American Academy of Pediatrics
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Ohio Chapter

Sports Shorts

GUIDELINES FOR PEDIATRICIANS

Hip and Pelvis Injuries

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Injuries to the hip/pelvis in young athletes can be cause of significant morbidity and lost time from sports. There are several such injuries which are unique to this population because of their open growth plates. While most growth plate injuries are seen in the pre-adolescent or early adolescent period, in the pelvis these injuries peak during mid to late adolescence because the pelvic growth plates (apophyses) form later and often do not completely close until the late teens.

There are two main types of apophyseal injuries in the pelvis- Apophysitis and Avulsion Fractures. Apophysitis is typically an overuse injury of insidious onset which may present like a muscle strain. Avulsion fractures, on the other hand, are often caused by an acute, traumatic event. Athletes may report feeling a pop while running or kicking, followed by significant pain and/or limp. The most frequent sites of apophyseal injury about the pelvis and their correlating muscular attachment are listed on page 26.

On exam, patients will have tenderness over the affected apophysis and have weakness with strength testing. X-rays should be taken to assess for avulsion. Athletes with apophysitis benefit from a brief period of rest from sport along with rehabilitation focused on muscle flexibility and strengthening. Avulsion fractures often require a period of non-weight bearing (days to weeks) to reduce pain and allow for healing before rehab. Very large or widely displaced fractures may require surgery.

Another hip injury unique to adolescents and pre-adolescents is a SCFE (Slipped Capital Femoral Epiphysis), which occurs when the femoral head is displaced relative to the femoral neck through the physis. SCFEs typically occur between the ages of 8-15, are more common in boys and African-Americans, and can be associated with obesity, rapid growth, hypothyroidism and growth hormone use. Pain may be described in the hip, groin, thigh or knee and kids often present with a limp and external rotation of the hip. If SCFE is identified on x-ray, patients should be made non-weight bearing immediately to prevent further slippage and sent to the ED or directly admitted to the orthopedic service for surgical intervention.

Muscle strains are common amongst all age groups and can be seen in the hip flexors, adductors (groin), quadriceps and hamstring. Adolescents are at particular risk for these injuries because rapid growth leads to muscle tightness, predisposing to muscle injury. If not treated properly, strains can become a lingering or reoccurring issue so most athletes will benefit from activity modification, rehabilitation and a step-wise return to activity.

Overuse injuries such as stress fractures can occur in this area as well, and may require prolonged healing time compared to stress fractures in other parts of the body. Stress fractures of the sacrum or pubic rami can take up to 9-12 months to heal, while tension-sided femoral neck stress fractures (superior aspect of femoral neck) require surgical invention. Hip/pelvis stress fractures are often not visible on x-ray, so MRI can be helpful in making the diagnosis.

Finally, femoral acetabular impingement (FAI) is increasingly being recognized as a source of hip pathology in the adolescent athlete. FAI can be 1 of 2 types: Cam deformity, characterized by prominence of the femoral head and neck, and Pincer impingement, caused by over-coverage of the femoral head by the acetabulum. Patients present with groin, hip or buttock pain worse with activities involving hip flexion or prolonged sitting. FAI may cause labral tears which can lead to mechanical symptoms like locking or catching. FIA may be apparent on x-ray, but MRI confirms the lesion. Initial treatment consists of rest and rehabilitation, with surgical intervention if symptoms persist.

This information is available on the Ohio Chapter, American Academy of Pediatrics' website at www.ohioaap.org

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Apophysis	Muscle Attachments
Anterior Superior Iliac Spine (ASIS)	Sartorius, Tensor Fascia Lata
Anterior Inferior Iliac Spine (AIIS)	Rectus Femoris (Quad)
Iliac Crest	Transverse Abdominal, Internal/External Obliques