IMAGING

SPECIAL INTEREST GROUP

Imaging Education Manual

As a new academic year gets underway, the Imaging Special Interest Group reminds faculty of a new resource, the new Imaging Educational Manual for Doctor of Physical Therapy Professional Degree Programs (Imaging Education Manual) to provide a rich set of resource information that will assist faculty in ongoing curriculum assessment and development in this content area. The Imaging Education Manual and additional resources can be accessed online at www.orthopt.org. Faculty responsible for teaching imaging content will likely find the evidence review and curriculum resource information useful in course development and other aspects of instruction. Information in the manual will also be useful to faculty members who may be called upon to provide testimony or opinion when regulatory or legislative imaging issues arise in your state. In addition, academic coordinators of clinical education may wish to share materials in the manual with clinical instructors to facilitate further student development of relevant skills during clinical internships.

As physical therapist practice evolves, including patient direct access, the ability to refer patients directly for diagnostic imaging could enhance efficiency and effectiveness of care delivery. Doing so is contingent upon doctors of physical therapy having the requisite knowledge and skills of appropriate patient referral for imaging. Published research describing physical therapist use of ultrasound imaging (USI) in patient management has been growing since the 1990s. The practicality of incorporating USI at the point-of-care has been greatly enhanced with improvement in ultrasound technology resulting in smaller machines, higher and improved resolution, and much lower equipment costs.

ARDMS Maintains the Registered Musculoskeletal Sonography Credential for Physical Therapists

The Registered Musculoskeletal Sonography (RMSK) credential was first offered in 2012 by the American Registry for Diagnostic Medical Sonography (ARDMS). Physical therapists have qualified to sit for the examination from the outset. In January 2015, the ARDMS announced it was creating a new credential, the Registered Musculoskeletal Sonographer (RMSKS). Physical therapists were no longer qualified to sit for the physician RMSK and were only eligible for the RMSKS credential. The Imaging Special Interest Group through the Orthopaedic Section and in coordination with APTA responded and asked the ARDMS to revisit their decision. Recently the ARDMS acknowledged the scope of practice of physical therapists better aligns with the physician RMSK credential and physical therapists will retain the RMSK and continue to qualify to sit for the RMSK. Additional information can be found at www.ardms.org/get-certified/RMSK/Pages/musculoskeletal-sonography.aspx.

Call for Imaging Submission

The Imaging SIG is soliciting submissions for publication in the imaging column of OPTP. Types of submissions can include:

- Case Report: A detailed description of the management of a unique, interesting, or teaching patient case involving imaging. Case reports should include: Background, Case Description including Imaging, Outcomes, and Discussion.
- Resident’s Case Problem: A report on the progress and logic associated with the use of imaging in differential diagnosis and/or patient management. Resident’s Case Problem should include: Background section, Diagnosis section which details the examination and evaluation process leading to the diagnosis and the rationale for that diagnosis, including a presentation of imaging studies. Interventions section used to treat the patient’s condition and the outcome of treatment; however, the focus of the resident’s case problem should be on the use of Imaging in the diagnostic process and patient management. The Discussion section offers a critical analysis of how the Imaging guided the management of the patient.
- Clinical Pearl: Clinical pearls are short papers of free standing, clinically relevant information based on experience or observation. They are helpful in dealing with clinical problems for which controlled data do not exist. Clinical Pearls should describe information pertaining to Imaging which help inform clinical practice.

Submissions should be sent to: Joel Fallano at jfallanopt@verizon.net

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Osgood-Schlatter (OS) is a common injury among preadolescents engaging in athletic activities. Due to repetitive stress of the quadriceps and traction forces can lead to apophysitis of the tibial tuberosity or avulsion of the tuberosity. Osgood-Schlatter is most often diagnosed with clinical exam and patient presentation; however, musculoskeletal ultrasound imaging has been shown useful in the diagnosis and management. The patient was a 13-year-old male who developed acute right anterior knee pain and swelling at the age of 7 after attempting to lift an adult from the ground. At the time of injury, he was seen by his primary care pediatrician (PCP) and diagnosed with a knee ligament sprain. He was advised to rest from activities for one month. After which time his pain improved, but persisted with running activities.

In 2010, four years after his initial injury, he began experiencing increased anterior knee and infrapatellar swelling with minimally strenuous recreational activity. He returned to his PCP and was referred to physical therapy. His symptoms did not improve with physical therapy, and his doctor advised he discontinue all recreational activities for two years.

In 2013, the patient presented to our outpatient rehabilitation department after reinjuring his knee while running. He was seen by a different pediatrician, diagnosed with OS, and again referred to physical therapy. On examination, he complained of right knee instability, anterior knee pain, and infrapatellar swelling after running. Significant quadriceps atrophy and weakness and poor hip and lumbopelvic motor control with functional activities were noted. He was unable to participate in recreational activities, had minimal tenderness on palpation of the tibial tuberosity, with no localized swelling. His knee was otherwise stable.

Musculoskeletal ultrasound examination was performed on initial evaluation because prior images were not available at the time of the patient’s visit. The examination revealed a bony ossicle in the inferior portion of the patellar tendon (Figure 1) just proximal to the tibial tuberosity. Additionally, cortical fragmentation of the tibial tuberosity at the insertion of the patellar tendon (Figure 2) was noted, consistent with OS. Dynamic ultrasound examination into knee flexion demonstrated compression of the bony ossicle into the anterior tibial cortex, reproducing the patient’s anterior knee pain at the point of contact. Sonographic images of a normal patellar tendon at the insertion onto the tibial tuberosity (Figure 3) demonstrates the hypo-echoic, fibrillar patellar tendon inserting onto the tibial tuberosity. Based on the sonographic findings, the patient was referred for an orthopaedic consult and for plain radiograph imaging. On plain lateral radiograph, a bony ossicle and malunion fracture of the secondary ossification center were seen (Figure 4), consistent with the findings on ultrasound. Open reduction...

Figure 1. Long axis sonogram of the right knee in approximately 30° knee flexion. Note the bony ossicle embedded in the patellar tendon (arrow), and its proximity to the proximal anterior tibial cortex.

Figure 2. Long axis sonogram of the right knee. Note significant cortical irregularity of the tibial tuberosity at the patellar tendon insertion consistent with Osgood-Schlatter.

Figure 3. Longitudinal image of normal patellar tendon (white arrows) and its insertion onto the tibial tuberosity.
internal fixation of the proximal tibial region with take down of the malunion and a local bone graft (from Gerdy’s tubercle) was performed. The bone graft was secured with two 4.5 mm screws and a washer in the tibial tubercle region creating the desired compression across the prior growth plate (Figure 5). Intraoperatively, it was decided not to excise the intra-tendinous bony ossicle for risk of tendon compromise.

The patient was lost to physical therapy follow-up postoperatively. This case demonstrates the importance of a thorough clinical examination and appropriate use of imaging within the scope of physical therapy for optimal patient outcomes.

Figure 4. Plain lateral radiograph of the right knee demonstrating bony ossicle (green arrow) and nonunion fracture across secondary ossification center (blue arrow).

Figure 5. Postoperative radiograph films demonstrating open reduction internal fixation with 2 screws at the tibial tuberosity region.

REFERENCES