

Open Digital Library of Pediatric Rheumatic Disease  
Use of images for teaching

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### INTRODUCTION

We have begun to combine image-based case studies with questions, both in multiple choice and fill in the blank formats. The questions are presented to a group of medical students and residents with the primary goal of stimulating an open discussion that allows participants to explore how they think about clinical problems. This month, two examples are presented that demonstrate the use of questions and images to facilitate discussions about differential diagnosis of children with arthralgia and difficulty walking.

These questions and images are presented in a PowerPoint© file. The file is stored in the author's folder maintained on the hospital's intranet. In this way, teaching can occur during rounds, while seated around any monitor with access to the intranet.

## FIGURE LEGENDS

Figure 1. A case of a child with normal physical examination and limping for 1 month is presented. Students and residents are asked what study they would next obtain, and why (in terms of differential diagnosis).

A 4 year old girl has been limping for the past month. She has low grade fevers, a normal PE (including joint examination). Lab values include ESR 70, hgb. 11.0, wbc 14,000 (60%poly 10% bands 20% lymph 10% mono), and platelet count 350,000. X-rays of the pelvis, hips, and lower extremities were normal. What are your next steps? Why?

Figure 2. Bone scan is an appropriate next step in a patient with persistent limp, elevated acute phase reactants and no focality on physical exam. If an abnormality is identified, an MRI can be helpful for delineating more specific anatomic information. The possibility of other causes of abnormal gait but with normal bone scans should be discussed with the students and residents (e.g., intrapelvic process such as malignancy or abscess). The teaching point is made that children with normal x-rays and physical examinations who have persisting limp merit additional imaging. This is especially true for patients with elevated acute phase reactants.

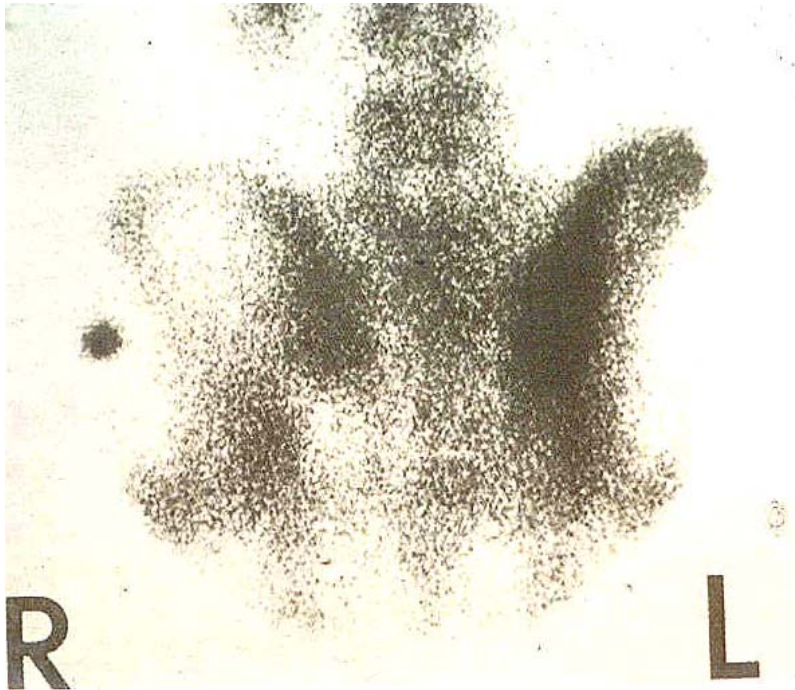


Figure 3. A child with limp and otherwise unremarkable physical exam is presented. The differential diagnosis is formulated by students and residents. Appropriate steps to address the differential are then discussed.

A 12 year old female collided with a team member during a soccer game. She immediately noted pain in the R thigh which resolved within an hour, and she participated in the remainder of the game. Physical examination, and x-rays of the hips and pelvis were normal. Over the next 3 months she developed intermittent limping. Physical exam revealed an antalgic gait. Except for a mild decrease in right hip rotation, the joint exam was entirely normal. Lab values include ESR 17, CRP 0.337, WBC 7,500 (63% poly, 24% lymphs, 7% mono). ANA, rheumatoid factor, and B27 screens were negative. What additional work-up should be pursued?

Figure 4. The x-ray of idiopathic chondrolysis is shown. The difference in right and left hip joint spaces, with the right showing significant narrowing, is pointed out to students and residents. Conditions associated with persistent hip pain (E.G., slipped capital femoral epiphysis, traumatic arthritis, spondyloarthropathy, Legg-Calve-Perthes in a younger child) are reviewed with participants. The teaching point is made that repeating plain films in a patient with hip pain is indicated when pain persists or abnormal gait develops.

