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Case Report

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Abdominal erythema nodosum in Crohn's Disease: A case report

Cyrine Louati[1]*; Ghada Gharbi[1]; Asma Ben Mohamed[1]; Manel Yakoubi[1]; Ghazi Laamiri[2]; Moufida Mahmoudi[3]; Amal Khsiba[3]; Mouna Medhioub[3]; Emna Chelbi[4]; Lamine Hamzaoui[3]

[1]University Hospital Assistant, Gastroenterology Department, Faculty of Medicine of Tunis, Taher Maamouri Hospital, Nabeul, Tunisia.

[2]University Hospital Assistant, General Surgery Department, Faculty of Medicine of Tunis, Taher Maamouri Hospital, Nabeul, Tunisia.

[3]Associate Professor, Gastroenterology Department, Faculty of Medicine of Tunis, Taher Maamouri Hospital, Nabeul, Tunisia.

[4]Associate Professor, Department of Anatomy and Pathological Cytology, Faculty of Medicine of Tunis, Taher Maamouri Hospital, Nabeul, Tunisia.

***Corresponding Author: Cyrine Louati**
Gastroenterology Department, Faculty of medicine of Tunis, Taher Maamouri Hospital, Nabeul, Tunisia.
Tel: 0021699536680; Email: Cyrinelouati94@live.fr

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Abstract

Introduction: Dermatological manifestations are recognized extraintestinal complications of inflammatory bowel disease (IBD). Erythema nodosum (EN) is the most common, typically located on lower-extremity sites. Abdominal localization remains exceptional.

Case presentation: We report the case of an 18-year-old patient with a history of stricturing ileocolonic Crohn's disease and bilateral sacroiliitis. While receiving infliximab therapy, he developed a painful hypogastric mass, initially suspected to be a soft tissue abscess. Surgical excision followed by histopathological analysis confirmed the diagnosis of abdominal erythema nodosum. Clinical outcome was favorable with no recurrence under ongoing infliximab treatment.

Conclusion: This report underlines an unusual abdominal localization of EN in a Crohn's disease patient. Biopsy remains crucial to establish the diagnosis and guide management

Introduction

Dermatological manifestations, involving either the skin or mucous membranes, may precede or occur during the course of inflammatory bowel disease (IBD). They may be directly or indirectly associated with IBD and display heterogeneous clinical presentations. Although uncommon, they can be particularly misleading due to their marked clinical polymorphism [1]. Erythema nodosum (EN) is the most frequent cutaneous manifestation observed in IBD. Its prevalence is higher among patients with Crohn's disease, affecting 5-15% of them [2], with a female predominance [3]. The most frequent presentation is palpable, subcutaneous nodules on the shins. Involvment of non-lower-extremity sites rare and atypical [4]. We report here a case of abdominal erythema nodosum in a patient with Crohn's disease.

Case presentation

The patient was an 18-year-old male, followed since the age of 12 for stenosing ileocolonic Crohn's disease associated with extraintestinal manifestations, namely bilateral stage three sacroiliitis. He was receiving infliximab at 5 mg/kg every 8 weeks. Clinically, the patient reported one to two well-formed stools per day. He complained of hypogastric abdominal pain. On abdominal examination, a 2 cm slightly tender hypogastric soft tissue mass was detected, with normal overlying skin. Soft tissue ultrasound suggested a localized collection. The abdominal CT scan showed diffuse thickening of the subcutaneous adipose tissue of the anterior abdominal wall, associated with ill-defined areas of increased density. The patient underwent surgical excision of the mass. Histopathology showed a dense inflammatory infiltrate composed of histiocytes, lymphocytes,

plasma cells, and numerous neutrophils, associated with septal panniculitis. Immunohistochemistry revealed mild to moderate macrophagic (CD68+) and T lymphocytic infiltration, predominantly septal. These findings confirmed acute hypodermal inflammatory changes consistent with erythema nodosum. The patient continued his scheduled infliximab infusions. The postoperative course was favorable, with complete wound healing and no recurrence.

Discussion

Erythema nodosum is an extraintestinal manifestation directly related to IBD and represents a subtype of panniculitis [5]. It typically presents as tender, erythematous nodules ranging from deep red to violaceous, symmetrically distributed over the pretibial areas. Less commonly, lesions may appear on non-lower-extremity sites such as the upper limbs, trunk or face. Abdominal localization is exceptional, making diagnosis more challenging. A subsequent literature review of EN in non-lower extremity (LE) sites identified some case reports, with histopathology confirmation (Table1). Our case is the first case of Abdominal location of Erythema Nodosum.

Table 1: Past reports.

Site of lesion	Number of cases	Details	Reference
Upper extremities	4	Histologically confirmed EN on arms and forearms	Perez-Chua T et al. [6]
Trunk	2	Lesions on chest and back; classic septal panniculitis	Perez-Chua T, et al. [6]
Face	1	Extremely rare; confirmed histopathologically	Perez-Chua T, et al. [6]
Forearms	Not quantified	Mentioned as atypical site in clinical reviews	Mert el al. [7]
Sarcoidosis-associated EN	Not quantified	Atypical distribution in systemic disease	Medina L. D [8]

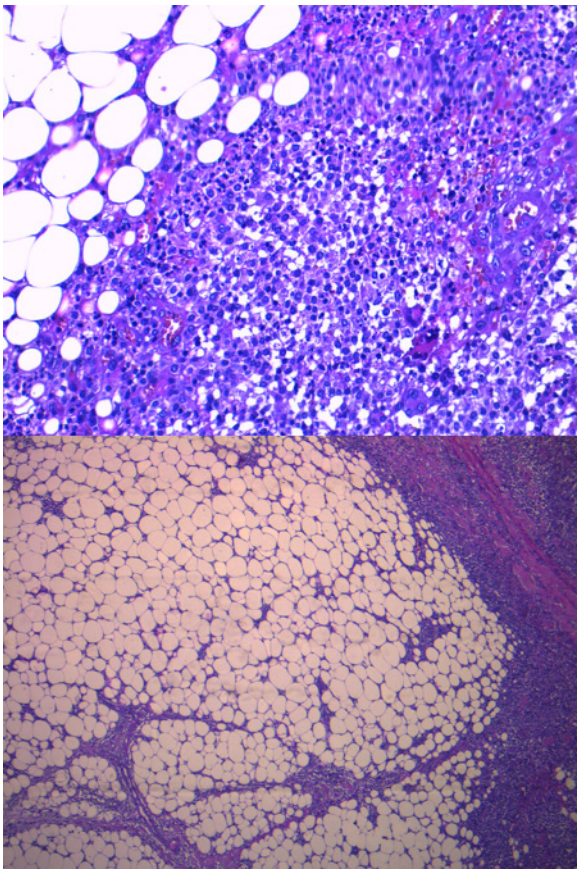

Figure 1: (A) HE x40. **(B)** HE x200. The hypodermis shows a dense inflammatory infiltrate composed of histiocytes, lymphocytes, plasma cells, and numerous neutrophils. Rare multinucleated giant cells of foreign body type are present. Associated lesions of septal panniculitis are observed.

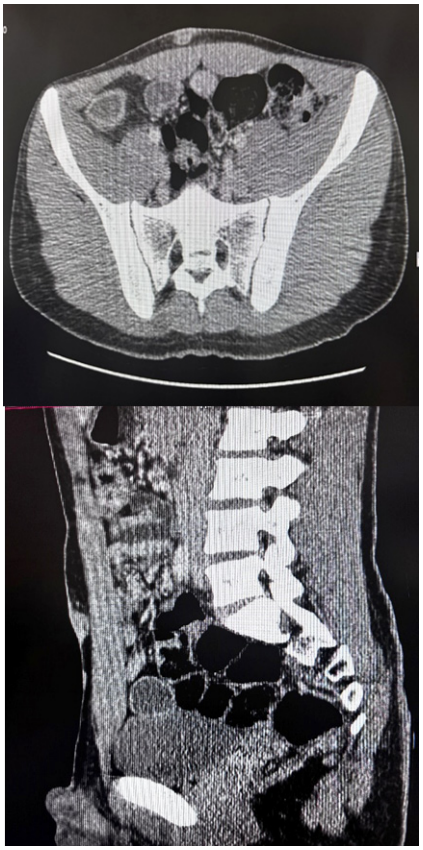

Figure 2: Axial **(A)** and sagittal **(B)** contrast-enhanced CT images of the abdomen showing diffuse thickening of the subcutaneous fat with ill-defined areas of increased density in the anterior abdominal wall. These findings correspond to inflammatory infiltration of the subcutaneous tissue, consistent with panniculitis. No abscess formation or deep fascial involvement is observed.

Usually, the overlying skin over nodes shows neither suppuration nor ulceration, and the lesions evolve toward a yellowish, bruise-like discoloration before resolving spontaneously within six weeks. The eruption may be associated with fever, synovitis, or arthritis [4]. The differential diagnosis of EN includes other forms of panniculitis, cutaneous infections, and subcutaneous lymphomas [4]. Histopathological examination is characteristic and essential when diagnostic uncertainty arises, as in our case, where the diagnosis was confirmed by resection histology. It typically demonstrates septal panniculitis with subcutaneous septal infiltration by lymphocytes and predominantly neutrophils, later evolving toward fibrosis and macrophage predominance [9]. The pathophysiology of EN remains poorly understood. It may involve dysregulated intestinal immune responses extending beyond the gut, altered trafficking of immune cells, and disturbances of the intestinal microbiota. A genetic predisposition may also play a role [10]. EN in IBD usually parallels disease activity. However, in our patient, it occurred despite clinical and endoscopic remission. Given the usually limited nature of lesions, symptomatic management with compression bandages or analgesics is often sufficient [11,12]. In severe or refractory cases, oral corticosteroids (prednisone 20 mg/day for 7–10 days) may be considered [12,13]. For patients with active IBD and treatment-resistant EN, anti-TNF therapy may be effective, with reported response rates of up to 80% [14]. Several case reports have also highlighted the efficacy of infliximab and adalimumab at standard, non-optimized IBD doses [15,16]. Nevertheless, in our patient, EN developed despite ongoing infliximab therapy and in the absence of a disease flare. More recently, monoclonal antibodies targeting the IL-12/23p40 subunit have shown efficacy in EN. A multicenter study reported four complete and one partial remission among five patients treated with ustekinumab [17].

Conclusion

Erythema nodosum is an extraintestinal cutaneous manifestation directly associated with IBD. It most commonly affects the anterior legs, while non-lower-extremity sites remains exceptional. Ou case is the first case report in the literature of abdominal Erythema Nodosum in Crohn's Disease. This rare presentation should be considered in Crohn's disease patients, and biopsy of atypical nodules is recommended when diagnostic uncertainty exists.

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