribution after Ilizarov surgery.

Karatosun V, Alekberov C. **The Ilizarov method in total-knee arthroplasty with nonunion of the proximal tibia - a case report.** *Acta Orthop Scand* 2001; 72:425-427.

Sixty-nine-year-old female sustained periprosthetic fracture with oblique plane deformity and nonunion, treated with three-ring Ilizarov fixator, healed in five months with complete correction of angular deformity.

continued on page 4

Slomka R. **Complications of ring fixators in the foot and ankle.** *Clin Orthop* 2001; 391:115-122.

Review of author's twelve year experience with the Ilizarov fixator. Early complications were attributed to lack of experience; recent complications attributed to excess of confidence and the belief that the fixator could be the universal solution to all deformities. Types of complications were those associated with the use of the Ilizarov fixator elsewhere in the body.

Toh S, Harata S, Tsubo K, et al. **Combining free vascularized fibula graft and the Ilizarov external fixator: recent approaches to congenital pseudarthrosis of the tibia.** *J Reconstr Microsurg* 2001; 17:497-510.

Seven cases of use of free vascularized fibular graft performed between 1984 and 1993. Casts or unilateral external fixators were used in the first six. Five were complicated by graft fracture. One recent case of use of an Ilizarov fixator healed in four months; there has been no graft fracture, leg length discrepancy, or severe ankle deformity 7 years post-operatively.

Research

Baibekov IM, Khanapiyaev UK. **Healing of bone fractures of rat shin and some immunological indices during magnetic laser therapy and osteosynthesis by the Ilizarov method.** *Bull Exp Biol Med* 2001; 131:399-402.

The effect of magnetic and infrared laser therapy on healing of bone fractures and blood levels of T and B lymphocytes was studied in rats during osteosynthesis by the Ilizarov method. Laser therapy induced changes in cells attesting to stimulation of reparative processes and normalization of immunological parameters. Bone was not lengthened. Technique of laser usage not described in this study from Uzbekistan.

Bail HJ, Kolbeck S, Lindner T, et al. **The effect of growth hormone on insulin-like growth factor I and bone metabolism in distraction osteogenesis.** *Growth Horm IGF Res* 2001; 11:314-323.

Tibial lengthening was performed in 30 mature micropigs. Fifteen received recombinant porcine growth hormone (r-pGH); fifteen were controls. Serial serum measurements of total insulin-like growth factor I (IGF-I), free IGF-I, IGF binding proteins (IGFBP-I to -4) were made. Bone specific alkaline phosphatase (bone-ALP) and serum carboxy-terminal telopeptide of type I collagen (ICTP) were measured as bone turnover markers. The GH-treated pigs showed increase in total IGF-I, free IGF-I, IGFBP-3, and bone-ALP compared to controls; no difference in ICTP between the two groups. There was a high correlation between bone-ALP and total IGF-I and even higher correlation with free IGF-I. These data indicate that the application of species-specific GH results in stimulation of bone formation in distraction osteogenesis which may be mediated by IGF-I. The stronger correlation between free IGF-I and bone-ALP indicates that the anabolic effect of IGF-I may be regulated through the IGFBPs by binding and inactivating IGF-I.

Hayatsu K, De Deyne PG. **Muscle adaptation during distraction osteogenesis in skeletally immature and mature rabbits.** *J Orthop Res* 2001; 19:897-905.

Skeletally mature and skeletally immature rabbits underwent 20% tibial lengthening at a rate of 1.4 mm/day. Immunofluorescence was used to assess the presence of neonatal myosin heavy chain in tibialis anterior sections. New muscle tissue was seen in response to distraction osteogenesis (DO) in young animals (27% positive fibers), whereas it was more muted in adult animals (9.9% positive fibers). There was a vigorous proliferation of myoblasts in the young but not in the mature animals. Adult tibialis anterior subjected to DO showed a 50% loss in tetanic and twitch tension, whereas the younger rabbits did not. There was morphological evidence of denervation in the adult but not the young muscle.

Other

Goldberg BA, Catagni MA. **Hybrid advanced Ilizarov techniques: analgesia use and patient satisfaction.** *Am J Orthop* 2001; 30:686-689.

"Hybrid advanced" technique refers to the use of at least one half-pin on each ring except for the distal tibial ring, which has three transfixing wires. Eighty-one consecutive patients were studied. All patients were satisfied with their results. Mean postoperative hospitalization was 5.1 days. Narcotic and non-narcotic analgesics were available to all patients. Upon hospital discharge, 3 patients used narcotics for a mean of 6 days (range 1-11). Forty-one patients used over-the-counter non-narcotic analgesics or prescription anti-inflammatory medication for a mean of 4.4 days (range 1-35 days). The other 37 patients did not require analgesics.

Mofid MM, Manson PN, Robertson BC, et al. **Craniofacial distraction osteogenesis: a review of 3278 cases.** *Plast Reconstr Surg* 2001; 108:1103-1114.

A questionnaire was sent to 2476 craniofacial and oral/maxillofacial surgeons throughout the world. Results of 274 respondents (11.4% rate) were tabulated. There were fewer complications with experienced surgeons. There was no evidence that a latency period was necessary or that results were superior with more than one increment of turning each day.

CME OPPORTUNITIES

2/16/02: **LLRS AAOS Specialty Day** – Dallas, Texas

6/7-9/02: **Introduction to Limb Lengthening, Limb Reconstruction & External Fixation** – Irving (near Dallas), Texas

6/10/02 & 6/11/02: **12th Annual Scientific Meeting of LLRS: ASAMI-NA** – Irving (near Dallas), Texas

Plan to attend Specialty Day 2002! Call AAOS to register.

AAOS Specialty Day 2002

A Non-Partisan Approach to Controversies in Trauma and Reconstruction

The Limb Lengthening and Reconstruction Society: ASAMI-North America

8:00-8:15	Welcome and Statement of Goals/Objectives – Doreen DiPasquale, MD	12:00-1:00	Lunch on your own
8:15-9:45	Acute Adult – Doreen DiPasquale, MD, Moderator Lower Extremity Fx: How to Stay Out of Trouble – The Relaxed Approach <i>Temporizing in Open Fractures & Mangled Extremity</i> – Michael J. Bosse, MD <i>The Biology of the Limb in Jeopardy</i> – George Cierny, III, MD <i>External Fixation Frame Formulas</i> – Stuart A. Green, MD <i>Looking at the Juxtaarticular Lower Extremity Fractures</i> – J. Tracy Watson, MD <i>Controversies in Femur Fracture Fixation</i> – J. Charles Taylor, MD Discussion	1:00-1:05	Morning Summary and Introduction to Afternoon – Doreen DiPasquale, MD
9:45-10:00	Break	1:05-1:25	<i>How To Avoid Billing Errors and Get Paid</i> – George Cierny, III, MD
10:00-11:30	Acute Pediatrics – Carl L. Stanitski, MD, Moderator Femur Fx: The Problem Child Between 5 & 12 Years <i>Spike Casting in 2002</i> – Richard Haynes, MD <i>When to Intramedullary Rod</i> – Kathryn E. Cramer, MD <i>The Place for External Fixation</i> – James Aronson, MD <i>Plating Alternatives</i> – Carl L. Stanitski, MD Discussion	1:25-2:10	Selected Papers 2001 – J. John Gugenheim, MD, Moderator <i>Acute Shortening with Subsequent Re-lengthening Versus Bone Transport in the Treatment of Tibial Bone Defect</i> – Dror Paley, MD <i>Analysis of Failure of Hybrid External Fixation Techniques for the Treatment of Distal Tibial Pilon Fractures</i> – J. Tracy Watson, MD <i>Biomechanics of Pin and/or Wire Combinations</i> – Mikhail Samchukov, MD Discussion
11:30-12:00	Pediatric Reconstruction Richard S. Davidson, MD, Moderator The Long and Short Of It <i>Update on Controversy with Lengthening Vs. Epiphysiodesis</i> – J. John Gugenheim, MD and Richard Bowen, MD Discussion	2:10-2:25	Break
		2:25-3:45	Adult Reconstruction – Kathleen A. McHale, MD, Moderator Tool Time <i>Failure of Hybrid Fixation</i> – Mark Dahl, MD <i>The Limits of Limited Internal Fixation</i> – J. Tracy Watson, MD <i>How Non-Unions Happen</i> – George Cierny, III, MD Discussion
		3:45-4:00	Closing Comments and Evaluation – J. John Gugenheim, MD and Doreen DiPasquale, MD

LLRS 12th Annual Scientific Meeting
Participant Golf Tournament

Sunday, June 9, 2002

Four Seasons Resort & Club-Dallas at Las Colinas

sponsored by



For information or to register:

Laura Archibald at lauraarchibald@orthofix.com or (704) 948-2618.
Participation is limited and registrations will be processed in the order received.

The Limb Lengthening and Reconstruction
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Austin, TX 78709-1868 USA



**If you have not paid your annual
membership dues, please contact
Karen Syzdek at
ksyzdek@yahoo.com or
(512) 301-7328.**



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● **Contact Information Updates Needed** ●

● So that you may receive the most updated information
● pertaining to our association, please send your e-mail
● address to *ksyzdek@yahoo.com*. ●

● Also, please remember to send your updated contact
● information (institution name, mailing address, phone
● number, fax number, and e-mail address) as it changes. ●

DISTRACTIONS

Send contributions to J. John Gugenheim
jjg@fondren.com
(713) 383-9150 fax

Send course listings to Karen Syzdek at
ksyzdek@yahoo.com. For advertising
rates, contact Karen by e-mail or at
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