## A Message from the Section Head

2

## Orthopaedic Surgery Services

- Orthopaedic Trauma Service 4
- Winnipeg Spine Program 7
- Concordia Joint Replacement Group 12
- Sports Medicine and Upper Extremity Service 19
- Paediatric Orthopaedic Service 25
- Diabetic Foot Service 28

## Orthopaedic Residency Training Program 30
2009 has been another successful year of growth for the Section of Orthopaedics. We saw the opening of the Concordia Hip and Knee Institute which is a world class institute and is rapidly becoming filled with researchers who will test implant wear and wear simulation. In particular, the hiring of Lynda Loucks, Dr. Jan Brandt and Dr. Urs Wyss have been major highlights for the Hip and Knee Institute. All who have not seen the institute are encouraged to go over and have a tour of this fabulous facility.

The Pan Am Clinic Foundation continued to grow with the opening of the Biomechanics Centre and Motion Analysis System under Dr. Barb Shay who will be doing several model research at the Pan Am Clinic Foundation. Further research using the Anti-Gravity Treadmill and the Arthroscopic Knee Simulator is ongoing and is progressing. In addition, Sheila McRae has passed her PhD Candidacy Exam and is working hard on ACL research towards her PhD thesis. Dr. Jason Peeler has joined us from the Department of Human Anatomy and Cell Science and will be collaborating on many research fronts. Dr. Jeff Leiter convocated with his PhD and continues to lead many of our efforts.

At the Health Sciences Centre Dr. Mike Johnson, Dr. Dean Kriellaars and Dr. Michael Goytan are successfully building a Spine Research Program with a lab being developed at the Rehab Centre, including the return of Kim Stoughton from maternity leave and the acquisition of Rob Pryce who is in a PhD Program.

The Trauma Group also continues to improve their research with Dr. Nigar Sultana assisting and Dr. Ted Tufescu entering a number of multicentre studies on behalf of the group. Further progress will hopefully occur in 2010 in the area of database creation for all of our subsections.

Our recent meeting of the Joint Research Council of Orthopaedics on December 10th, 2009 highlighted the growth of research within the Section which is extremely exciting. This included representation from all subsections and an ever increasing number of affiliated researchers with Orthopaedics. The spirit of collaboration between the different sites and subsections is very encouraging as well.
On the clinical side, the hiring of Dr. Jason Old and Dr. Greg Stranges at the Pan Am Clinic has rounded out an excellent Upper Extremity/Sports Medicine team for moving into the future. Already wait lists are under better control and an upper extremity call system has improved access to care for Upper Extremity Trauma.

We are in the process of advertising for a new Paediatric Orthopaedic surgeon and 2010 will also see the return of Dr. Susan Thompson from maternity leave. This will help ease the clinical burden which has been excellently carried out by Dr. Jack McPherson and Dr. Paul Jellicoe.

We are also excited to have Dr. Jack McPherson continue to lead and develop the Orthopaedic Surgery Education Program as Program Director. The changes that he has instituted and the organization of the Program have been excellent so far. We were excited to have a 100% pass rate of our residents at the Royal College Exam this year. Thanks to Donna Shepard, Program Coordinator, for all her hard work in keeping the program organized.

Also in 2010 we are looking forward to the hiring of another clinical assistant at the Health Sciences Centre which will help ease the ward burden and improve patient care in Orthopaedic Trauma and Spine Surgery.

On the Grand Rounds front we are happy that Dr. Brian Black is serving as Grand Rounds Coordinator and has continued to organize Grand Rounds in an exemplary fashion.

Congratulations to all of you who have worked so hard to make this Section one of the better and well rounded sections in Canada. We hope to continue to strive forward in 2010.

Dr. Peter MacDonald, BSc MD FRCSC
Gibson Professor and Head, Section of Orthopaedics
University of Manitoba
The Orthopaedic Trauma Service at Health Sciences Centre provides expert care for patients with severe musculoskeletal injuries and related complications. We are a regional resource for physicians challenged by complex Orthopaedic cases. The service also provides coverage for non-trauma cases such as musculoskeletal infections, tumors, and amputations.

Patients with acute and chronic conditions are managed by our service. Approximately 1500 surgical cases are completed by the service each year. Acute conditions include severe fractures of the upper and lower extremities. Other injuries may include open fractures, complex periarticular injuries, and pelvic and acetabular fractures. Chronic conditions may include nonunions, malunions, infections, and osteomyelitis.

November of this year we held the first Fracture Symposium for Orthopaedic Surgeons and the second Orthopaedic Operating Room Personnel Course (Dr. Graham organized the first in 2007). The courses were chaired by Drs. Tufescu and Graham, and hosted faculty from the Universities of Toronto, Alberta and Manitoba. Attendance was excellent and the chairs look forward to 2010 for more exciting trauma sessions.
We thank our research coordinator Dr. Nigar Sultana, who has completed her first year with us. She has made all of the advances in the development of Research program possible. We also congratulate 2nd-year Resident, Dr. Jamie Rusen and medical student Bryn Sharkey for taking two trauma studies to completion and presenting at the Resident Research Day.

Finally, congratulations to Dr. Jesse Shantz, resident Year 4, for being awarded the Orthopaedic Trauma Association (OTA) Resident Research Grant. This Grant is presented annually and may be used by the successful applicant for any research issue related to musculoskeletal trauma, excluding product development. Dr. Shantz, along with co-investigators Dr. David Sanders and Dr. Chris Graham, received the grant for their research entitled “The Efficacy and Cost Effectiveness of Preoperative and Postoperative Cryotherapy in Proximal Tibia Fractures.”
Grants


Presentations

- Graham C, AO North America Western Canada Fracture Symposium, Faculty Member. Calgary, AB, July 10–12, 2009.
- Tufescu TV. Concept of Indirect Reduction. Course Faculty. AO North America ORP course, Toronto, Ontario, August 2009.
- Tufescu TV. Avoiding complications during IM nailing procedures. Course Faculty. AO North America ORP course, Toronto, Ontario, August 2009.
The Winnipeg Spine Program continues to steadily grow with respect to the number of cases operated and research output. The Program is based at the Health Sciences Centre (HSC), Winnipeg and is a multi-disciplinary team of Orthopaedic Surgeons, Neurosurgeons, nurses, intra-operating monitoring technicians, physiotherapists and occupational therapists trained to treat complex disorders of the spine. The program treats degenerative, developmental, congenitive, inflammatory, traumatic and cancerous spinal disorders in adults and children.

The Spine Program team is on call 24/7/365 and receives the most complex orthopaedic cases – including cases that others can’t or won’t handle as it is the only program of its type between Toronto and Calgary. In any given year we may perform 400+ major spinal surgeries and 2,000+ clinical visits. A significant portion of these surgeries are “instrumented surgeries.”

Dr. Michael Goytan, BSc MD FRCSC
Site Director Orthopaedics –
Health Sciences Centre
Head, Winnipeg Spine Program
Assistant Professor, Orthopaedics and Neurosurgery

Dr. Michael Johnson, BA BSc MD FRCSC
Director, Spine Performance Laboratory
Assistant Professor, Orthopaedics and Neurosurgery
The program continues to strive to be a national leader in the development and utilization of minimally invasive surgical procedures and the use of new implant technologies such as artificial cervical and lumbar disc replacements. This has not been without its challenges this past year given the downward trend in global economies and the subsequent lack of new monies.
Orthopaedic surgeons have a long history of ingenuity – the program has now performed two cases of growing rods for early onset scoliosis utilizing existing implants in a hybrid fashion (a mix of cervical and thoracolumbar implants). This is an emerging part of spine surgery and will be an expanding part of our clinical practices.

Dean Kriellaars, PhD has accepted the role of Research Director in the Spine Research Lab of the Winnipeg Spine Program. Under his direction the Lab is currently involved in a number of projects. Our research interests are on patient measured objective functional outcomes in cervical myelopathy and spinal stenosis patients. In addition to these projects an evaluation of mobility and pain is being conducted between standard lumbar microdiscectomy and METRIX access techniques. Through the support of the Rick Hansen Foundation the Winnipeg Spine Program has been enrolling patients for the traumatic spinal cord injury registry. This information will provide insight into best care treatments and management of a catastrophic and life altering injury. We hope through this data base to derive information which will identify individuals who are at risk for a spinal cord injury and create preventative strategies.

Our gratitude is extended to Marshall Wilkinson PhD who is currently our only intra-operative monitoring technologist. His skill set has allowed us to perform major spinal reconstructions of both children and adults without any neurologic sequelae. To enhance this resource we are anxiously awaiting the start of a second monitoring person and looking ahead to hiring a third position. Having this additional resource will certainly ease conflicts for our dedicated staff – Tanis Bokouzis, Sherie Burton, Dana McMillan, and Raina Clowater.

Dr Fawzi Mazek successfully completed our spine fellowship program in June, 2009 and has presented a poster at the Canadian Spine Society Meeting in Quebec. His poster Cervicothoracic fixation was well received and is awaiting acceptance for publication. He has moved out to Winkler, MB where he will continue his orthopaedics career. We wish him all the best in his future endeavors!

Dr. Ali Al Hayek commenced his one year spine fellowship with the Winnipeg Spine Program this past summer. Dr. Hayek is originally from Saudi Arabia, but he completed his full Neurosurgical Residency at the University of Western Ontario in London (2002–2009). He recently passed his Royal College exams.

We would like to congratulate Kim Stoughton, Clinical Research Coordinator for the Winnipeg Spine Program, on successfully completing her certification examinations as a Certified Clinical Research Professional. Your accomplishment is well deserved.

Finally, we congratulate Ramon Angeles who passed his Clinical Assistant Part II Certification Examination on May 19, 2009. Surgeons, Residents and Support Staff have all expressed their gratitude and appreciation of the fantastic job that Ramon is doing and would like to formally recognize his accomplishment.
Grants


Publications

- Elyousfi AA, Leiter JR, Goytan MJ, Robinson DB, Mycobacterium heckeshornense Lumbar Spondylodiskitis in a Patient with Rheumatoid Arthritis receiving Etanercept treatment, Rheumatol, 2009 Sep; 36(9):2150-1

Presentations


The Concordia Joint replacement Group (CJRG) is based out of the Concordia Hip and Knee Institute (CHKI) and the Concordia Hospital. The Group provides both hip and knee revision and primary joint replacement surgery. We are tracking for approximately 1400 surgeries and 120 emergency joint replacement procedures per year. The Group completes roughly 90% of all Hip and Knee revisions in the province of Manitoba.

In June, 2009 the Group moved its clinical and research offices into the new Concordia Hip and Knee Institute, adjacent to the Concordia Hospital. This project involved four years of planning as well as support from the Winnipeg Regional Health Authority (WRHA), Concordia Foundation, Concordia Wellness Projects Inc., all levels of government, and many dedicated individuals without whom, the project would not have occurred. Special thanks to Martin Petrak for all of his work and dedication to the project. The official grand opening occurred on Sept. 3, 2009 to a standing-room-only audience. Dignitaries from the premier’s office, federal and local governments, WRHA and the University of Manitoba (U of M) were all in attendance.

Dr. David Hedden, BSc MBCHB FRCSC
Site Director
Assistant Professor

Dr. Eric Bohm, BEng MD MSc FRCSC
Assistant Professor
Research:
Martin Petrak, MSc PEng
Biomedical Engineer
Director of Research Operations

Michael Sinaisky, BSc CCRP
Clinical Research Coordinator

Nathan Kester, MSc
Biomedical Engineer (EIT)

Ili Slobodian, BA BSc MSc
Clinical Research Coordinator

Dr. Jan Brandt, Dipl – Ing PhD
Research Manager, Tribology

Lynda Loucks, BMR PT MSc (Rehab)
Researcher

Rebecca Austman, BSc (ENG) PhD
Post Doctoral Research Fellow

Shannon Barker, Research Assistant

Sean O’Brien, BSc (ENG) MSc
(Candidate) Biomedical Engineer

Support Staff:
Susan Rubin, BA HRM (Hons)
HSM (Hons)
Manager, Physician Services
Josephine Cervantes, Surgical Office Assistant
Shelley Miller, Surgical Office Assistant
Janet Darknell, Surgical Office Assistant
Pauline Pikl, Surgical Office Assistant
Laura Paulson, RIS/PACS Clerk and Reception
Tracy Scott, Clinic Reception
Kimberley Melkie, Clinical Office Assistant
Kimberley Leeson, Surgical Office Assistant

Dr. Colin Burnell, BSc MD FRCSC
Assistant Professor

Dr. Thomas Turgeon, BSc MD MPH FRCSC
Assistant Professor

Grand opening of the Concordia Hip and Knee Institute. (left to right) Mrs. Louise Townsend, Honorable Kerri Irvin-Ross, Dr. David Hedden, Mr. David Olfert and Mrs. Elizabeth Wall
With the move to the Hip and Knee Institute, the University of Manitoba Joint Replacement Group (UMJRG) changed its name to the less cumbersome Concordia Joint Replacement Group (CJRG). While “University of Manitoba” has been removed from the group name, the CJRG will continue on as the academic joint replacement group of the University of Manitoba while developing even stronger ties to the U of M through partnerships such as those with the Faculty of Engineering and the Experimental Media Centre.

Surgery and post-operative activities continue to be performed at the Concordia Hospital. The Institute now forms the hub for Hip and Knee Replacements for many years to come. The goal is to create an integrated facility that provides pre-operative assessment, a pre-habilitation program to optimize patients’ health before surgery, post-operative follow up through a high efficiency clinic, digital imaging suites, and office space for surgeons and their support staff. The move to the new facility has also allowed for the consolidation of our research efforts and room for future expansion of our research initiatives.

Mr. Martin Petrak has been appointed the new Director of Research Operations to Operate the Engineering and Clinical Research divisions and research facilities at the Concordia Hip and Knee Institute. At the Institute, Martin is also responsible for many of the research fundraising initiatives with the Concordia Foundation to develop industrial/academic/government relations and to foster and implement innovation through medicine and engineering.

The group is heavily involved in research with currently over 25 clinical studies involving joint replacement patients including areas such as clinical/functional outcomes, return to work, access to care, and implant stability. In addition we currently have five engineers working in the areas of implant assessment and failure and finite element analysis; the Industrial Research Chair in Engineering to locate at the CHKI in 2010; and current partnerships include: Pan Am Clinic, Faculty of Engineering, Experimental Media Centre, and Dr. El-Gabalawy (Rheumatology).

We are pleased that a state-of-the-art Direct Radiography, Radiostereometric Analysis (RSA) Suite is nearing completion at the Concordia Hip and Knee Institute. The RSA technology will allow researchers and physicians to systematically measure joint replacement fixation over time. This installation will be one of two systems now operating in the world with the other located in Halifax, NS by Halifax Biomedical Inc. as the original prototype. This system will allow standardized RSA examinations occur as part of a larger RSA network that Winnipeg and Halifax will lead in North America. Several abstracts have now been submitted to the Orthopaedic Research Society and the Canadian Orthopaedic Society 2010 annual meetings.

The future programs to be housed at the Institute will include expansion of the Implant Retrieval and Analysis laboratory including a large chamber scanning electron microscope, wear simulation, implant testing and finite element analysis. With the facility now constructed, the focus turns to outfitting the research and academic portions of the facility for what we expect to be a strong addition to the Orthopaedic and Engineering facilities in Winnipeg.
Given the CJRG completes approximately 90% of the Hip and Knee revisions in the province, a new initiative is underway to establish a Provincial Hip and Knee Implant Retrieval Laboratory. Since 2005, the implant retrieval lab has collected more than 1200 implants from the CJRG’s Revision Arthroplasty practice at Concordia Hospital. A recent publication was accepted into the Journal of Arthroplasty: “Mechanical Testing of Ti-6Al-4V Modular Revision Hip Stems.” Another paper is being submitted for publication next month regarding knee implant damage identified from the IRAP. Several abstracts have also been submitted to the Canadian Orthopaedic Society 2010 annual meetings. The lab has also facilitated (1) one MSc thesis.

Through internal development and investment into Biomedical Engineering research activities, the CJRG has strengthened academic relationships with the faculty of Engineering at the University of Manitoba in order to strengthen the Orthopaedic innovation capabilities in Manitoba.

By partnering with the U of M Engineering Department, the CJRG was able to work with Orthopaedic industry to develop a unique opportunity to establish a National Science and Engineering Research Council (NSERC) Senior Industrial Research Chair in Orthopaedic Biomedical Engineering. An Internationally recognized candidate with Academic and Industry training has been selected to propose a 5yr research project to be submitted to NSERC by January 2010.

Dr. Jan Brandt was recently recruited by the CJRG to run the CHKI’s Tribology Research Program. After he completed his masters he was given the opportunity to establish a wear testing laboratory at the London Health Sciences Centre, London, Ontario where he conducted his PhD research in the area of wear of total knee replacements. In 2008 he graduated from the University of Waterloo. Once the Knee simulators are acquired at the Hip and Knee Institute, Jan’s research will begin immediately on the lubrication properties of knee simulator testing and polyethylene wear of modern knee implants.

CJRG submitted a request for funding to Western Economic Diversification (WED) (Federally), and to Science Technology Energy and Mines (STEM) (Provincially) as a three way partnership with the Concordia Hospital/Concordia Foundation for a research grant for a Strategic Research Initiative at the Concordia Hip and Knee Institute. It has been several months now and we are still awaiting any news from both WED and STEM.

The CJRG initiated collaborative research between Prof. El-Gabalawy (UofM) and Dr. Brandt (CJRG) to investigate regeneration of synovial fluid in the joint capsule after hip and knee replacement surgery and if the fluid’s lubricating characteristics are affected. This study is deemed important to gain more insight into the in-vivo lubrication process of artificial joint replacements. Findings from this study will help to improve current lubricants used for wear simulation and thus help to enhance the durability of total joint replacements.
November 1st 2009 Dr. Arfan Malhi from London UK joined the CJRG as a surgical Fellow. Dr. Malhi will be with the CJRG for a 1-yr Fellowship in Hip and Knee Primary and Revision Arthroplasty. He is Graduate from University of London where he did most of his training in and around London. Currently he is with the University Collage London Orthopaedic department. His research interests lie in both clinical and Biomedical Bench top research areas.

Dr. Rebecca Austman has joined the CJRG in July. Dr. Austman completed her B.Sc. in Biosystems Engineering at the University of Manitoba in 2004 -completed Ph.D. in Mechanical Engineering at The University of Western Ontario in May 2009, in the area of Orthopaedic biomechanics. Her Ph.D. thesis focused on in-vitro experimental testing related to design parameters for distal ulnar replacements, as well as development of material property relationships for use in subject-specific finite element models of the ulna. Dr. Austman’s will work with the CJRG at the CHKI on in-vitro experimental testing and finite element modeling.

Finally, the group would like to congratulate Dr. Eric Bohm for his selection and participation in the 2009 ABC Travelling Fellowship.

The ABC Traveling Fellowship is an educational exchange shared by a group of young Orthopaedic surgeons selected by the American, British, Canadian, New Zealand, Australian and South African Orthopaedic associations. The Fellowship was conceived by Dr. R.I. Harris of Toronto, Ontario during his presidency of the American Orthopaedic Association (AOA) in 1948.

The tour begins in the Spring of every odd year (i.e. 2009, 2011, 2013 etc.). During the even-numbered years (i.e. 2010, 2012, 2014 etc.), overseas Fellows visit North America, while Fellows from the United States and Canada tour abroad during the odd-numbered years (i.e. 2009, 2011, 2013 etc.). Fellows from the US and Canada will always visit Great Britain, but will alternate Australia and New Zealand with South Africa during their tour as ABC Fellows.

**Operation Walk**

From Oct. 31 to Nov. 7, 2009, members of the CJRG were invited to participate in Operation Walk Canada’s mission to Antigua, Guatemala. Operation Walk is a charitable organization with a mission to provide hip and knee replacements in developing countries for patients unable to afford the procedures. Drs. Dave Hedden and Tom Turgeon traveled to Guatemala along with three OR nurses and one ward nurse from Concordia Hospital. Together, they joined a team of 49 physicians, nurses and allied health staff from across Canada, the United States, England and Spain. The team performed 76 joint replacements in 68 patients over a course of three and one half days using four small OR theatres. The mission was a great success. We look forward to participating in additional missions to developing countries in the future, as funding allows.
Grants

- Noseworthy, T (PI), Bohm, E (CPI). Total Joint Replacement Strategic Management for Timely Treatment. CIHI Emerging Team Grant-Canadian Institutes of Health Research, (CIHR) November 2008–November 2013

- Frank C (PI), Bohm E (CPI). Creating Bone and Joint Health from the Bedside to the Bench and Back Again. Alberta Heritage Foundation for Medical Research (AHFMR) April 2008–April 2013


- Burnell C, Extended Prophylaxis, Comparing Low Molecular Weight Heparin Following Aspirin in Total Hip Arthroplasty. CIHR


- Burnell C, Unrestricted Research and Program Development Grant. Smith and Nephew

- Burnell C, Implant Retrieval and Analysis Program and Radiostereometric Analysis Laboratory. Alexander Gibson Fund – University of Manitoba

- Hedden D, CIHR Extended Prophylaxis, Comparing Low Molecular Weight Heparin Following Aspirin in Total Hip Arthroplasty.


- Hedden D, Unrestricted Research and Program Development Grant. Smith and Nephew

- Hedden D, Implant Retrieval and Analysis Program and Radiostereometric Analysis Laboratory. Alexander Gibson Fund – University of Manitoba

Publications – Peer Reviewed Journal Articles


Book Chapters and Review Articles


Presentations

- Bohm E, Moderator: Knee Reconstruction 1, Instructional Course Lecture, COA Annual Meeting Whistler BC, July 2009
- Bohm E, Presenter: Starting an Academic Practice, CORA Career Development Symposium, Whistler, British Columbia, July 5, 2009
- Bohm E, Presenter: Update on Hip and Knee Arthroplasty, Guayaquil Orthopaedic Association, Ecuador, June, 2009
- Bohm E, Guest Speaker: The Impact of Total Hip Arthroplasty on Employment, Combined University of Stellenbosch, University of Cape Town and CWB Academic Meeting, May 21, 2009
- Bohm E, Guest Speaker: Complications and Associated Costs Following Joint Replacement Surgery in Canada, Combined University of Stellenbosch, University of Cape Town and CWB Academic Meeting, May 21, 2009
- Bohm E, Guest Speaker: What Have We Learned from Canadian Joint Replacement Registries? Bloemfontein, Johannesburg, May 19, 2009
- Bohm E, Guest Speaker: The Canadian Health Care System Strengths and Challenges, Scientific Meeting Portsmouth, Hampshire UK May 8, 2009
- Bohm E, Guest Speaker: The Canadian Healthcare System – Strengths and Challenges, Cappagh National Orthopaedic Hospital, Ireland, Dublin, May 4, 2009
- Bohm E, Guest Speaker: Complications and associated costs following joint replacement surgery in Canada, Musculoskeletal Study Group Joint Meeting, Norwich, Norfolk UK May 1, 2009
- Bohm E, Guest Speaker: What Can We Learn from the Canadian Joint Replacement Registries? Royal National Orthopaedic Hospital, Stanmore, UK, April 29, 2009
- Bohm E, Guest Speaker: What Can We Learn from the Canadian Joint Replacement Registries? Darlington, UK, April 27, 2009
- Bohm E, Guest Speaker: Impact of Total Hip Arthroplasty on Employment, Edinburgh, UK, April 24, 2009
- Bohm E, Guest Speaker: Update on Canadian Joint Replacement Registry, Contemporary and Future Concepts of Orthopaedics Whistler BC, February 6, 2009
- Bohm E, Guest Speaker: Joint Replacement in Patients with Metal Allergies – Fact or Fiction, Contemporary and Future Concepts of Orthopaedics Whistler BC, February 6, 2009
- Bohm E, Guest Speaker: PAs in Practice: 2nd National Physician Assistant Symposium, Ottawa, Ontario October 5, 2008. Sponsored by the Canadian Medical Association
- Bohm E, Barron L, Ong W, Hamedani R: Care of the Hip Fracture Patients Winnipeg MB, October 2008
- Burnell C, Smith and Nephew Hinge, Memphis, Tennessee, December 4–6, 2008
- Hedden D, Smith and Nephew Hinge, Memphis, Tennessee, December 4–6, 2008
- Hedden D, Lecturer: South Sherbrook Health Clinic September 9, 2009
Orthopaedic Sports Medicine and Upper Extremity Surgery Services are provided at the Pan Am Clinic and the Concordia Hospital. 2009 represented a major transition year as inpatient services at the Victoria Hospital in Orthopaedics were eliminated and transferred to Concordia. This resulted in an amalgamation of inpatient services with the Concordia Joint Replacement Group.

All in all it has been a very positive transition. The interaction between the Joint Replacement Group and the Sports Medicine Upper Extremity Group results in an improved call schedule, better arrangement for resident staff and a better ability to utilize the clinical assistants to assist with inpatient services. It also utilizes the expertise that the nursing staff in the operating room at Concordia and the nursing staff on the ward have with Arthroplasty patients, and translates that knowledge into upper extremity Arthroplasty, as well as complex ligament and bony reconstruction around the knee.

Dr. Peter MacDonald, BSc MD FRCSC
Gibson Professor and
Head, Section of Orthopaedics

Dr. Jamie Dubberley, MD FRCSC
Director Undergraduate Programs
Assistant Professor
2009 was also a year where we had two major recruitments to the service: Dr. Jason Old and Dr. Greg Stranges. Jason and Greg were both known to us from our residency training program. Dr. Jason Old arrived after fellowship training in Australia, New Zealand and Nice, France. Most notable was his time in Nice where he worked with Dr. Pascal Boileau, a world renowned Surgeon. This exposure has paid dividends in Jason’s ability to teach us about different philosophies related to shoulder surgery. He has also provided valuable insight into patient care services and how they were provided under different health care systems in France, New Zealand, and Australia.

Later in the year we also obtained the services of Dr. Greg Stranges. Additional training for Greg was obtained at the University of Toronto at Sunnybrook Hospital under Dr. Richard Holty, as well as at the Steadman Hawkins Clinic of the Carolinas under Dr. Richard Hawkins. This resulted in Greg’s proficiency in dealing with Orthopaedic Sport related injuries as well as shoulder and knee reconstruction. Both recruitments have been a major positive in terms of patient services and academics for the Sports Medicine and Upper Extremity Service.

We also had the good fortune of having four fellows in 2009. Dr. Eden Raleigh from Australia spent six months with us and Dr. Sahal Altamimi from Saudi Arabia via the Ottawa Residency Program, completed a one-year fellowship. They were both excellent fellows. Currently Dr. Paul van Zyl from Prince George, British Columbia and originally from South Africa is doing a four-month fellowship and Dr. Moustfha Alshrif, who we are all familiar with from our own Residency Training Program, is doing a one-year fellowship.

2009 has also been a major year for the Pan Am Clinic Foundation. Under the leadership of our Executive Director Dr. Jeff Leiter, research continues to blossom. Sheila McRae is working hard in her PhD Program and doing ACL related research as part of her PhD thesis through the Pan Am Clinic Foundation. We are also proud to announce that University of Manitoba
Professors Drs. Jason Peeler and Barbara Shay, from the Department of Human Anatomy and Cell Science and the Department of Medical Rehabilitation, respectively, have joined the research team at Pan Am Clinic. Dr. Peeler has been collaborating with the research team on several projects over the last couple of years and Dr. Shay has just recently moved her Vicon® Motion Analysis System from Health Sciences Centre to the David and Ruth Asper Research Centre. Although both Jason and Barb are always extremely busy as professors at the University of Manitoba, we are fortunate and grateful to have their knowledge, expertise and experience on-site as their schedule permits. We look forward to collaborating with Jason and Barb on several research projects in the near future.

On May 22nd and 23rd the Pan Am Clinic Foundation partnered with Linvatec to host the first “Elbow Scope and Reconstruction Course” in Canada. Guest Faculty included Dr. David Leswick (University of Saskatchewan), Dr. Kenneth Faber (University of Western Ontario) and Dr. William Regan (University of British Columbia). The course was a huge success and we look forward to hosting more events in the future since these courses promote skill development, evidence-based medicine and interaction between local residents, surgeons, staff members and highly skilled professionals from around the country.

The David and Ruth Asper Research Centre at the Pan Am Clinic continues to expand and now includes a biomechanics research centre and a surgical skills centre. Although equipment acquisition and upgrades will be an ongoing process, the biomechanics centre includes a Vicon® Motion Analysis system, 2 AMTI® force platforms, a Biodex® dynamometer (strength testing machine), and an Alter-G® anti-gravity treadmill, the first in Canada. The surgical skills centre houses a ToLTech® Diagnostic Knee Arthroscopy Simulator, the first in the world, and three arthroscopic skills stations for training on cadaveric specimens. Our state-of-the-art research and surgical training centre allows researchers, physicians and surgeons to stay on the forefront of Orthopaedic sports medicine and continue to enhance patient outcomes and quality of life.
Over the past year the staff has been busy preparing grant applications and manuscripts for publication. Recently completed studies include: (1) Reliability of tunnel angle in ACL reconstruction: Free hand method versus mechanical guide technique, (2) Prospective randomized trial of ipsilateral vs. contralateral hamstring graft in ACL reconstruction, (3) Arthroscopic rotator cuff repair with and without arthroscopic acromioplasty in the treatment of full-thickness rotator cuff tears, (4) Relationship between self-reported shoulder function/quality of life and co morbidities in patients awaiting rotator cuff repair surgery, (5) Intrinsic stresses on bone and cartilage in normal and ACL reconstructed knees before and after a half-marathon: An MRI analysis and, (6) Evaluation of the use of computer-simulated surgical skills program on the confidence and skills level of Orthopaedic surgery residents.

Recently, a grant application was submitted to the Manitoba Medical Services Foundation to investigate the effects of injury to surgery time on the incidence of secondary pathology in ACL reconstruction. We have also teamed up with five investigators from five different departments at the University of Manitoba and submitted a Letter of Intent to the Canadian Institutes of Health Research to develop a research project that would look at neuromuscular dysfunction in rotator cuff disease and potential pharmacological treatments that could stimulate muscle growth. The research team is excited and motivated to continue to progress to the forefront of Orthopaedic sports medicine research with the ultimate goal of improving patient outcomes and quality of life.

Throughout the year we have been working on improved partnerships in research. It has been emphasized to us that the future will be in collaborative research with the Concordia Arthroplasty Group and the Health Sciences Trauma and Spine Group. Our RadioStereometric Analysis (RSA) research in total shoulder Arthroplasty is one such example of how collaboration between Concordia and Pan Am can result in a major first-class research project. Fundraising for the Foundation continues to be a positive but will be an ever present challenge in the future, particularly with the restrictions on involvement with Industry that we see coming around the corner. However we have a very strong Foundation Board with many ideas on how to tackle these challenges and move forward into the future.
Grants

- MacDonald P. Changes in Muscle Morphology Resulting From ACL Reconstruction: Impact on Strength and Function Alexander Gibson Chair Fund April 2009 – April 2010;
- MacDonald P. Evaluation of Heart Rate, Gait Pattern, and Muscle Recruitment Response to different Speeds and Loads on a Weight Supported Treadmill in Healthy Individuals. Alexander Gibson Chair Fund April 2009 – April 2010
- MacDonald P. Evaluation of the Use of Computer-Simulated Surgical Skills Programs on the Confidence and Skill Level of Orthopaedic Surgery Residents. Directed Educational Efficacy Grant from the Arthroscopy Association of North America April 2009 – April 2010
- Dubberley J, MacDonald PB. Arthroscopic Skills Training Centre at the Pan Am Clinic
- Winnipeg Foundation March 1, 2007 – March 1, 2009

Publications – Book Chapters and Review Articles

- Macarenhas R, McRae S, MacDonald PB. Semitendinosus Allograft Reconstruction of Chronic Biceps Femoris Rupture at the Knee (Online) (Peer Review Publication) The Journal of Knee Surgery Volume 22 Number 1 March 31, 2009
- MacDonald P. Massive Rotator Cuff Tears Non-operative Treatment COA BULLETIN # 84 Spring 2009 pp 22-23

Publications – Peer Reviewed Journal Articles

- Macarenhas R, McRae S, MacDonald PB. Semitendinosus Allograft Reconstruction of Chronic Biceps Femoris Rupture at the Knee (Online) (Peer Review Publication) The Journal of Knee Surgery Volume 22 Number 1 March 31, 2009
- MacDonald P. Massive Rotator Cuff Tears Non-operative Treatment COA BULLETIN # 84 Spring 2009 pp 22-23

Presentations

- MacDonald P, Management of Knee Dislocations Ontario Orthopaedic Association Meeting, Toronto, ON November 7–8, 2008
• MacDonald P, Rotator Cuff Disease and Techniques of Arthroscopic Cuff Repair. Ontario Orthopaedic Association Meeting, Toronto, ON November 7–8, 2008
• MacDonald P, Managing Bone Defects in Shoulder Instability. Innovative Arthroscopy Meeting, Clearwater Beach, FL December 6–8, 2008
• MacDonald P, Knee Discussion and Lab Leader. Innovative Arthroscopy Meeting, Clearwater Beach, FL December 6–8, 2008
• MacDonald P, Management Bone Defects in Shoulder Instability. Orthopaedic Grand Rounds, Department of Surgery, Emory University, Atlanta, GA December 9, 2008
• MacDonald P, Evidence Based Medicine: Managing Knee Ligament Injuries. Symposia Faculty. 7th Biennial ISAKOS Congress, Osaka, Japan April 8, 2009
• MacDonald P, A Randomized Trial of Bankart Reconstruction With and Without ETAC Hawkins Society Meeting, Hilton Head, SC May 13–16, 2009
• MacDonald P, Posterolateral Knee Injuries. 16th Annual Red River Valley Sports Medicine Symposium, Moorhead, ND June 5, 2009
• MacDonald P, Meniscal Repair and Chondral Injuries. 16th Annual Red River Valley Sports Medicine Symposium, Moorhead, ND June 5, 2009
• MacDonald P, The ACL Injured Patient: Controversies and Dilemmas. ICL Participant. 64th Canadian Orthopaedic Association Annual Meeting, Whistler, BC July 3–6, 2009
• MacDonald P, A Survey Study Regarding the Natural History and Treatment of Anterior Cruciate Ligament Injury Among Members of the Canadian Orthopaedic Association. 64th Canadian Orthopaedic Association Annual Meeting, Whistler, BC July 3–6, 2009
• MacDonald P, PCL Double Bundle Transtibial, Cadaver Lab Session. Knee Dislocation Study Group Meeting, Rochester, MN September 26–27, 2009
The Paediatric Orthopaedic surgery Service is based at the Health Sciences Centre Children’s Hospital, Winnipeg.

We provide expert care for a wide range of musculoskeletal disorders affecting children from the new born to 16 years of age. These include congenital, acquired and traumatic musculoskeletal conditions. The service is led by a team of dedicated Paediatric Orthopaedic surgeons, which continues to expand.

As a section we have a particular interest in limb deformity correction, clubfoot treatment, and developmental dysplasia of the hip (DDH); in Manitoba the incidence of DDH is among the highest in the world. Additionally, the treatment of children with neuromuscular conditions takes place at our rehabilitation hospital.

Dr. Paul Jellicoe, MD BSc MBchB FRCS (TR and Orthopaedics) LLM Assistant Professor

Dr. Jack McPherson, MD FRCSC Program Director Orthopaedic Residency Training Program Assistant Professor
Our catchment area covers the whole of Manitoba as well as northwestern Ontario and Nunavut, a population of approximately 1.2 million. Being the only Paediatric centre to cover this diverse area, we are uniquely placed to study rare and interesting conditions, such as multiple hereditary exostosis and rare metabolic conditions. Our position also allows us to study trends in children’s trauma and raise awareness of, and effect change in, injury prevention.

Our particular geography also influences our significant research activity, led by enthusiastic personnel, and as a section we have published many articles on topics such as Paediatric trauma and child injury prevention.

As a section we are committed to, and enthusiastic about, teaching. Residents attend weekly dedicated teaching sessions led by one of the staff surgeons, during which we aim to cover key aspects of Paediatric Orthopaedics and trauma. This local teaching complements the core postgraduate Orthopaedic teaching, and of course we offer focused exam practice.

The future for the section of Paediatric Orthopaedics is exciting. We have developed a novel approach for the treatment of shoulder deformities associated with brachial plexus birth palsy; early results of our glenoid osteotomy are encouraging and show marked improvement in the shape and function of the shoulder when compared to other modalities of treatment. In addition, we hope to establish a clubfoot clinic, to which patients may be referred directly, in order to receive all their treatment and advice from one source.

Dr. G. Brian Black, MD FRCSC FACS
Professor

Dr. Susan Thompson, MD FRCSC
Assistant Professor

Support Staff:
Lynne Ferris, Administrative Assistant
Victoria Brown, Surgical Office Assistant
Jocelyn Malapit, Surgical Office Assistant
Publications – Peer Reviewed Journal Articles


Publications – Book Chapters and Review Articles


Presentations


Diabetic Foot Service

Diabetic Foot is possibly the most multi-disciplinary sub-specialty in Medicine. We provide care for patients with simple to complex conditions in the foot, not being diabetes mellitus exclusive in the attention in our clinics, because ulcers and Charcot Foot is provoked by other conditions that cause loss of protective sensation in the foot.

Patients benefit from this approach to care as they are able to receive simultaneous care from associated Specialties such as Infectious Diseases, Vascular Surgery and Plastic Surgery, as well as a dedicated team of skilled nurses, Ortho Cast Technicians, Pedorthists and the Rehabilitation Engineering Department. All form an essential component in the treatment of the Diabetic Foot as healing and Ulcer is not the same as keeping an ulcer healed.

In 2009 we performed 622 procedures, including minor and major debridements (infected ulcers, osteomyelitis), toe amputations, ingrown nail surgeries, etc. They were carried out in the main OR, outpatient OR, in the clinics, cast room and at the bedside in the wards. This nomadic approach to service delivery, at the place where it is necessary, allows us to act rapidly, thus saving limbs. This of course is our objective and ultimate goal.

Under the programs supervision 450+ Total Contact Casts (TCCs) are applied in any given year. The results reaffirm that the TCC continues to be the gold standard device for “offloading” in order to treat complication related to Diabetic Foot such as Ulcers and Charcot Foot.

Dr. Mario Dascal, MD
Assistant Professor

Clinical:
Jean Simpson, RN

Support Staff:
Lois Fraser, Surgical Office Assistant
The Diabetic Foot team attended several international conferences including “The Diabetic Global Conference 2009” in Los Angeles and “The Diabetic Limb Salvage 2009” that take place in Washington, DC.

In addition, our research is focused studies in collaboration with our associated specialties. Specifically, we are currently interested in exploring upper and lower complications in diabetic patients on dialysis, diabetic nerve damage, and investigating the relation between Diabetic foot and Depression.

In the future we plan to continue our effort in expanding the care and resources available to our Diabetic Foot patients. Increased effort will be directed in the education of the health community so that Charcot Foot might be detected at an earlier stage, thus avoiding the severe deformities that we see daily in our clinics.

Always remember that if you save a limb, you make a friend for life.

**Publications**

- Embil J, Dascal M. “Upper Extremity Complications in Patients with Chronic Renal Failure Receiving Hemodialysis.”

**Presentations**

- Dascal M; “Diabetic Foot Ulcers, the beginning of the end”. XXXV Argentine Conference of Orthopaedic and Traumatology, December 2008.
It is difficult to be certain when the Orthopaedic residency program began at the University of Manitoba. The earliest recorded University Head of Orthopaedic Surgery was Dr. H.P.H. Galloway (1907–1917). He was followed by Dr. Alexander Gibson of Edinburgh (1918–1956) who together with Drs. Boyd (Pathology) and Grant (Anatomy) helped establish the medical school’s preeminence in Western Canada. Gibson was probably the first academic Orthopaedic surgeon at the University publishing numerous papers, and today, an annual lecture is given in his name.

Gibson was followed in turn by Dr. G.H. Ryan and F.R. Tucker who further developed a more formal training program for Orthopaedic residents. An annual trophy is presented in Dr. Tucker’s name for the best Resident Research paper. Subsequent Orthopaedic chairs have been Dr. F.H. Gunston (1974–1976), Dr. C. Hollenberg (1976–1977, acting), Dr. R.M. Letts (1977–1989), Dr. G.J. Johnson (1989–1990, acting), Dr. W. Rennie (1990–2007), Dr. M.G. Goytan (2007, acting) and Dr. P. MacDonald (2008–present). All in turn have continued to support, develop, and enhance the education programs available.
The Education Program has steadily grown over the years to its present state which includes 18 Faculty, 18 Residents, and up to 4 Fellows at any given time during the year. In addition the Program also participates in the education of undergraduate medical students, Physician Assistants, and Nurse Practitioners in the form of both didactic lectures and clinical rotations. At present two to three new residents are selected annually through the Canadian Resident Matching Service (CaRMS) matching process. Training occurs in the Health Sciences Centre Adult and Children’s Hospitals, the Pan Am Clinic, the Concordia Hospital, and the Concordia Hip and Knee Institute.

Residents practice their technique as part of the Elbow Scope and Reconstruction Day

Program Coordinator:
Donna Shepard

Research Coordinator:
Jeff Leiter, PhD
The past academic year has seen many successes to the program.

The Section of Orthopaedic Surgery would like to thank Dr. Michael G. Johnson who stepped down from his position as Program Director on June 30, 2009. The residents certainly appreciate Dr. Johnson’s dedication, determination and the support he provided during his tenure as Program Director.

The Section would like to welcome the new Program Director, Dr. Jack McPherson, who comes to the Residency Training program with many new and innovative ideas towards teaching and learning. Dr. McPherson, who is a Paediatric Orthopaedic Surgeon, began his two-year appointment on July 1, 2009.

The Section is pleased to welcome three new residents who were successful in the 2009 CaRMS Match. Dr. David Ames and Dr. Danny Gillis, graduates of the University of Manitoba and Dr. Mohammad Zarrabian a graduate of Queen’s University. All three will bring different experiences and perspectives to the program. We welcome all of the new residents and look forward to their unique contributions in the next five years.

The Royal College Examinations held this year were successfully completed by Dr. Moustfha AlShrif, who is currently completing a one year fellowship in Sports Medicine and Upper Extremity at the Pan Am Clinic; Dr. Susan Deonarain who will completing a Paediatric Orthopaedic fellowship in California and Dr. Tod Clark who is completing a Hand Fellowship at the Mayo Clinic in Rochester, Minnesota. We wish all of the graduates every success in their careers as Orthopaedic Surgeons.

The residency program was strengthened by the addition of several new personnel, Dr. Jason Old and Dr. Greg Stranges, both graduates of our own residency program have joined the Section as part of the Sports Dr. P. Jellicoe discusses a case with residents
Medicine and Upper Extremity Team. These surgeons have already made an impact on teaching in the program and we look forward to their contributions in the future. There have also been several changes to the curriculum implemented for those residents currently in Years 1 and 2. The changes see Year 2 residents completing rotations in Sports Medicine rather than Spine Orthopaedics. Spine rotations will occur in Year 3 of the new curriculum. The changes also note the addition of an Internal Elective where residents in Year 4 who feel that they may require further study in a certain area or may want to do additional rotations in a certain area of orthopaedics can complete a one month internal elective at the University of Manitoba.

The University of Manitoba Joint Replacement Group at Concordia Hospital opened their new state of the art facility, the Concordia Hip and Knee Institute in June, 2009. This facility includes a large implant retrieval lab, simulation lab both of which will add to the Orthopaedic educational opportunities for our residents.

Resident research and academic activity has increased considerably over the past year. One afternoon per week is dedicated to resident research activities and includes the following: a journal club focused on evidence-based medicine, statistics sessions, reference manager tutorials and hands-on laboratory sessions on how to design, conduct and analyze research projects.

The second annual Resident Academic Day was held on Wednesday, October 7, 2009. Dr. Richard Buckley from the University of Calgary was the visiting adjudicator and speaker and educated us all in the areas of “Preoperative Planning” and “Navicular and Cuboid Fractures.” The Section would like to congratulate Dr. Jamie Rusen for winning first prize for his presentation on “Simplifying the AO/OTA Classification for Pertrochanteric Fractures Based on 31A2 Group Commination” and Dr. Jesse Shantz, 2nd place for his presentation on “Confidence in the Operating Room.” The Section would like to congratulate Dr. Jeff Leiter and all of the residents who participated for an outstanding job on very interesting research.

At the Academic Day on October 7, 2009 the residents awarded Dr. Laurie Barron with the honor of being “Educator of the Year – 2008–2009” for the Section of Orthopaedic Surgery. Honorable Mention was also given to Dr. Paul Jellicoe and Dr. Ted Tufescu. Congratulations to each of these surgeons who have contributed to the well-balanced education of the Orthopaedic Surgery Residency Training Program.

While the residency program continues to face new challenges, we are fortunate to have a generally harmonious group of residents who seem to work well together. We look forward to the future.

The Residents would like to take this opportunity to thank all of the surgeons within the program for their continued dedication to their education and support for the residency program over the past year.
Resident Research Day – October 7, 2009

As an Orthopaedic Trauma Surgeon in one of Canada’s busiest Trauma units, Dr. Buckley has over 16 years of providing care to Trauma patients. He was appointed Head of the Orthopaedic Trauma Unit at the University of Calgary in June 2005. Over the last 15 years he has served as Program Director of the Orthopaedic Residency training Program and has been involved in multiple committees within the University of Calgary.

Dr. Buckley has over 30 peer reviewed publications, with more than 200 podium presentations regarding research and education topics. He presently sits on the Board of Directors of the Orthopaedic Trauma Association and is Head of the membership committee of the Canadian Orthopaedic Association. Dr. Buckley is presently involved as Editor of three textbooks on Orthopaedic Trauma, translated in multiple languages with international readership. He is active with the Canadian Orthopaedic Trauma Society and the Orthopaedic Trauma Association of North America. He has traveled nationally and internationally, talking on foot fractures which is his area of expertise.

Dr Buckley made two presentations at the Resident research day: “Navicular and Cuboid Fractures” and “Preoperative Planning.”

Presentations – 2009

• Dr. Jon Marsh – Walking on the Ward: A Study of Orthopaedic Residents’ Physical Activity Levels

• Dr. Jesse Shantz (Y4) – A Retrospective Study of the Characteristics and Outcomes of Patients Treated for Periprosthetic Fracture After Total Hip Arthroplasty Of Infected Total Hip/Total Knee Replacement
• Dr. Heather Barske (Y5) – Predictors of Success Following 2-Stage Revision

• Dr. Danny Gillis (Y1) – The Efficacy and Cost-Effectiveness of Preoperative And Postoperative Cryotherapy in Proximal Tibia Fractures

• Dr. Randy Mascarenhas (Y2) – Transphyseal Anterior Cruciate Ligament Reconstruction in the Skeletally Immature Athlete

• Dr. James Vernon (Y4) – Development of an Orthopaedic Trauma Research Database

• Dr. Sacha Rehsia (Y5) – Relationship Between Self-Reported Shoulder Function/Quality of Life and Body-Mass Index In Patients Awaiting Rotator Cuff Repair Surgery

• Dr. Jesse Shantz (Y4) – Confidence in the Operating Room

• Dr. Taranjit Tung (Y3) – Above Versus Below Elbow Supination Splints Following Distal Radius Fracture. A Prospective Randomized Controlled Trial

• Dr. Al Walid Hamam (Y3) – A Biomechanics Study Comparing Different Calcaneus Plate Designs Using A Fracture Model

• Dr. Randy Mascarenhas (Y2) – Iliac Crest Allograft For Glenoid Deficiency In Recurrent Anterior Shoulder Instability in Athletes

• Brynn Sharkey (Medical Student) – Is Angulation on the Lateral Hip Radiograph Related to Fracture Instability? A Retrospective Radiographic Review of 31-A2 Intertrochanteric Fractures

• Dr. Bahram Groohi (Y2) – Correlation Between Weather Meteorological Factors and Orthopaedic Trauma Admission At Health Sciences Centre April 2007 – March 2008

• Dr. Christopher Lu (Y5) – Viral Osteoarthritis – Pilot Study

• Dr. David Ames (Y1) – The Patella as an Indicator of Distal Femoral Rotation

• Dr. Jamie Rusen (Y2) – Simplifying the AO/OTA Classification for Pertrochanteric Fractures Based on 31-A2 Group Communion

• Dr. M. Elkurbo (Y4) – Preliminary Result of Determining ACL Hamstring Graft Diameter from Anthropometric and Radiological Measurements

• Dr. A. Elyousfi (Y4) – Mycobacterium heckeshornense Lumbar Spondylodiskitis in a Patient with Rheumatoid Arthritis Receiving Etanercept Treatment
Resident Research Day Awards

1st Place Prize $2,000.00 – Awarded to Dr. Jamie Rusen for his Presentation on “Simplifying the AO/OTA Classification for Pertrochanteric Fractures Based on 31A2 Group Communion”

Jamie Rusen, MD – 2nd Year Resident
Section of Orthopaedic Surgery, University of Manitoba
Supervisor: Ted Tufescu, MD, FRCSC

Introduction

Intertrochanteric femur fractures represent an increasing cause of morbidity and mortality in an aging population. Numerous studies have looked at the reliability of existing classification systems namely the Evans/Jensen and the AO/OTA classifications schemes. Previous studies have found the AO classification to be more reliable than the Evans/Jensen system when using its main groups; however a notable decline has been observed when using subgroups.

There is no controversy about the first (31 A1) and the third (31 A3) AO groups. The first AO group (31 A1) includes only stable fractures while the third group (31 A3) includes only unstable fractures. The controversy lies within the middle group (31 A2) which includes both stable fractures appropriate for treatment with a DHS, and unstable fractures which necessitate intramedullary fixation. The key to simplifying the AO/OTA classification into stable and unstable groups lies in differentiating between subgroups within the 31 A2 group, thus holding important implication for guiding operative treatment.

Kreder et. al. successfully simplified the Garden classification from four groups to just two: stable and unstable. Using a similar radiographic study we hope to simplify the AO classification for pertrochanteric fractures, from three groups with a total of nine subgroups to just two: stable and unstable.

Objective

To test a simplified method for classifying stable and unstable intertrochanteric fractures, and test inter and intra-observer reliability.

Method

Forty-five sets of antero-posterior and lateral radiographs of intertrochanteric femur fractures were selected and randomized (15 subgroup 31 A2.1, 15 subgroup 31 A2.2, and 15 subgroup 31 A2.3). Twelve reviewers (4 Orthopaedic Staff, 4 senior and 4 junior Orthopaedic Residents) were asked to classify the fractures according to the 31A2 AO subgroups. They were then provided with a teaching guide including a diagram and instructed that the presence of any comminution at the main fracture site, irrespective of the lesser trochanter, is equivalent to instability.
Fractures were once again classified, this time into two groups, non-comminuted or comminuted. Inter-observer agreement was quantified using kappa statistics as defined by Landis and Koch. Kappa scores represent the chance corrected level of agreement amongst observers. Data was recorded at an initial baseline assessment, and will be repeated six weeks later to assess for intra-observer reliability.

**Results**

Twelve reviewers of different levels of training analyzed 45 sets of anteroposterior radiographs. The level of agreement amongst all observers within the 31A2 subgroup of the AO/OTA classification was found to be fair (kappa of .27). Using a simplified classification system based on fracture site comminution, reliability across all observers improved to moderate (kappa .42). Stratifying the data by level of training, junior residents improved from fair to moderate (kappa of .30 to .52), while senior residents and attending surgeons remained at fair reliability (kappa of .20 to .38 and .34 to .38 respectively).

**Conclusions**

Simplifying the AO/OTA classification of pertrochanteric fractures based on fracture site comminution did increase reliability from fair to moderate when looking at all groups as a whole. It was found however, that an increasing level of experience was inversely proportional to observed reliability, with junior residents improving the most and attending surgeons the least. We feel these results are clinically significant as it demonstrates the ability of junior residents to learn a new method of fracture classification, while highlighting the need for a better method of educating experienced surgeons in classifying these fractures. Further studies that include a greater number of observers, observers of a different clinical background (radiologists), and a more explicit definition of fracture instability may help to increase classification reliability across all groups. This will allow for more accurate implant selection when treating these injuries. A second time point will be repeated with a better focus on study group education in order to more accurately assess the inter and intra-observer reliability of our study group.
Background
The development of confidence in the operating room is a major goal of surgical training. Confidence in surgery involves trusting information, intuition and experience. The measurement of confidence is difficult owing to the sequential acquisition of information and experience. The following study examines the trends in confidence in residents participating in cadaveric arthroscopic courses.

Methods
In 2007 and 2008 all residents participating in annual shoulder or knee arthroscopic courses at the University of Manitoba returned pre-course and post-course questionnaires recording demographic data and previous arthroscopic exposure. Participants had access to fresh-frozen cadaver specimens and arthroscopic instruments for 5 hours after didactic lectures. Each participant rated perceived confidence and skill on a 5-point Likert scale. Paired data were analyzed using the Wilcoxon signed rank sum test.

Results
Residents showed a significant increase in self-perceived confidence in the performance of meniscal repair, ACL reconstruction and labral repair and subacromial decompression directly after an arthroscopy course (p≤0.01). Perceived skill in arthroscopic labral repair and subacromial decompression was significantly increased after the arthroscopic course (p≤0.01). There was a significant difference in the mean increase in confidence between arthroscopy-naïve and arthroscopy-experienced participants after training in ACL reconstruction and meniscus repair (p<0.05). A similar difference in naïve and experienced participants was not noted after a arthroscopic labral repair and subacromial decompression course. There was no difference in the perceived improvement in skills and confidence gained after an arthroscopic skills course.

Conclusions
Naïve residents gained more self-perceived confidence than experienced residents following an arthroscopic skills course. Residents appear to consider skill and confidence as similar constructs. Future courses should consider the separation of naïve and experienced residents to focus on improving the self-perceived confidence of experienced residents.
Shaun Beach, B Comm (Hons)
Manager Physician Services – Orthopaedics and Yearbook Editor

For further information:

University of Manitoba:
www.umanitoba.ca/faculties/medicine/units/surgery

Pan Am Clinic: www.panamclinic.org

Health Sciences Centre: www.hsc.mb.ca

Concordia Hip and Knee Institute:
www.concordiahospital.mb.ca/hipknee/jointVenture.html

Questions or comments please contact Shaun at (204) 787-2941 or email: sbeach@hsc.mb.ca
Profile of Dr. Alexander Gibson (1883–1956)
MA, MB, ChB, FRCS(Eng), FRSE, FACS, FRCS(C)

Dr. Alexander Gibson was born in Edinburgh, Scotland in 1883; his contribution to the field of Orthopaedics at the time was of great significance and in many cases lasting. Dr. Gibson received what could be described as a classical education. At the University of Edinburgh he established a remarkable record: he was the first student in the history of the University to earn all scholarships available to him during his courses and in 1908, he graduated M.B., Ch.B., with first-class honours. These high standards of scholarship were maintained throughout his whole life.

Having obtained a F.R.C.S. (England) in 1913, he came to the University of Manitoba as Professor of Anatomy, a position he held until 1920. Following this period he began his career in Orthopaedic Surgery and was associated for several years with the late H.P.H. Galloway. Later as an Associate Professor of Surgery, he was responsible for Orthopaedic teaching in the University of Manitoba. His remarkable lectures on applies anatomy made a distinct contribution in bridging the basic sciences and clinical field.

His hospital appointments included: Orthopaedic Surgeon, Winnipeg General Hospital; Director of the Department of Orthopaedic Surgery, Deer Lodge Hospital, Veterans’ Affairs: and Consultant to the Sanatorium Board of Manitoba.

During World War I, he was active as a Surgeon in the Royal Army Medical Corps in India and Egypt, and World War II found him again in service as an Orthopaedic Surgeon in charge of Hermeirs Red Cross Hospital in Scotland.

Many honors were bestowed upon Dr. Gibson, the chief of which were: Fellowship in the Royal Society of Edinburgh (1917); Presidency of the Canadian Orthopaedic Association (1949–1950) (original member); Lectureship in Surgery at the Royal College of Physicians and Surgeons of Canada (1954); Charter Member and President of the Winnipeg Medico-Legal Society when the Society was formed; Fellowship in the American College of Surgeons and later Senior Membership in The American Academy of Orthopaedic Surgeons; Member of the American Orthopaedic Association; Member of the Scientific Club of Winnipeg (1914–1956); and Life Member of the Winnipeg Medical Society.

Before permitting publication of any material, he applied a ridged formula: “No one has any right to publish unless he has something to say and has done his best to say it aright.”
Dr. Gibson’s 77 publications, the last presented on the evening before his death, exemplify his resolve. These “presented uncommon clarity of mind and lucidity of language which enabled him to make the complicated simple and chaotic orderly.”

A number of his publications were of lasting significance. He was the first to demonstrate that menisci of the knee regenerate following operative excision. The “fish-tail graft” introduced the principal of an interlocking graft in spine fusion. Probably his most significant contribution was the “posterolateral approach to the hip joint,” which became widely used by Orthopaedic Surgeons by his death in 1956. While he preferred to call it a “modified Kocher incision,” it was original in concept.

As a teacher and counselor of younger men he was at his best and no problem was too great or too trivial for his close attention. In all these activities he gave ready and understanding support. The total impression of his personality was dignity, courtesy, modesty, and integrity, and above all his devotion to his subject and to the many students who came under his authority during his lifetime.


The Gibson Orthopaedic Fund

Upon Dr Alexander Gibson’s death, the Gibson Orthopaedic Fund was established as a result of donation bestowed upon the Section by his estate. To this day research and education activities within the Section continue to be assisted by his generous gift. The current Gibson Chair is Dr. Peter MacDonald.

History of the COA Seal

During the fifth Annual Meeting of the Canadian Orthopaedic Association (COA) at Devil’s Gap Lodge, Kenora, Ontario in June 1949, Dr. Alexander Gibson presented a design for the Crest and the Seal of the Association for which provision existed in the Act of Incorporation.

The design “emphasizes the nature of the specialty of Orthopaedic Surgery and the dual nationality, French and English, from which Canadians stem.”

This Seal received approval in 1950, the year that Dr. Gibson served as President of the Association.
