Psoas Abscess in a Snowboarder: A Musculoskeletal Manifestation of Crohn's Disease

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Introduction

In this report, we describe the case of a patient who presented to our sports medicine clinic with lower back and hip pain caused by an undiagnosed psoas abscess secondary to Crohn's disease. This case report is of particular relevance, as lower back and hip pain are common complaints in patients of all ages, with a wide range of potential etiologies. While these symptoms are most often benign, physicians must be sure to evaluate for and subsequently rule out more dangerous and potentially life-threatening causes when alarming symptoms are present, as was the case in this patient.

Case Report

A 22-year-old avid snowboarder presented to our sports medicine clinic complaining of chronic right-sided lower back pain for 2 years. One month prior to presentation, he experienced acute worsening of his back pain with new-onset radiation to the ipsilateral hip and inguinal region while snowboarding. The pain was so severe that he was left unable to ambulate without crutches. He was initially evaluated at an outside emergency room and then by his primary care physician, who ultimately referred him to physical therapy. Physical therapy improved his strength and mobility, although his pain continued to persist. Two weeks after beginning physical therapy, he developed a newly onset burning sensation throughout the distribution of the ilioinguinal, obturator, and femoral nerves which the patient localized to the right inguinal region, anterior thigh, and medial thigh ipsilaterally. This new symptom prompted him to self-refer to our sports medicine clinic. Of note, his Crohn's disease was previously treated using Infliximab infusions; however, he was unable to obtain his medication for 2 years due to circumstances surrounding the COVID-19 pandemic.

In the clinic, his vitals were stable; he was afebrile and normotensive with a heart rate of 107 beats per minute and an oxygen saturation of 99%. He endorsed 8/10 pain in the right lumbar spine, right hip, and right inguinal region with radiation to the ipsilateral anterior and medial thigh. The review of symptoms was entirely negative with the exception of a recent five-pound weight loss the patient attributed to being bed-bound due to pain. Examination of the right hip revealed 2/5 strength with a diminished range of motion limited to 40 degrees of flexion and 10 degrees of extension. 1+ reflexes were noted on testing of the patellar and Achilles tendon reflexes. Examination of the contralateral lower extremity revealed 5/5 strength, full range of motion, and 2+ reflexes throughout. Given the suspected musculoskeletal etiology, initial differential diagnoses included lumbar radiculopathy, obturator neuropathy, piriformis syndrome, and sacroiliac joint dysfunction. However, other possible causes include an iliopsoas strain, ischiofemoral impingement, and quadratus lumborum strain. While less common, infection also may lead to hip and lower back pain; some examples of infectious etiologies include diverticulitis, appendicitis, osteomyelitis, tuberculosis, and septic arthritis.

Emergent imaging of the lumbar spine and pelvis was ordered, revealing a right-sided, heterogeneous fluid collection extending from the L3 vertebral body to the lesser trochanter, entirely replacing the iliopsoas and iliacus on T2-weighted magnetic resonance imaging (MRI). Distally, the lesion began to involve the neurovascular bundle with intrafascial extension between the rectus femoris and adductor compartment (Fig. 1). These findings raised concern for an intra-abdominal abscess; as such, computed tomography (CT) scans of the abdomen and pelvis — both with and without contrast — were immediately ordered, which confirmed the findings initially seen on MRI (Fig. 2). Given the imaging findings, the patient was immediately admitted for inpatient management.

Upon admission, antibiotic therapy, consisting of the following intravenous medications, was initiated immediately: vancomycin, 1.25 g every 8 h; cefepime, 1 g every 6 h; and metronidazole, 500 mg every 8 h. This medication regimen was selected for the purpose of empiric gastrointestinal coverage given the patient's medical history. Laboratory values, including chemistry panel, complete blood count, and urinalysis, were within normal limits. On the first day of admission, the patient underwent drain placement by interventional radiology without complication which yielded 190 mL of fluid over 72 h.

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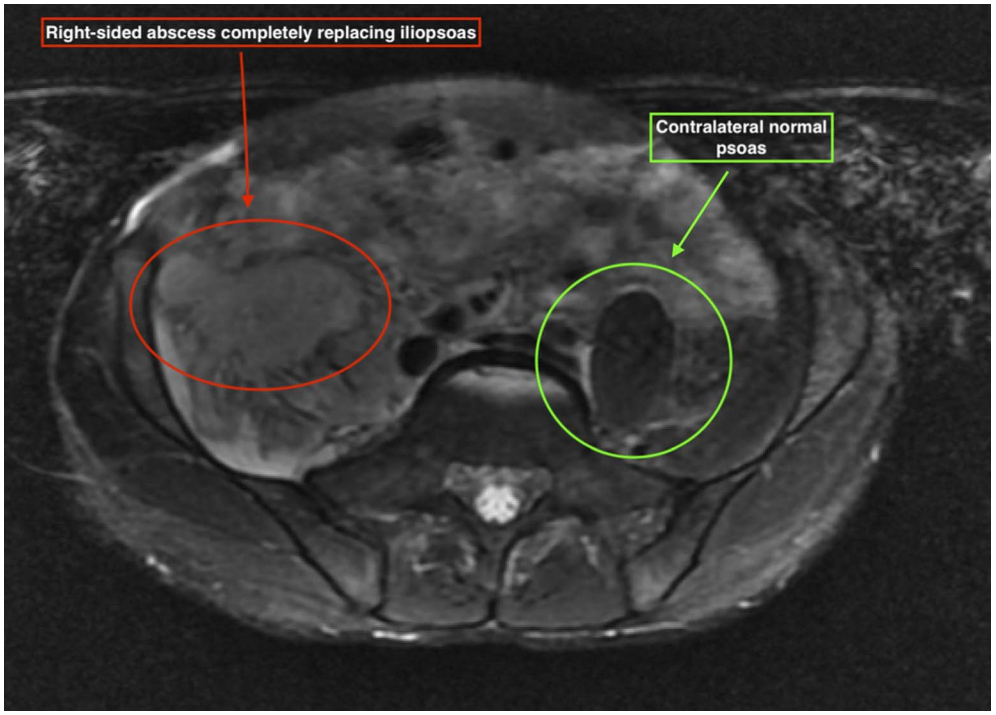

Figure 1: T2-weighted MRI revealing right-sided abscess replacing the iliopsoas and iliacus with corresponding normal contralateral anatomy.

Culture and gram staining of the aspirate were negative 72 h after drain placement, at which point the drain was removed. After a 3-d admission, the patient was discharged on a 10-d course of amoxicillin-clavulanate 875 mg twice daily. At 1 month's follow-up with colorectal surgery, the patient's back pain, hip pain, and functional impairment had entirely resolved. He was able to return to his prior activities — including snowboarding — without issue.

Discussion

Low back pain is one of the most common complaints in the general population, with nearly 80% of adults reporting

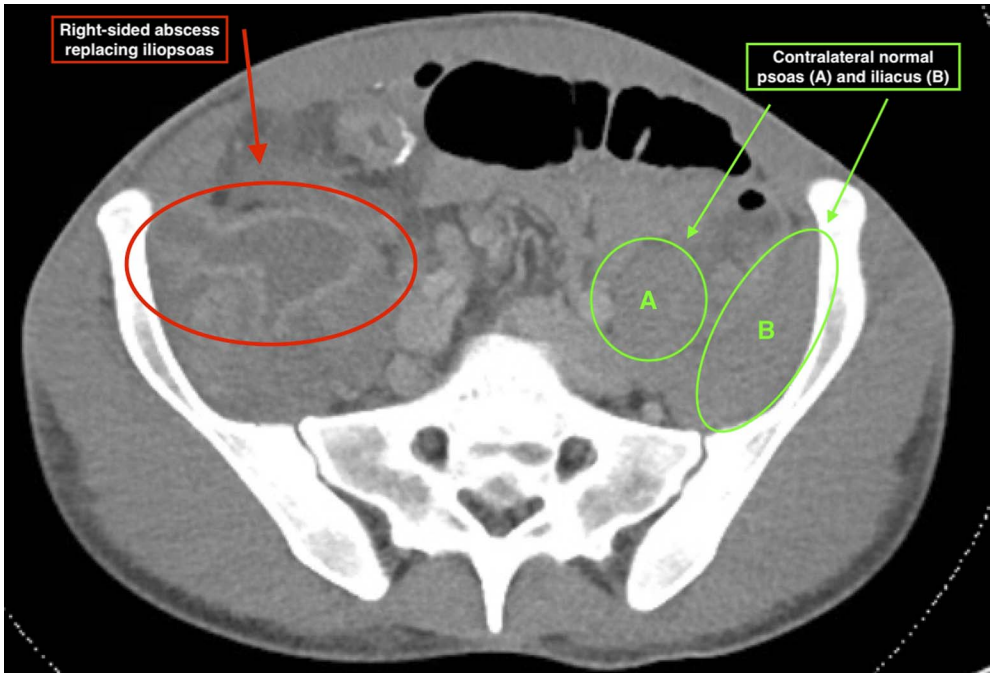

Figure 2: Axial CT abdomen/pelvis with contrast confirming right-sided abscess with normal contralateral anatomy.

low back pain at some point in their lifetime (1). In most cases, low back pain is musculoskeletal in nature and can be treated without concern for a potentially life-threatening cause. However, the etiologies of back pain are widespread and also can include pathology that is infectious or malignant in nature. Moreover, back pain also can manifest as referred pain from another region of the body, such as the abdomen or retroperitoneal space, making diagnosis and treatment especially difficult. As such, a thorough history and physical examination is warranted in patients presenting with low back pain, particularly in adolescents and young adults.

In the case of this patient, his low back pain was the result of a retroperitoneal abscess secondary to untreated Crohn's disease. Crohn's disease is an autoimmune condition characterized by widespread inflammation of the gastrointestinal tract with an incidence of 96.3 to 318.5 per 100,000 person-years in the United States (2). Crohn's disease can lead to intra-abdominal abscess formation in 10% to 30% of patients; however, involvement of the psoas is exceptionally rare, occurring in only 0.4% to 3.4% of patients with Crohn's disease (3,4). Patients with psoas abscesses commonly present with symptoms of fever, flank pain, and hip pain — two of which were reported by this patient; however, only 30% of patients present with all three symptoms (5).

Certain alarm symptoms warrant urgent imaging in patients with Crohn's disease, such as acute changes in weight-bearing status and signs of potential compromise to neurovascular structures (6). Point-of-care ultrasonography has been shown to be ineffective as a diagnostic method. Instead, contrast-enhanced CT scans of the abdomen and pelvis are the modality of choice and should be ordered when there is high clinical suspicion of a psoas abscess (7–9).

In summary, psoas abscesses are a rare but potentially life-threatening complication of Crohn's disease that can mimic common musculoskeletal injuries, as was the case in this patient. Physicians should have an increased clinical suspicion of intra-abdominal or retroperitoneal pathology when evaluating back pain in patients with Crohn's disease, particularly when alarming symptoms are present. When evaluating these patients, a contrast-enhanced CT scan of the abdomen and pelvis should be strongly considered, as it is the criterion standard used to rule out the presence of abscesses that could cause catastrophic complications if left undiagnosed.

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References

1. Hemmer CR. Evaluation and treatment of low back pain in adult patients. *Orthop. Nurs.* 2021; 40:336–42.
2. Ng SC, Shi HY, Hamidi N, *et al.* Worldwide incidence and prevalence of inflammatory bowel disease in the 21st century: a systematic review of population-based studies. *Lancet.* 2018; 390:2769–78.
3. Hamada T, Kosaka K, Sonde C, *et al.* A case of abdominal abscess in Crohn's disease: successful endoscopic demonstration of an obscure enteric fistula by dye injection via a percutaneous drainage catheter. *Case Rep. Gastroenterol.* 2009; 3:138–46.
4. Ogihara M, Masaki T, Watanabe T, *et al.* Psoas abscess complicating Crohn's disease: report of a case. *Surg. Today.* 2000; 30:759–63.
5. Garner JP, Meiring PD, Ravi K, Gupta R. Psoas abscess — not as rare as we think? *Color. Dis.* 2007; 9:269–74.
6. Christodoulou DT, Katsanos K, Familias I, *et al.* Psoas fistula and abscess in a patient with Crohn's disease presenting as claudication and hip arthritis. *Ann. Gastroenterol.* 2001; 14:314–8.
7. Abraham AS, Liu MY, Vinson DR. Image diagnosis: iliopsoas abscess from Crohn disease. *Perm. J.* 2017; 21:16–150.
8. Navarro Fernandez JA, Tárraga López PJ, Rodríguez Montes JA, López Cara MA. Validity of tests performed to diagnose acute abdominal pain in patients admitted at an emergency department. *Rev. Esp. Enferm. Dig.* 2009; 101:610–8.
9. Zissin R, Gayer G, Kots E, *et al.* Iliopsoas abscess: a report of 24 patients diagnosed by CT. *Abdom. Imaging.* 2001; 26:533–9.