LIAC CREST contusion (often referred to as a “hip pointer”) is the result of direct trauma to the iliac crest, which typically occurs during participation in a collision sport. Point tenderness, ecchymosis, and muscle spasm are commonly associated with the condition. An iliac crest contusion can be associated with subperiosteal hematoma and disability. Although painful, this injury generally resolves without complications if the athlete is protected from reinjury. This report presents a case of retroperitoneal hemorrhage that was associated with an iliac crest contusion.

**Case Report**

One hour after participation in a college football game, a 19-year-old defensive lineman reported severe stabbing abdominal and testicular pain on the right side. He had been involved in only six plays during the game, and he could not recall having sustained any abdominal or pelvic trauma. The pain was relieved by lying down and it was exacerbated by walking. He reported having eaten four slices of pizza following the game and having experienced some nausea and flatus, but denied vomiting, diarrhea, dysuria, polyuria, gross hematuria, penile discharge or lesions, or a history of sexual activity. He had sustained a mild right-side iliac crest contusion four days earlier during a practice session. This injury had been treated by the athletic training staff with ice, rest, and stretching. He self-administered 800 mg of ibuprofen three times daily. He missed one day of practice, but he was relatively pain free and capable of full participation with protective padding at two days after the initial injury. His medical history included arthroscopic partial medial meniscectomies of both knees and a diagnosis of exercise-induced asthma, for which the patient used albuterol as needed. There was no history of a bleeding disorder or susceptibility to bruising. He reported occasional alcohol use (but none since the injury) and denied tobacco, recreational drug, or supplement use. Family medical history was unremarkable.

On physical examination, the athlete was afebrile, with a pulse of 80 bpm, blood pressure of 148/83, and respiration rate of 20 breaths per minute. The appearance of the genitalia and skin were normal and bowel sounds were normal. Abdominal examination revealed right lower quadrant tenderness with guarding. This finding, along with an abnormal Rovsing’s sign, abnormal obturator test, and abnormal psoas test, suggested that appendicitis was a possible cause of the pain. There was tenderness at the right inguinal ring, but no herniation was palpable.

Immediately after completion of the initial examination, the athlete was referred to the local emergency room by the team physician for diagnostic tests and pain control. He was transported by his parents, who were in attendance at the game. Blood tests performed several hours after the game included liver function tests, pancreas indices (amylase and lipase), hemoglobin, hematocrit, platelets, and bleeding parameters (protime and prothrombin time), all of which were interpreted as normal. Urinalysis was normal, with no evidence of hematuria. A CT scan demonstrated normalcy of the pancreas, liver, spleen, and kidneys, and no evidence of appendicitis. There was a right retroperitoneal hematoma extending from the T12 posterior retroperitoneal space into the pelvis without a clear origin (Figure 1).
The athlete was treated with Phenergan to decrease nausea and morphine sulfate to control pain. Vicodin was prescribed for pain control and he was discharged in stable condition. His abdominal pain gradually abated over the following week. A repeat CT scan 2 weeks later demonstrated that the hematoma had originated at the right iliac crest and had decreased in size since the time of the initial CT scan (Figure 2). He gradually resumed participation over the next few weeks and reported no further problems during the remainder of the season.

Discussion

The iliac crest extends from the posterior superior iliac spine to the anterior superior iliac spine and provides an attachment site for the gluteus maximus, gluteus medius, tensor fascia latae, sartorius, iliacus, quadratus lumborum, latissimus dorsi, obliquus externus abdominis, obliquus internus abdominis, iliocostalis lumborum and transversus abdominis muscles. In the presence of muscle spasm associated with an iliac crest contusion, motions of the trunk or lower extremity, such as rotation or side bending, can cause extreme pain.

Athletic trainers typically treat hip pointers with ice and rest, which may include use of crutches, followed by stretching and strengthening as tolerated. Radiographs are indicated only when a fracture of the iliac crest is suspected. No referral for radiographs was made in this case, because the initial injury presented as a typical iliac crest contusion. Return to play is typically allowed with protection of the contused area as soon as symptoms resolve sufficiently to permit pain-free activity.

Although iliac crest contusion typically resolves without complication, several potential complications are mentioned in the literature. Anderson et al\(^1\) have stated that “one potentially serious consequence would be hematoma formation with pressure on adjacent nerves, such as the lateral femoral cutaneous nerve (meralgia paraesthetica).” Melamed and Hutchinson\(^2\) have stated that “complications, although rare, can arise from hip pointers. Femoral or lateral femoral cutaneous nerve palsy can occur secondary to hematoma formation, cryotherapy, or scar formation. Scar formation within the muscle can lead to shortening of the muscle. Chronic bursitis or posttraumatic myositis ossificans can also occur. Early and aggressive non-surgical treatment can reduce the incidence of these complications.”

We were surprised that this case of acute abdominal pain was associated with a retroperitoneal hematoma. Although common as a result of high-energy motor vehicle accidents, there are no reported cases attributable to a sports injury. There are several reported cases of spontaneous retroperitoneal hematoma among people anticoagulated through administration of Coumadin.\(^3\)

The subject of this case report self-administered ibuprofen. Because nonsteroidal anti-inflammatory drugs (NSAIDs) inhibit blood clotting, it may have contributed to the development of the hematoma.