

# Piedmont Orthopedic Society

## *Abstracts 2004*

### **2004 TOM BROKAW, ORTHOPAEDICS, AND THE PIEDMONT ORTHOPEDIC SOCIETY**, James P. Aplington, M.D., Greensboro, North Carolina

When I received a letter from Dr. Goldner last July, I suspected this was either a statement that I owed the Piedmont some money or it was a refund from last years meeting. I was totally surprised to learn that the Executive Committee had asked me to be one of the two guest speakers at the years Piedmont meeting. When I look at the distinguished list of Piedmont members and those that have been up here at the podium in the past years, I am indeed deeply honored to be speaking to you today.

To pick a topic of interest to such a diverse audience required some thought. Many of you are probably wondering about the unusual title of my speech today; I hope you will find it interesting and pertinent.

Four years ago, one of my patients gave me as a present Tom Brokaw's book, The Greatest Generation. The stimulus for this book was two visits he made to Normandy in commemoration of the fortieth and fiftieth anniversaries of D-Day and talking to American veterans who had been there. To paraphrase Mr. Brokaw, this generation was united not only by a common purpose but also by common values -- duty, honor, economy, service, and responsibility for ones self. He termed these veterans "the greatest generation any society has produced". He proceeds to profile lives of ordinary people -- men and women -- as well as some well-known individuals such as George Bus, Joe Foss (B29 pilot, Congressional Metal of Honor winner, first president of the old American Football Conference), Ben Bradley, Mark Hatfield, and Bob Dole. By in large, this generation was content simply to have a roof over their heads, food on the table, and a job. If they were lucky, they obtained an education after high school. Everyone worked hard for the war effort. Especially revered were the midwestern farm boys who worked from daylight to darkness without complaint (Dr. Goldner, does that sound familiar?). The individuals profiled were successful at many levels after the war, through hard work and character. This often led to problems with their children, however, who frequently did not share their work ethic and sense of values. Families become estranged when parents could not or would not accept the attitudes of this new generation.

When my wife heard about Mr. Brokaw's subsequent book, A Long Way From Home, she gave it to me as a gift. This book deals with his ancestors and describes his growing up in his semi-rural environment in South Dakota. I was struck by the similarities in his early life and mine. We were born four months apart in 1940, which put us at the tail end of the greatest generation. I also grew up in a small town but in Maine. There was a lot of love in both of our households but there were no material extras. We both learned early on that most of the time, if we wanted something, we would have to work for it. No effort, no reward. We both played varsity sports in high school. He subsequently married a physician's daughter. I went to medical school and married a nurse.

My Orthopaedic years at Duke, I feel embodied much of the greatest generation philosophy. We took pride in a job well done; we were very economic in that we performed many job functions that ancillary staff such as cast techs, IV teams, and PAs perform today. It did not matter how smart you were, you still had to work. You could not complain because Dr. Goldner was right there in the trenches with you.

Now, the winds of change are upon us. It is a different era. We have mandated 80-hour resident workweeks. Private practice may prove to be quite a shock to some of the physicians trained under this system. I only hope the surgeon fixing my fractured hip will not leave in the middle of my case because he has worked too many hours that day. Women now comprise up to 50% of medical school classes. However, many of these women are opting to work part-time with no nights, weekends, or holidays. Is it possible we will be working shifts some time in the future?

With all of our technological advances, patient expectations often are unrealistic. Patient self-responsibility is on the wane. Most of my Workman's Compensation patients now seem to have a rehabilitation nurse accompanying them to monitor and expedite their care. It seems harder to get them well and returned to work; frequently, they have secured the services of an attorney.

In our present economic climate frugality is often a forgotten word. Instead of writing a prescription for what the patient might need with refills, if necessary, with co-payments the patient does not want to have to pay more than one co-payment and expects to have a prescription large enough to more than cover their needs and frequently much of it will go unused.

Where are we headed? - - - I do not know. Change is inevitable. Like "The Greatest Generation" we need to adapt and most of us have, I think. The principals of The Greatest Generation seem to be eroding but not lost completely.

This brings me to the Piedmont Orthopedic Society. This has always been my favorite medical and social meeting. We have a distinguished group of men and women who have shared the same rigors of residency and cherish values of hard work and quality. The BS factor is usually negligible. I would hope we would be able to maintain these ideals for years to come.

In closing, I once again would like to thank Dr. Goldner and the Executive Committee for making me one of the two honored guests this year. It has been a pleasure being able to share some of my observations and ideas with you. I look forward to attending many more Piedmont Orthopedic Society meetings in the future.

**2004 Isolated Liner Exchange via the Anterolateral Approach is Not Associated with Increased Risk of Dislocation**, Thomas M. Smith, DO, Keith R. Berend, MD, Adolph V. Lombardi Jr., MD, FACS, Thomas H. Mallory, MD, FACS, Joanne Adams, BFA, Jackie Russell, RN, Joint Implant Surgeons, Inc., 720 East Broad Street, Columbus, Ohio 43215 Isolated liner exchange for osteolysis/wear have has dislocation rates. Twenty-six patients (27 hips) underwent isolated liner exchange via the anterolateral approach and have minimum 2-year follow-up (mean: 40.7 months). Harris hip scores increased from 70.4 to 81.7 (p=0.007). Pain (p=0.02) and functional (p=0.03) scores improved. No components were re-revised for aseptic loosening. One (3.7%) dislocation

occurred. Isolated liner exchange for osteolysis and wear performed via the anterolateral approach has a lower risk of dislocation and provides significant improvements in pain, function and total Harris hip score. When performed via the anterolateral approach this provides good outcomes with low dislocations.

**2004 ILEUS FOLLOWING TOTAL HIP OR KNEE ARTHROPLASTY IS ASSOCIATED WITH INCREASED RISK OF DEEP VENOUS THROMBOSIS AND PULMONARY EMBOLISM**

Keith R. Berend, MD, Adolph V. Lombardi, Jr., MD, FACS, Thomas H. Mallory, MD, FACS, Kathleen L. Dodds, BS, RN, Joanne B. Adams, BFA, Joint Implant Surgeons, Inc., 720 East Broad Street, Columbus, Ohio

Venous thromboembolic disease (VTD) occurs following THA and TKA. Ileus occurs up to 4.0%. 3364 Primary and revision THA and TKA over 2-years were reviewed to examine a relationship between ileus and VTD. Prophylaxis was aspirin and intermittent pulse boots for most. High risk patients received chemical prophylaxis and boots. 62 Patients had ileus (2.1%) and symptomatic DVT in 51 (1.7%). With ileus, the incidence of DVT was 8.1%: odds ratio 5.5 (p=0.0036). Symptomatic PE occurred in 7 (0.24%); with ileus the incidence was 3.2%: odds ratio 19.6 (p=0.0082). A significant increase in rates of VTD with ileus was seen.

**2004 A LARGE DIAMETER METAL-ON-METAL PROSTHESIS MAY DECREASE EARLY DISLOCATION IN PRIMARY, MINIMALLY INVASIVE AND REVISION TOTAL HIP ARTHROPLASTY**

Thomas M. Smith, DO, Keith R. Berend, MD\*, Adolph V. Lombardi Jr., MD, FACS, Roger H. Emerson Jr., MD, Thomas H. Mallory, MD, FACS, Joint Implant Surgeons, Inc., 720 East Broad Street, Columbus, Ohio Post-operative dislocation causes morbidity and failure in THA. The dislocation rate for a large diameter metal-on-metal prosthesis was examined. We reviewed 329 consecutive patients (377 hips) undergoing THA with large diameter metal-on-metal THA. Two approaches were utilized: anterolateral (342) and mini-incision posterior (35). Age at surgery averaged 55.9 years and follow-up averaged 3.9 months. Procedures included 346 primary, 15 conversion, and 16 revision/reimplantation. Sixty-two patients had diagnoses at high risk for dislocation. During the follow-up, there were no dislocations. Large diameter metal-on-metal articulations are a viable choice for primary and revision THA and decrease dislocation risk.

**2004 MEDICAL LIABILITY REFORM**, Richard Bruch, M.D., Durham, North Carolina

Factors that helped to cause the increase in Medical Liability insurance premiums were reviewed. The sharp increase in premiums did not affect all specialties equally.

Those physicians performing procedures such as those delivering babies had a larger increase than primary care physicians.

Organized medicine proposed a bipartisan effort to achieve a legislative fix to the Medical Liability insurance crisis. Partisan politics assumed control of the issue at both the national and state levels, in most cases resulting in lack of meaningful legislation.

To achieve the Medical Liability reforms needed to stabilize Medical Liability insurance premiums and preserve access to medical care, doctors will need to get involved.

**2004 THE “DROP SIGN”, A RADIOGRAPHIC WARNING SIGN OF ELBOW INSTABILITY**, Ralph W. Coonrad, M.D.\*, Thomas F. Roush, M.D., Nancy M. Major, M.D., Carl J. Basamania, M.D., Durham, North Carolina

Persistent instability or redislocation is uncommon but of significant concern concerning treating elbow dislocations. Following reduction, the finding of an objective, static, radiographic sign that might correlate with the presence of instability was the purpose of this study. Pre and post-reduction radiographs of ten consecutive simple and complete adult elbow dislocations (from an institutional series of 183 complex and simple dislocations) were compared with radiographs of twenty consecutive adult elbows without trauma history. A statistically significant measured increase in static ulnohumeral distance was noted on the routine unstressed post-reduction lateral radiographs of patients sustaining dislocation. We have termed this increased distance the “drop sign”. It differs from the radiographic ulnohumeral separation noted during O’Driscoll’s test for posterolateral rotary instability which is present only with axial compression. The “drop sign” becomes concerning only if persistent or recurrent after the first reduction radiograph and may be a warning sign of the presence of instability.

**2004 THE ABILITY OF MRI TO PREDICT FAILURE OF NONOPERATIVE TREATMENT OF PYOGENIC VERTEBRAL OSTEOMYELITIS**, Scott McAtee, M.D., F. Spain Hodges, M.D., Steven M. Theiss, M.D., John S. Kirkpatrick, M.D.\*, Gerald McGwin, Ph.D., University of Alabama at Birmingham Hospital, Birmingham, Alabama

Magnetic resonance imaging (MRI) of twenty-two patients with pyogenic vertebral osteomyelitis were reviewed to determine whether MRI predicted failure of nonoperative treatment. Nine patients failed non-operative treatment and required surgical intervention. Patients treated successfully by non-operative means had an average of 57% +/- 19% involvement of the affected motion segment, whereas those failing conservative treatment had an average of 89% +/- 18% involvement of the affected motion segment.

Patients with Pyogenic Vertebral Osteomyelitis that have ninety percent or greater

involvement of an affected motion segment should be considered for early operative management.

**2004 CORRECTION OF JOINT AND SOFT TISSUE CONTRACTURES IN CHILDREN: THE ROLE OF A MULTIPLANAR-GEARED CORRECTION DEVICE**, L. Andrew Koman, MD\*, Beth Paterson Smith, PhD, Greg Mohler, BS, Richard Bryant BS, Wake Forest University School of Medicine, Winston-Salem, North Carolina

Acute correction of joint deformity with or without associated soft tissue contractures is a difficult problem requiring radical release of the joint, osseous resection, or staged correction with pins and cast or thin wire multiplanar ring fixation. In order to simplify this process, a multiplanar-gear minirail device was designed to allow incremental longitudinal distraction, flexion-extension, and radial-ulnar correction. The geared multiplanar fixator was used in 7 patients. Clinical indications for the use of the fixator were radial club hand (n=5 extremities) and wrist flexion contracture and spasticity (n=3 extremities). All patients experienced improved range of motion, grasp, release, and activities of daily living. Multiplanar-gear fixation is useful for managing complex upper extremity deformities in pediatric patients. The fixator is simple to apply and permits correction in the palmar-dorsal and radial-ulnar planes, and if necessary, distraction can be performed.

**2004 RADIAL COLLATERAL LIGAMENT INJURIES OF THE INDEX METACARPOPHALANGEAL JOINT: AN UNDERREPORTED INJURY OF SIGNIFICANT CLINICAL IMPORTANCE**, Gary Lourie, M.D., Atlanta, Georgia

14 patients with RCL injuries to the index MCP joint were reviewed. Age, mechanism of injury, delay to treatment, and grade of injury were correlated with pain, change in function, stability, motion, strength, degenerative changes, and satisfaction.

Grade 1-2 early treated with casting had excellent results. There were no stable injuries late. All grade 3 early were treated surgically with good to excellent results. Of grade 3 late all had poor results. MCP joint fusion was an effective salvage procedure for stability and pain. Four late grade 3 patients opted for non-operative and have instability.

The significance of this injury remains underestimated and the diagnosis requires a high index of suspicion.

**2004 PERONEUS BREVIS SPLIT TEARS**, Angus McBryde, M.D., University of South Carolina School of Medicine, Columbia, South Carolina Horizontal split tears of the brevis are becoming increasingly common with more intense training, more eccentric loads (ie: plyometrics) and heavier, more agility-skilled athletes. Early

recognition and aggressive treatment are important. Thirteen males and five females (one with a bilateral peroneus brevis tear) were studied. Sixteen were operated. Ten were athletes. Diagnosis was aided by MRI repositioning with the ankles held in gravity equinus and eversion. All were active. The eight isolated repaired tears returned to their sport at an average of 4.5 months. The other nine required additional surgery involving 4 lateral reconstructions for instability, 4 peroneus longus tears, 2 subluxing peroneals, 2 osteotomies, 1 OCD lesion and 1 “over stuffed” peroneal groove. Peroneus brevis longitudinal tears have additional pathology 50% of the time, usually requiring surgery. The tears with or without the associated injuries when no fixed deformity has developed can be successfully reconstructed.

**2004 HOW TO PREVENT AND SURVIVE A MEDICAL MALPRACTICE SUIT**, Richard J. Nasca M.D., Wilmington, North Carolina The presentation describes the contents of a multi authored book dealing with medical malpractice issues. The purpose of the book is to educate physicians about ways to prevent and avoid claims as well as to prepare them for litigation if that becomes necessary. The book consists of 30 chapters authored by attorneys, doctors of medicine with and without law degrees and other individuals knowledgeable about medical malpractice matters. After reading this book, a physician should be able to navigate the legal process with more understanding, confidence and less trepidation.

**2004 ANTERIOR CERVICAL FUSION WITH POROUS TANTALUM TRABECULAR METAL IMPLANTS**, Robert M. Peroutka, M.D., Johns Hopkins University School of Medicine, Baltimore, Maryland Iliac crest bone graft (ICBG), allograft, and synthetic implants are options for anterior cervical fusion (ACF). Reported complication and morbidity rates for ICBG done site are as high as 21%. Disadvantages of allograft include lower fusion rates, the possibility of disease transmission, expense, availability, inconsistent quality and graft collapse. Trabecular metal (TM) is a porous tantalum implant that can be used as an anterior cervical fusion implant. TM (Zimmer) is manufactured in a structure that is 70-80% porous. Initial results of the FDA IDE cervical study from May 2001 through April 2004 include 50 patients from my institution with follow up from 6-24 months (average 12 months). There is no significant difference in the preoperative and postoperative neck disability index between the TM study group and the allograft control group. Fusion rate for allograft is 81%, fusion rate for TM is 95%, with no significant difference.

**2004 LOCKED PERIARTICULAR VOLAR PLATING FOR DISTAL RADIUS FRACTURES**, Marco Rizzo, MD, Duke Medical Center, Durham, North Carolina

**Introduction:** Distal radius fractures are very common and often require surgical intervention. This study is a retrospective review of results using a locked volar plating technique.

**Materials:** Sixty-eight patients were treated with Synthes' volar locking plate for distal radius fractures over an 18-month period.

**Results:** All of the fractures healed with the volar locking plate technique. There were no cases of hardware failure. Post-operative range of motion averaged approximately 80% of unaffected.

**Discussion:** Locked volar plating for the management of some distal radius fractures has been effective with encouraging early results

**2004 Locked Periarticular Volar Plating for Distal Radius Fractures**, Marco Rizzo, MD, Duke Medical Center, Durham, North Carolina

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**2004 ARTHROSCOPIC GANGLIONECTOMY IN THE MANAGEMENT OF DORSAL WRIST GANGLIONS**, Marco Rizzo, MD\* Duke Medical Center, Durham, North Carolina, Richard Berger, MD, Scott Steinmann, MD, Allen Bishop, MD, Mayo Clinic, Rochester, Minnesota

**Introduction:** Dorsal carpal ganglions are common causes of pain and limited function. The purpose of this paper is to review the results of arthroscopic resection of dorsal wrist ganglions.

**Methods:** Forty-one patients with dorsal wrist ganglions underwent arthroscopic resection. There were 24 females and 17 males. The average patient age was 29.8 years.

**Results:** The average follow-up to date is 35.2 months (range 6 to 84). In all patients post-operative range of motion was equal to or better than pre-operative motion. Thirty-nine of 41 (95.2%) patients had no recurrence.

**Discussion:** Based on these results, arthroscopic ganglionectomy is a safe and reliable alternative to open resection.

**2004 SPINAL DEFORMITY FOLLOWING SELECTIVE DORSAL RHIZOTOMY**, David A. Spiegel, M.D., Shriner's Hospitals for Children/Twin Cities, Minneapolis, Minnesota A subset of patients with presumed idiopathic scoliosis will have an underlying neural axis abnormality, and the indications for further imaging (MRI) are based upon clinical and radiographic features, the latter of which remain somewhat nebulous. Suggested clinical indications include abnormalities on the history (pain, radiculopathy, bowel/bladder dysfunction, persistent headache) or physical examination (cutaneous abnormality, motor/sensory deficit, bowel/bladder dysfunction, foot deformity). In addition, both age (infantile or juvenile) and gender (male) may be important. Suggested radiographic indications include rapid progression, dysplastic changes, a normal to hyperkyphotic thoracic spine, and atypical curve patterns or features.

**2004 TARGETED FASCICULAR BIOPSY OF MAJOR LOWER EXTREMITY PERIPHERAL NERVES**, Robert J. Spinner, M.D.\*, Kimberly K. Amrami, M.D., P. James B. Dyck, M.D., Mayo Clinic, Rochester, Minnesota

**Introduction.** The diagnosis of many proximal lower limb mononeuropathies or lumbosacral plexopathies remains elusive despite thorough evaluation, including routine MRI and even, sural nerve biopsy. Empiric medical or surgical treatment is typically attempted with limited success for neurologic recovery.

**Materials and Methods.** Ten patients (average age 42 years) with non-compressive peroneal, tibial, sciatic neuropathies or lumbosacral plexopathies affecting 14 limbs were evaluated. Localization was established by physical examination and confirmed with electrodiagnostic studies. High resolution MR neurograms were performed in all cases. Six patients had previous non-diagnostic distal cutaneous nerve biopsy (sural in 5 and superficial peroneal in 1). Fascicular biopsy was performed of the peroneal (1), tibial (2) or sciatic nerve (7). The biopsy location was selected by considering percussion tenderness, surgical accessibility, imaging and operative abnormalities.

**Results.** In all patients, percussion of the affected nerve revealed an area of irritation with radiating paresthesias. This area correlated with signal abnormality and/or enlargement of the nerves demonstrated on MRI. These imaging abnormalities were often subtle. In all cases, the fascicular biopsy was informative for a specific pathologic alteration: lymphoma (1), sarcoidosis (1), perineurioma (2), inflammatory/immune suggestive of vasculitis (2) and inflammatory demyelinating (4). No complication resulted from the fascicular biopsy.

**Conclusions.** Targeted fascicular biopsy, when performed at a center specializing in peripheral nerve diseases, can be accomplished safely. It can lead to diagnoses of lower limb neuropathies that have therapeutic implications. MR neurograms can localize focal

or multifocal proximal limb nerve lesions, but are not by themselves diagnostic of the pathologic process.

**2004 TREATMENT OF OSTEONECROSIS OF THE PEDIATRIC FEMORAL HEAD FOLLOWING PYARTHROSIS**, Allston J. Stubbs, MD, Eunice B. Gunneson, PA-C, James R. Urbaniak, MD\*, Duke Medical Center, Durham, North Carolina

Pyarthrosis of the pediatric hip can lead to osteonecrosis of the femoral head. When symptomatic, treatment options for this condition are limited. We have hypothesized that free vascularized fibula autografting (FVFG) is an effective treatment for symptomatic osteonecrosis of the pediatric femoral head secondary to pyarthrosis. Our study evaluated seven patients who presented with Stages IV and V osteonecrosis of the femoral head. All patients were treated with free vascularized fibular autografting to the femoral head. Postoperative evaluations of pain symptoms, hip range of motion, and Harris Hip Scores showed improvements in all patients. Hip range of motion was noted to be significantly improved in the arcs of flexion (+23 degrees;  $p=0.002$ ) and external rotation (+22 degrees;  $p=0.014$ ). Harris Hip Scores increased significantly from an average preoperative score of 68 to an average postoperative score of 96 ( $p=0.002$ ). No patients were revised to hip arthrodesis or arthroplasty within the average three year follow-up period. In conclusion, free vascularized fibular autografting is a reasonable option in the treatment of osteonecrosis of the pediatric hip secondary to pyarthrosis.

**2004 THE MEDICAL MALPRACTICE INSURANCE DILEMMA - A VIRGINIA PERSPECTIVE**, David C. Urquia, MD, Mechanicsville, Virginia

Presented is a summary of the 2004 legislative effort in the Virginia General Assembly, concerning tort reform and relief for physicians and hospitals struggling with medical malpractice issues.

These included SB 601, creating a state-run malpractice insurance program; HB 1127 providing venue limits for malpractice trials; HB 627 requiring plaintiffs to cover all defense costs in cases of nonsuit; SB 385 creating protection for peer-review activities by physicians.

A summary of legislative activity in nine other states was provided to the committee by the national Piedmont Society membership, and presented.

A series of recommendations was made encouraging physician involvement in the legislative process, goals for future legislation including caps on economic and non-economic damages. However, it was concluded that in the current political climate that only marginal prospects exist for meaningful and comprehensive tort reform and relief for physicians with high insurance premiums until legislators and the public perceive a crisis situation over “access to care” issues in their home states.