

**Abstract:**

Nontraumatic pediatric hip pain and related hip pathology have a broad differential and often present a diagnostic dilemma. The age of the child; history and physical examination; and, if needed, laboratory and imaging studies can guide diagnosis. This article reviews the common etiologies for hip complaints occurring in the absence of trauma in children. The clinical presentation, evaluation, and management will be discussed as well as relevant existing literature to assist the physician in distinguishing between hip pathologies.

**Keywords:**

non-traumatic hip pathology; pediatric hip; transient synovitis; toxic synovitis; hip effusion; hip imaging; osteoarticular infections; septic arthritis; osteomyelitis; Lyme arthritis; Legg-Calve-Perthes disease; slipped capital femoral epiphysis; limp

Division of Pediatric Emergency Medicine, Department of Pediatrics, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA.

Reprint requests and correspondence: Desiree Noel Wagner Neville, MD, Division of Pediatric Emergency Medicine, Department of Pediatrics, Children's Hospital of Pittsburgh of UPMC, 4401 Penn Avenue, AOB 2nd Floor, Suite 2400, Pittsburgh, PA 15224.

[desiree.neville@chp.edu](mailto:desiree.neville@chp.edu) (D.N.W. Neville), [zuckerbraunn@upmc.edu](mailto:zuckerbraunn@upmc.edu) (N. Zuckerbraun)

1522-8401

© 2016 Elsevier Inc. All rights reserved.

# Pediatric Nontraumatic Hip Pathology

**Desiree Noel Wagner Neville, MD,  
Noel Zuckerbraun, MD, MPH**

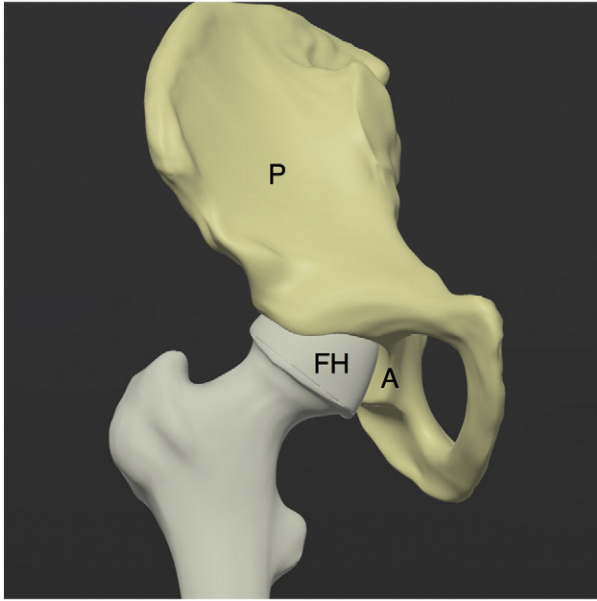
**T**he hip is a marvelously complex joint capable of movement in all planes while simultaneously supporting the entire weight of the body. The hip is a ball-and-socket synovial joint enclosed in a fibrous capsule. It is formed by the articulation between the femoral head, and the acetabulum of the pelvis (Figure 1).

While the hip is often injured, nontraumatic problems are common as well. These problems can present with significant distress to both the child and family, and the underlying disease can range from benign to quite serious. A complete history, thorough physical examination (often), imaging, and laboratory studies (sometimes), are the tools needed to differentiate among these disease processes.

Nontraumatic hip pathology may present as pain in the hip, thigh, or knee; altered gait; or refusal to bear weight. Eliciting the presence or absence of fever is important. Although nontraumatic hip pathology by definition does not result from an injury, at times, the patient or family may recall a recent, typically mild, trauma that is not significant enough to explain the clinical presentation.

## HIP EXAMINATION

A complete hip examination begins with observation of patient's resting position, which is a useful way to assess the involvement of the hip in any patient presenting with a lower extremity complaint. The patient with a hip effusion, hemarthrosis, or hip fracture will often present with the hip resting in flexion, abduction, and external rotation.<sup>1</sup> Assessment of the hip is difficult because hip effusions are often not clinically apparent, and the hip joint can be difficult to isolate. Palpation over bony prominences, the pelvis, hip joint space, and shaft of the femur



**Figure 1.** Hip joint anatomy: composed of the capital femoral epiphysis or femoral head (FH) within the acetabulum (A) of the pelvis (P). This ball-and-socket joint is surrounded by a fibrous capsule and contains synovial fluid.



**Figure 2.** Assessment of internal rotation of the hip. Shown is testing with the hip in flexion, adduction while internally rotating. The examiner is distracting the patient with an electronic device to make the child less fearful and increase the chances of a successful examination.

can be helpful to isolate areas of tenderness. Next, the clinician should evaluate the hip joint's passive and active range of motion. Internal rotation, external rotation, hip flexion, extension, abduction, and adduction should be assessed. An indicator of hip joint space disease is limitation of internal rotation (Figure 2). Internal rotation can also be tested with both of the patient's legs straight and knees extended; gentle internal rotation of the leg in this position may not elicit fear, which can skew the examination. The back should also be examined for tenderness and range of motion. Finally, both the willingness to bear weight and any gait abnormalities should be noted.

## IMAGING

### Radiographs

Radiographs are often the first imaging modality used to evaluate the hip. When obtaining hip radiographs, it is important to obtain a comparison view (full pelvis with view of both hips) and specifically, to always obtain both anterior-posterior (AP) and frog-leg views (Figure 3).

Radiographs are not always required. Of note, a study of 310 children with acute (<2 weeks) nontraumatic hip pain found that 1% of radiographs were positive in children younger than 9 years,

suggesting that there is limited utility of radiographs in young children with acute hip pain.<sup>2</sup>

### Ultrasound

The primary application of hip sonography in nontraumatic hip pathology is for detection of an effusion. An ultrasound cannot distinguish between sterile and pyogenic effusions. Radiology ultrasound has long been known to be superior to radiographs for the detection of hip effusions.<sup>3</sup> Although it is traditionally performed in the radiology department, the emergency provider can diagnose hip effusions with point-of-care ultrasound care ultrasound (POCUS).<sup>4,5</sup> It is rapid, is easily accessible, lacks ionizing radiation, and does not require sedation.

The following is a brief description of the POCUS technique for the hip. The leg should be positioned in slight abduction and external rotation. The linear (high frequency) transducer is placed parallel to the long axis of the femoral neck, which can be found just inferior to the inguinal ligament and lateral to the femoral vessels. The transducer is positioned with the indicator pointing superomedially on an imaginary line extending from the greater trochanter toward the umbilicus.<sup>6</sup> (Figure 4)

Download English Version:

<https://daneshyari.com/en/article/3235768>

Download Persian Version:

<https://daneshyari.com/article/3235768>

[Daneshyari.com](https://daneshyari.com)