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Enterocutaneous Fistula Complicated by Iliopsoas Abscess and Extensive Necrotizing Fasciitis of the Lower Limb in Neglected Crohn's Disease: A Case Report

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Abstract **Case Report**

Background: Iliopsoas abscess is a rare but severe complication of Crohn's disease, typically arising from transmural inflammation and fistulization. Extension to the lower limb with associated necrotizing fasciitis is exceptional and life-threatening, with only a limited number of cases reported in the literature. ***Case Presentation:*** A 34-year-old male with untreated Crohn's disease presented with a right iliac fossa enterocutaneous fistula, subocclusive symptoms, fever, and progressive right lower limb impairment. CT scan showed an iliopsoas abscess associated with necrotizing fasciitis of the thigh. Emergency surgery found fistulized ileal loops communicating with a retroperitoneal abscess extending to the lower limb. Management included drainage, ileocolic resection, and stoma creation, along with extensive necrosectomy. Postoperatively, the patient was admitted to the intensive care unit, and placed on norepinephrine support. He was subsequently transferred to the plastic surgery unit for complementary necrosectomy and was discharged with a functional stoma. ***Discussion:*** Iliopsoas abscess in Crohn's disease is usually secondary to fistulizing ileocecal disease. Spread through the retroperitoneal space and along fascial planes may lead to thigh involvement and, in severe cases, necrotizing fasciitis. Early recognition based on imaging, prompt surgical drainage, broad-spectrum antibiotics, and aggressive debridement are essential to reduce morbidity and mortality. ***Conclusion:*** This case highlights a rare and severe presentation of Crohn's disease complicated by enterocutaneous fistula, iliopsoas abscess, and extensive necrotizing fasciitis of the lower limb. A multidisciplinary and aggressive surgical approach is crucial for patient survival.

Keywords: Crohn’s diseases, Enterocutaneous fistula, iliopsoas abcess, Necrotizing fasciitis.

INTRODUCTION

Crohn's disease is a chronic inflammatory disorder characterized by transmural bowel inflammation, which predisposes patients to penetrating complications such as fistula formation and intra-abdominal abscesses. Among these, iliopsoas abscess remains an uncommon but well-recognized entity, with an incidence ranging from 0.4% to 4.3% in patients with complicated disease [1,2]. Extension of such infection to the lower limb is exceedingly rare, and its association with necrotizing fasciitis represents a life-threatening condition requiring urgent multidisciplinary management [3,4]. The risk of such complications is markedly increased in patients with prolonged untreated disease, underscoring the critical importance of long-term therapeutic follow-up.

We report a rare case of unmanaged Crohn's disease complicated by enterocutaneous fistula, iliopsoas abscess, and extensive necrotizing fasciitis of the thigh.

CASE PRESENTATION

We report the case of a 34-year-old male, chronic smoker with a 20 pack-year history, with a past medical history of appendicular peritonitis in 2015 and a diagnosis of Crohn's disease established in 2019 but left untreated. The patient underwent ileocecal resection with double-barrel ileocolostomy for stenosis of the last ileal loop in 2020, followed by restoration of bowel continuity in 2021. Two months prior to admission, he developed an enterocutaneous fistula in the right iliac fossa with discharge of digestive fluid. This was associated with abdominal pain and subocclusive symptoms with no

evidence of gastrointestinal bleeding. The clinical course progressively worsened with the onset of psoitis leading to functional impairment of the right lower limb, accompanied by fever and deterioration of general condition.

On physical examination, a 0.5 cm fistulous opening was identified in the right iliac fossa, discharging digestive content with surrounding inflammation. There was associated induration and subcutaneous crepitus extending to the right thigh and lateral aspect of the leg, raising suspicion of soft tissue involvement. Laboratory findings revealed a significant inflammatory syndrome, with markedly elevated C-reactive protein (CRP) and leukocytosis. CT scan demonstrated a right iliopsoas abscess associated with ipsilateral necrotizing fasciitis of the thigh, along with circumferential and regular thickening of the cecal wall consistent with underlying Crohn's disease, without a clearly identifiable fistulous tract.

Figure 1: Enterocutaneous fistula in the right iliac fossa draining digestive contents

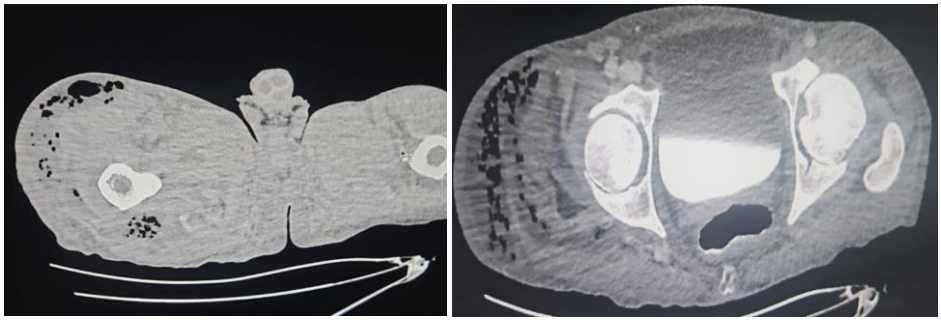

Figure 2: There is extensive edematous and gas-containing infiltration of the subcutaneous adipose tissue and muscle compartments of the right thigh, with multiple confluent collections demonstrating peripheral enhancement after contrast administration, containing gas bubbles."

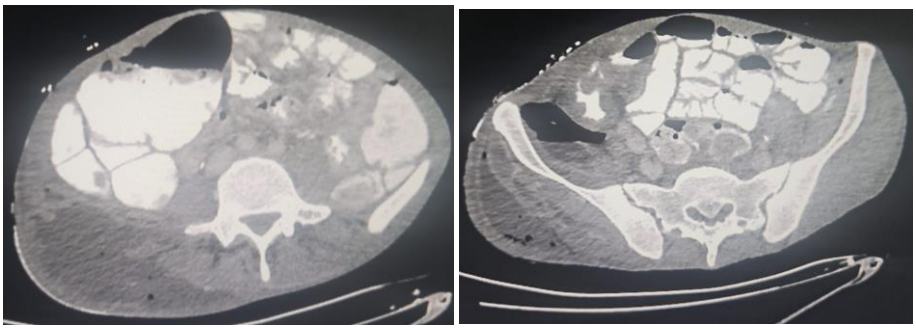

Figure 3: CT imaging demonstrated a collection involving the right iliopsoas muscle, associated with ipsilateral necrotizing fasciitis of the thigh.

The patient was taken for emergency surgical exploration, which revealed a conglomerate of fistulized small bowel loops involving the terminal ileum, forming an enterocutaneous fistula communicating with a retroperitoneal abscess containing approximately 500 mL of purulent fluid. The infection extended inferiorly toward the lower limb. Surgical management consisted of evacuation of the retroperitoneal abscess, segmental ileocolic resection including the diseased bowel, and creation of a double-barrel ileocolostomy. Intraoperative assessment by plastic surgery revealed extensive circumferential necrosis of the anterior compartment of

the thigh. Necrosectomy was performed with exposure of the muscle compartments, showing the characteristic "fish flesh" appearance of necrotizing infection. Copious irrigation and antiseptic dressing were subsequently applied.

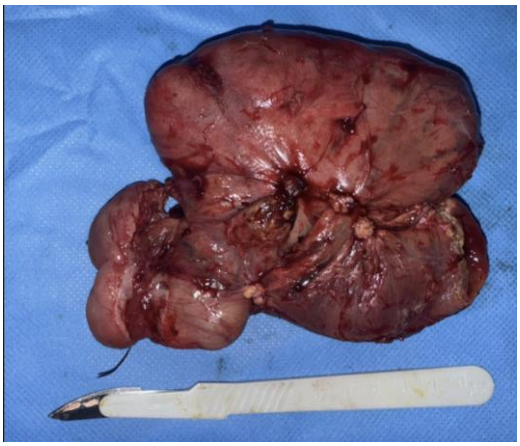

Figure 4: Ileocolic resection specimen containing a conglomerate of fistulized bowel loops.

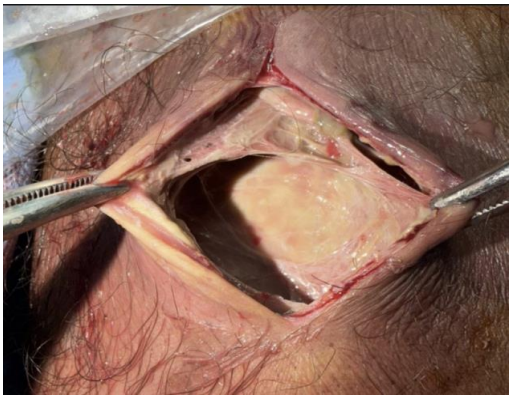

Figure 5: An incision over the anterior aspect of the right thigh revealed extensive necrosis with purulent discharge

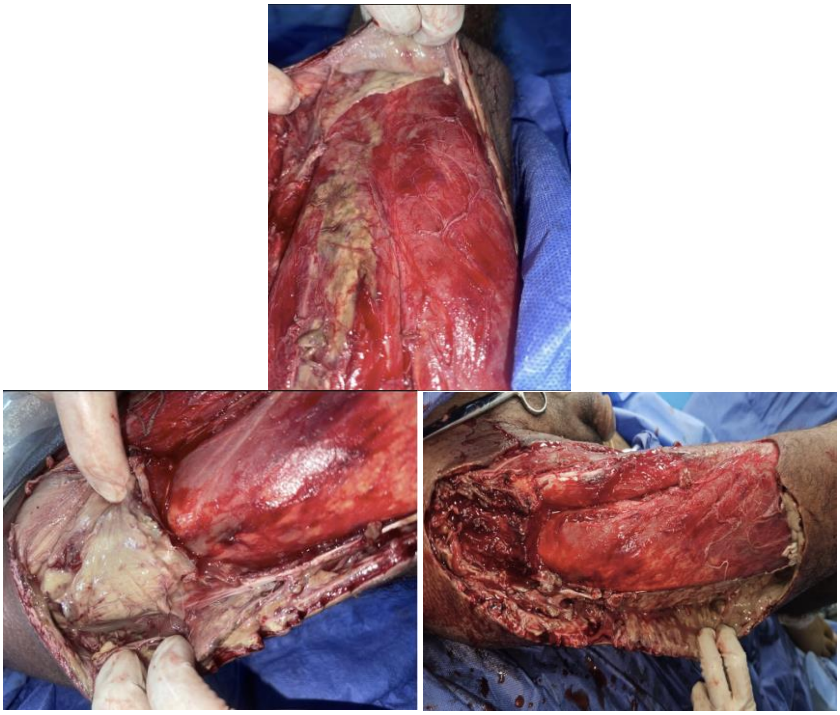

Figure 6: Extensive "circumferential" necrosis of the right thigh requiring necrosectomy, with collapse of purulent compartments and a characteristic "fish flesh" appearance

Postoperatively, the patient required admission to the intensive care unit, and received vasopressor support with norepinephrine due to hemodynamic instability consistent with septic shock. Following clinical stabilization, he was transferred to the plastic surgery unit for complementary necrosectomy and wound care. He was ultimately discharged in a stable condition with a functional double-barrel ileocolostomy.

DISCUSSION

The occurrence of iliopsoas abscess in Crohn's disease is typically related to transmural inflammation leading to fistula formation from the ileocecal region into the retroperitoneum [1,6]. The psoas muscle provides a pathway for the spread of infection due to its anatomical continuity from the lumbar region to the lesser trochanter of the femur. Once infection reaches the psoas sheath, it may track inferiorly beneath the inguinal ligament and extend into the thigh compartments [7]. This anatomical route explains the rare but documented cases of thigh abscesses and soft tissue infections originating from intra-abdominal pathology.

Necrotizing fasciitis represents the most severe form of soft tissue infection and is characterized by rapid progression along fascial planes, leading to vascular thrombosis, tissue ischemia, and widespread necrosis. It is most commonly polymicrobial when originating from abdominal sources, involving Gram-negative bacilli and anaerobic organisms [4]. The association of necrotizing fasciitis with Crohn's disease is extremely rare but has been reported in isolated cases, often in the context of delayed diagnosis or neglected disease [2,3]. Recent literature highlights that intra-abdominal sepsis, particularly retroperitoneal abscesses, can serve as a source of descending necrotizing infections of the lower limb [3,7].

The clinical presentation of iliopsoas abscess is frequently nonspecific, and the classical triad of fever, flank pain, and hip limitation is present in only a minority of patients [6]. In many cases, symptoms are dominated by musculoskeletal complaints such as thigh pain or limping, which may lead to misdiagnosis or delayed recognition [7]. In our patient, the presence of an enterocutaneous fistula, subocclusive symptoms, and psoitis suggested advanced fistulizing Crohn's disease. The additional finding of crepitus extending to the thigh was highly suggestive of necrotizing infection and warranted urgent surgical intervention.

Computed tomography remains the gold standard for diagnosis, allowing precise identification of abscesses, bowel involvement, and soft tissue extension [5,6]. In cases of necrotizing fasciitis, imaging may demonstrate gas within the soft tissues and fascial thickening, although the diagnosis remains primarily clinical and surgical [8]. Early imaging plays a crucial role in guiding management and determining the extent of disease.

Management of such complex cases requires a multidisciplinary approach involving surgeons, radiologists, intensivists, and plastic surgeons. While percutaneous drainage may be effective in selected cases of isolated iliopsoas abscess, surgical intervention is often necessary in Crohn's disease due to the presence of fistulas and diseased bowel segments [1,6]. In addition to abscess drainage and bowel resection, aggressive surgical debridement is mandatory in cases of necrotizing fasciitis, often requiring repeated procedures [3,8]. Delay in surgical management is associated with significantly increased mortality, which may reach up to 40% in severe cases [8]. In our patient, the need for intensive care admission with vasopressor support and iterative necrosectomy by the plastic surgery team further illustrates the severity and complexity of such presentations. Long-term postoperative management of Crohn's disease — including biological therapy or immunosuppressive agents — should be planned following recovery in order to prevent disease recurrence and future complications.

Despite major advances in laboratory investigations and imaging modalities for the diagnosis of abdominal pathologies, clinical examination remains crucial, particularly in complex and atypical presentations. In our case, early bedside findings such as psoitis, extensive induration, and subcutaneous crepitus were key indicators of a severe underlying septic process with extra-abdominal extension. This highlights the persistent importance of thorough clinical assessment, especially in neglected or advanced disease, where prompt recognition can be life-saving [4].

The present case is remarkable due to the coexistence of multiple severe complications, including enterocutaneous fistula, iliopsoas abscess, retroperitoneal collection, and extensive necrotizing fasciitis of the lower limb. Such a combination is rarely reported in the literature and underscores the aggressive potential of untreated Crohn's disease [2,3]. It also highlights the importance of long-term follow-up and early therapeutic intervention to prevent catastrophic outcomes.

CONCLUSION

In conclusion, iliopsoas abscess complicated by necrotizing fasciitis of the lower limb represents an uncommon but life-threatening manifestation of Crohn's disease. Clinicians should maintain a high index of suspicion when encountering atypical thigh infections, particularly in patients with known or suspected inflammatory bowel disease. Early diagnosis through imaging and prompt aggressive surgical management — followed by multidisciplinary postoperative care including intensive care support, iterative debridement, and long-term Crohn's disease therapy — are essential to improve patient outcomes.

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