Pelvis Avulsion Fracture

INTRODUCTION
Pelvis avulsion fractures are uncommon, but do occur. Excessive force by muscular contraction can pull off the bony attachment at the pelvis. The injury usually comes during demanding activities. Usually the fragment is minimally displaced. Treatment is generally with rest and symptomatic care with anti-inflammatory medications and heat/ice. Once pain improves, gentle mobilization and stretching tight muscles helps the recovery process, followed by a gradual return to activities.

BACKGROUND
There are several attachment sites on the pelvis for strong tendons which can get injured, aggravated, or avulsed (pulled off) from the pelvis or femur. The most common locations include the anterior superior iliac spine, the anterior inferior iliac spine, the ischial tuberosity, and the lesser trochanter. Aggravation or avulsion of these spots can occur with a forceful contraction of the muscles. On examination, localized tenderness and swelling is present, usually with pain on motion. X-rays may show displacement, but marked displacement is rare.

CLINICAL PRESENTATION AND DIAGNOSIS
Pain generally starts suddenly during a demanding activity or sport. Examination reveals tenderness to palpation at the musculotendinous insertion into bone. An apophyseal avulsion fracture is usually acute, and the displaced fragment may be bony or cartilaginous. The mechanism of injury is an excessive force from a strong or violent muscle contraction that occurs across an apophysis. The usual symptom of an apophyseal avulsion fracture is a sudden onset of pain, swelling, and weakness. Generally, there is no history of direct trauma. Radiographs will confirm the diagnosis, and comparison views of the contralateral side may be helpful.

TREATMENT
Most of these fractures are minimally displaced and are treated conservatively. Treatment progresses through several phases. Treatment starts with rest and protection to limit pain and muscle spasm. Rest, limited activity, and use of crutches are the primary means of reducing pain and promoting healing. Ice and pain medication are used as needed. The second phase of treatment focuses on gentle stretching to recover motion. Once acute pain has partially improved, it is beneficial to start with physical therapy to work on motion, flexibility, progressive strengthening, and a gradual return to activities. As pain improves, light activity is allowed, but
running and aggravating activities are still avoided. As pain improves, stretching and strengthening is added to the physical therapy program. Finally, sport specific drills and a gradual return to full activities is allowed. Premature return to sports before complete healing will result in re-injury.

In the longer term, continued participation with a focused flexibility and strengthening program are important for full recovery of normal usage and control.

For fractures that are displaced greater than 2 cm, surgical treatment may be appropriate. Most of these injuries are managed conservatively, and indications for surgical fixation are exceedingly rare.

EXPECTED OUTCOME AND COMPLICATIONS
Overall prognosis is good, but healing time may be slow. Returning to exercise or sports too early can lead to a recurrent injury and slower healing.

MORE INFORMATION
Further information can be obtained on the internet. Your local public library can help you explore these sources if you are interested. Two good sites for expert and peer reviewed information are the American Academy of Orthopedic Surgeons at www.aaos.org and the Pediatric Orthopedic Society of North America at www.orthokids.org.