

THE MUSCULOSKELETAL CLERKSHIP: A PART OF THE COMPREHENSIVE SURGICAL CLERKSHIP

OBJECTIVE: To convey to the student appropriate knowledge, skills and attitudes for the recognition, diagnosis, investigation, and treatment of conditions affecting the musculoskeletal system

PHILOSOPHY: Most medical students at Washington University School of Medicine are not entering specialties that devote themselves to the treatment of diseases of the musculoskeletal system. It is noteworthy, though, that as many as one third of complaints directed towards primary caregivers and general internists are related to the musculoskeletal system: the actual volume of these complaints presented to primary care physicians, general internists and pediatricians is second only to complaints related to the cardiovascular system (and for pediatricians, presentations related to infectious diseases). Cardiovascular physiology, pathology and medicine are covered widely in the Washington University undergraduate medical curriculum, and pediatric infectious diseases (including microbiology, therapeutics, pathology and general pediatrics) are covered only slightly less.

Musculoskeletal signs and symptoms are encountered commonly in emergency medicine, trauma surgery, internal medicine, oncology, neurology, pediatrics, endocrinology as well as many other surgical and medical specialties. Since our students who enter post-graduate training in these subspecialties as well as in general primary care will be required to evaluate, diagnose and treat these conditions, it is important for our undergraduate curriculum to have these topics addressed in an organized and consistent way. It is for this reason that we developed a comprehensive integrated exposure to musculoskeletal medicine during the students' time as a WUMS3 Surgical Clerk. The third-year musculoskeletal one-month teaching and learning block, to be contained within the comprehensive surgical clerkship under the direction and support of Jackie Fleming, will be a key component of the integrated third-year curriculum. However, students who do not wish to participate in this musculoskeletal program may select from one of the clerkship's standard 4-week specialty rotations in either Plastic Surgery or Neurosurgery.

The content to be covered in the musculoskeletal curriculum, both from a general point of view as well as specific topics and sub-topics to be covered, has been addressed in a manuscript titled: Objectives of Undergraduate Medical Education in Musculoskeletal Surgery and Medicine (Boyer MI, J Bone Joint Surg (Am) 2005; 87(3), 684 -7), that summarized the results of a consensus conference held in the fall of 2003 to determine the objectives of musculoskeletal learning at the undergraduate level. These were then summarized further by the AAMC in an Objectives Project report released in the fall of 2005.

In order to accomplish these goals, there will be a balance between clinical, operative, emergency room and didactic (lecture and small group) experiences. Didactic sessions will be in several formats: lectures, physical examination demonstrations and small group discussions. Only full time Washington University School of Medicine Department of Orthopedic Surgery attending staff will deliver formal lectures to the students. Lecturers will be from drawn from the following specialties: Orthopaedic Surgery, Sports Medicine and Physical Medicine and Rehabilitation (Physiatry) for both balance and content expertise.

EVALUATION: As a criterion for passing, all students will be required to complete the educational portfolios specific to their two assigned MSK rotations. These rotation-specific portfolios will outline the required patient complaints to be encountered, as well as the required clinical tasks that must be accomplished during the MSK rotations.

In addition to the portfolio requirements, there will be three clinical evaluation components which will each contribute one third to the final MSK grade: One third of the MSK grade will be derived from a formalized evaluation of the student's ability to examine the musculoskeletal system (this will be done by Dr. Boyer). The remaining two thirds will be obtained through standard subjective evaluation completed by the attending mentor from each 2-week block rotation. (Note: a documented LACK OF PROFESSIONALISM can be grounds for failure. Opinions from others with whom the students have worked can be sought by the attending and can influence the outcome of the subjective evaluation.)

The three evaluation components will each result in a numerical score of 0-3. Scores totaling 8-9 demonstrate Honors performance, while scores totaling 6-7 indicate High Pass and scores totaling 3-5 are

Pass. Any total scores less than 3 will be considered Failure. In turn, the final MSK rotation grade will also result in a numerical score of 0-3 (3=Honors, 2=High Pass, 1=Pass, 0=Fail), and will be factored into the final surgery clerkship grading scheme.

LECTURES:

(scheduled monthly)

- 1) Spinal Disorders: Jacob Buchowski
- 2) Musculoskeletal Emergencies: Martin Boyer
- 3) Common Fractures: Martin Boyer
- 4) Bone and Mineral Physiology: Gary Miller
- 5) Electrophysiology: John Metzler/Devayani Hunt
- 6) Pediatric and Adolescent Sports Medicine: Mark Halstead
- 7) Adult Sports Injuries: Mark Halstead
- 8) Cancer: Doug McDonald

(scheduled as part of the 12-week surgery clerkship Wed/Thurs core series)

- 9) Osteoarthritis and Septic Arthritis: Gary Miller

Lectures 1 to 8 will be held monthly, whereas lecture 9 would be held as part of the comprehensive surgical clerkship's standard set of lectures. Lectures 1-8 will be held at the Nathaniel Allison Conference Room in the Department of Orthopaedic Surgery, Suite 11300 in the West Pavilion at Barnes-Jewish Hospital. Scheduling of lectures 1-8 will be dependent on the individual instructor's schedule and the students' core tutorial sessions; these lectures may fall at different times during the rotation as well as from rotation-to-rotation. Lecture 9 will be held in the 9 Wohl Hospital Auditorium along with the core surgery clerkship series. Although the core lectures are routinely held on Wed/Thur afternoons, the order in which topics are presented will differ from clerkship-to-clerkship.

CLINICAL ROTATION: The clinical experience will be one month in duration, during the comprehensive surgical clerkship for all Washington University Medical Students during either the first, second or third months of the 12-week clerkship. The one month block is divided into two two-week sessions wherein the students would spend time with staff from the following specialties: orthopaedic surgery, rheumatology, physical medicine and rehabilitation, sports medicine and bone and mineral physiology.

The experience can be combined inpatient and outpatient, clinic and operating room, emergent and non-emergent care as well as both surgical and non-surgical, based upon the student's own choosing. However, to ensure an appropriately balanced experience, students will be limited to specific rotation combinations from which to choose:

- Hand/Joint Reconstruction (2 weeks / 2 weeks)
- Shoulder & Elbow/Orthopedic Oncology (2 weeks / 2 weeks)
- Physical Medicine & Rehabilitation/Spine (2 weeks / 2 weeks)
- Pediatric Orthopedic Surgery/Sports Medicine or Sports Surgery (2 weeks / 2 weeks)
- VA Orthopedic Service/Rheumatology Bone & Mineral (2 weeks / 2 weeks)
- Trauma (4 weeks)

Note: Students who do not wish to participate in the combined MSK rotations will have the option to forego the MSK program altogether and select from one of the standard 4-week specialty rotations in either Plastic Surgery or Neurosurgery.

The following Washington University School of Medicine full-time attending staff mentors are eligible to have students rotate with them during the rotation:

- 1) Martin Boyer (Hand)
- 2) Ryan Calfee (Hand)
- 2) Charles Goldfarb (Hand)
- 3) Matthew Matava (Sports Surgery)
- 4) Mark Halstead (Sports Medicine)
- 5) Heidi Prather and Devayani Hunt (Physical Medicine & Rehabilitation)

- 6) John Metzler and Adam LaBore (Physical Medicine & Rehabilitation)
- 7) Eric Gordon (Pediatric Orthopedic Surgery)
- 8) Gary Miller (VA Orthopedic Surgery Service)
- 9) Robert Brophy (Sports Surgery)
- 10) James Keeney (Joint Reconstruction)
- 11) Drs. Kahl, Diemer, Brasington (Rheumatology Bone & Mineral)
- 12) Jacob Buchowski (Spine)
- 13) Paul Santiago (Neurosurgery Spine)
- 14) Douglas McDonald (Orthopedic Oncology)
- 15) Leesa Galatz (Shoulder & Elbow)
- 16) Ryan Nunley (Adult Reconstructive Surgery)
- 17) Jay Keener (Shoulder & Elbow Surgery)
- 18) Drs. William Ricci, Gardner, McAndrew (Trauma).

Ideally, there should only be one student per attending staff in order to promote one-on-one teaching; however, exceptions can be made in the event of vacations, illness, conference travel etc. on the part of the attending staff.

All rotations will be assigned through the use of the Surgical Clerkship Electronic Preference Sheet. If certain rotations are unavailable because of attending conferences or vacations, this will be communicated to the students at the beginning of the musculoskeletal block.

In order that an orderly coverage of relevant information is conveyed to the student during each rotation, an outline of materials that are deemed critical by the course directors and the faculty mentor is given to both the student and the faculty mentor at the beginning of the rotation. Thus, both the student and the faculty mentor will be familiar with the expectations from the start. There will be central topics that will be required coverage for all: physical examination, diagnosis and treatment of emergencies, interpretation of x-ray films, as well as medical and non-surgical treatment modalities of commonly encountered orthopedic conditions. There will also be topics that are rotation-specific, such as cerebral palsy and myelomeningocele (for the pediatric rotations at Children's or Shriner's Hospitals) or acute knee ligament injuries (on the sports surgery or sports medicine services.) Mentors will, as part of their teaching responsibilities, be required to participate in regular discussions/instruction with their students. The culture that we will try to foster is one of mentorship and students' responsibility, rather than one of endless didactic lecturing and rote learning.

At the beginning of each one month block, Dr. Boyer and his Orthopedic secretary Kathy Jones (to whom the day-to-day rotation administration is entrusted) will meet with the group of students, and discuss the rotation specifics, transportation issues, on-call schedule and our expectations. NOTE: Attendings' subjective expectations of, and judgments regarding, the students in terms of presence and work-ethic in the clinic and the operating room, attitude, and professionalism will be taken into account when completing evaluations. The opinions of nurses, therapists, medical assistants, social workers and others directly involved in patient care will be sought actively, and will be taken into account when evaluations and grades are given.

STUDENTS THAT HAVE DISPLAYED A LACK OF PROFESSIONALISM WILL NOT BE ELIGIBLE FOR A PASSING GRADE IN THIS COURSE.

The final arbiter in these matters will be Dr. Boyer.

The learning of physical examination skills by the students is a critical part of the musculoskeletal block. Dr Boyer will meet weekly with the students to demonstrate physical examination of the: neck and spine, shoulder and elbow, hip and knee, and the hand and foot. The normal examination will be covered, and relevant common conditions and provocative tests will be covered as well.

MID ROTATION FEEDBACK: The student will meet with their supervising attending staff at the end of the second week in order that constructive feedback could be given regarding the student's performance and ability. This should be documented by the staff attending, and documentation sent to Jackie Fleming.

ON-CALL: To facilitate a comprehensive experience in musculoskeletal evaluation and treatment, students will be expected to take call during the one-month rotation regardless of rotation assignments. The call assignments will be made by Kathy Jones and students will be scheduled approximately 1 night per week, which would include 1 weekend call. However, it is understood that the frequency of call may vary according to other specific rotation obligations. All ACGME requirements governing on-call duties in post-graduate trainees and the 80-hour work week will apply to WUMS3 students on the Musculoskeletal block. Therefore, if a student is on-call on Tuesday or Wednesday night, they will need to leave promptly at 7am in order to return to the Hospital for required lectures later in the afternoon. Weekend call is twelve hours in duration only (either from 7am to 7pm, or, from 7pm to 7am).