

# VENOUS THROMBOSIS AS A FORM OF PRESENTATION IN INFLAMMATORY BOWEL DISEASE - CASE REPORT

Diana Alba <sup>a,1</sup>, Inês Paiva Ferreira <sup>a</sup>, Mafalda Moreira <sup>a</sup>, Maria do Céu Ribeiro <sup>a</sup> and Ana Reis <sup>a</sup>

<sup>a</sup>Centro Hospitalar do Tâmega e Sousa.

**ABSTRACT** Inflammatory bowel disease (IBD) is a chronic disorder of the gastrointestinal tract, with a rising incidence worldwide. It is often associated with numerous extraintestinal manifestations, such as erythema nodosum (EN) and venous thromboembolism (VTE). We report a case of a 17-year-old male seen in a Pediatric consultation due to pain at the inner aspect of the lower left limb associated with bilateral lower limb cutaneous lesions for about a year. A left leg ultrasound revealed signs of phlebitis and the doppler ultrasonography revealed signs of an old occlusive VTE at the level of the great left saphenous vein. Fecal calprotectin was significantly elevated (775 ug/g). Abdominal ultrasound and entero-MRI showed increased thickness of the terminal ileum. Colonoscopy confirmed the diagnosis of Crohn's disease. He began induction treatment with systemic corticosteroids for eight weeks and maintenance treatment with azathioprine. Three months later he was asymptomatic with complete resolution of the erythema nodosum lesions. Extraintestinal manifestations can precede or be concomitant with the diagnosis of IBD and can have a significant impact on the quality of life of these patients. EN is the most common skin manifestation of IBD, with a well-established relationship between these two diseases. Many other extraintestinal manifestations are described, occurring less frequently. The authors aim to bring awareness to the risk of VTE as a rare but non-negligible comorbidity of IBD. This was an uncommon initial presentation of Crohn's Disease since the patient had never reported any gastrointestinal symptoms. It is important to improve the knowledge of pediatricians about all kinds of extraintestinal manifestations of IBD since they may guide toward the correct diagnosis and allow the prompt initiation of treatment.

**KEYWORDS** inflammatory bowel disease, venous thromboembolism, erythema nodosum, gastrointestinal

## Introduction

Inflammatory bowel disease (IBD) is a chronic gastrointestinal tract disorder with a rising incidence worldwide and a global

prevalence that surpasses 0.4%. [1,2] It is often associated with numerous extraintestinal manifestations, which can occur in about 6-23% of pediatric patients. [1,3] Erythema nodosum (EN) and venous thromboembolism (VTE) are among these manifestations and may precede the diagnosis of IBD.[4]

## Case report

We report a case of a previously healthy 17-year-old male who was seen in a Pediatric consultation due to pain at the inner aspect of the lower left limb associated with bilateral lower limb cutaneous lesions for about a year. He denied fever, fatigue, weight loss or gastrointestinal symptoms such as abdominal pain, diarrhoea or vomiting. Physical examination revealed a healthy appearance, with a weight of 57.2 kg (25 percentile for age) and a

Copyright © 2023 by the Bulgarian Association of Young Surgeons

DOI:10.5455/IJMRCR.172-1683647398

First Received: May 10, 2022

Accepted: May 27, 2023

Associate Editor: Ivan Inkov (BG)

<sup>1</sup>Corresponding author: Diana Alba, Centro Hospitalar do Tâmega e Sousa; E-mail address: diana.alba.04@gmail.com

This is an open access article under the CC BY-NC-SA license  
(<https://creativecommons.org/licenses/by-nc-sa/4.0/>).

height of 171.6 cm (25 percentile for age). Skin lesions presented as nodular, painful, erythematous lesions spread asymmetrically on the extensor aspects of the lower limbs, suggestive of erythema nodosum. He also presented an area with a 2-3 cm maximum diameter on the inner aspect of the lower left leg, with inflammatory signs and poorly defined borders (figure 1, arrow). The rest of the examination was unremarkable. A left leg ultrasound revealed a heterogeneous hypoechogenic formation, suggestive of an inflammatory process involving a branch of the internal saphenous vein, showing signs of phlebitis. Subsequent Doppler ultrasonography revealed signs of an old occlusive VTE at the great left saphenous vein level. Blood analysis showed no alterations in erythrocyte, leukocyte and platelet count, erythrocyte sedimentation rate or protein C-reactive. Tuberculosis was ruled out. Faecal calprotectin was significantly elevated (775 ug/g). Abdominal ultrasound and entero-MRI showed increased thickness of the terminal ileum. These alterations prompted the realization of a colonoscopy that revealed serpiginous ulcers and a "cobble-stone" pattern of terminal ileum mucosa (figures 2 and 3). Terminal ileum biopsies were undertaken and confirmed the diagnosis of Crohn's disease. He began induction treatment with systemic corticosteroids for eight weeks and maintenance treatment with azathioprine 125 mg daily. Three months after the diagnosis, he was asymptomatic with complete resolution of the erythema nodosum lesions. Blood analysis showed no alterations, and faecal calprotectin levels had decreased to 157 ug/g.

**Figure 1:** Nodular and erythematous lesions spread asymmetrically in the extensive aspects of the lower limbs with an area with inflammatory signs and poorly defined borders, with about 2-3 cm of wide diameter, in the inner aspect of the lower left leg (arrow).



## Discussion

Extraintestinal manifestations can precede or be concomitant with the diagnosis of IBD and can significantly impact the quality of life of these patients.

EN is an inflammation of subcutaneous adipose tissue clinically characterized by tender, painful, erythematous nodules

**Figures 2 and 3:** Colonoscopic findings in the terminal ileum - confluent serpiginous ulcers, erosions and cobblestone pattern.



commonly located along the extensor surfaces of the lower extremities. [5,6] It is the most common dermatological manifestation of IBD, affecting about 5-15% of patients with Crohn's Disease and 2-10% of patients with ulcerative colitis.[7] It is estimated to affect 2-5% of children with IBD.[3] The clinical course of EN usually evolves in parallel to the IBD activity. However, it can present years before the diagnosis of IBD.[3,8] Treatment of the underlying IBD leads to complete resolution of the skin lesions without scars. In some cases, treatment with systemic corticosteroids or immunosuppressors may be needed.[4,7]

Patients with IBD are also at increased risk of developing VTE, a well-recognized complication in adults and a significant cause of morbidity and mortality. Studies suggest a risk of VTE two to three times higher compared to the general population, increasing to 15-fold during disease exacerbation. [2,5,8] This increased risk appears to be characteristic of IBD since it is not seen in other chronic inflammatory diseases such as celiac disease and rheumatoid arthritis.[2] In the pediatric age, this risk appears to be significantly lower, with an estimated incidence of 0.09% to 1.9%.[5] Pathogenesis of thrombosis in IBD is multifactorial and not fully explained. Several factors may contribute to a higher risk of VTE, such as active and more extensive disease, malnutrition, dehydration, hypoalbuminemia, surgery, corticosteroid therapy and the use of central venous catheters.[2,4,5] Due to the

lack of data, clinical guidelines regarding VTE prophylaxis in children with IBD are controversial.[8] The decision about VTE prophylaxis should consider patients' individual risk factors and the safety and efficacy of different prophylaxis regimens. In younger patients, particularly those without risk factors, the benefits of prophylaxis do not outweigh the risks.

EN is the most common skin manifestation of IBD, with a well-established relationship between these two diseases. Many other extraintestinal manifestations are described, occurring less frequently. The authors aim to bring awareness to the risk of VTE as a rare but non-negligible comorbidity of IBD. This was an uncommon initial presentation of Crohn's Disease since the patient had never reported any gastrointestinal symptoms. It is important to improve paediatricians' knowledge about all kinds of extraintestinal manifestations of IBD since they may guide them toward the correct diagnosis and allow the prompt initiation of treatment.

### Conflict of Interest

The authors declare no conflict or competing interests.

### Funding

The authors declare that no funds, grants, or other support were received during the preparation of this manuscript.

### References

1. Rosen, M. J.; Dhawan, A.; Saeed, S. A., Inflammatory Bowel Disease in Children and Adolescents. *JAMA Pediatr* 2015, 169 (11), 1053-60.
2. Cheng, K.; Faye, A. S., Venous thromboembolism in inflammatory bowel disease. *World J Gastroenterol* 2020, 26 (12), 1231-1241.
3. Diaconescu, S.; Strat, S.; Balan, G. G.; Anton, C.; Stefanescu, G.; Ioniuc, I.; Stanescu, A. M. A., Dermatological Manifestations in Pediatric Inflammatory Bowel Disease. *Medicina (Kaunas)* 2020, 56 (9).
4. Aloï, M.; Cucchiara, S., Extradigestive manifestations of IBD in pediatrics. *European Review for Medical and Pharmacological Sciences* 2009, 13, 23-32.
5. Mitchel, E. B.; Rosenbaum, S.; Gaeta, C.; Huang, J.; Raffini, L. J.; Baldassano, R. N.; Denburg, M. R.; Albenberg, L., Venous Thromboembolism in Pediatric Inflammatory Bowel Disease: A Case-Control Study. *J Pediatr Gastroenterol Nutr* 2021, 72 (5), 742-747.
6. Trapani, S.; Rubino, C.; Lodi, L.; Resti, M.; Indolfi, G., Erythema Nodosum in Children: A Narrative Review and a Practical Approach. *Children (Basel)* 2022, 9 (4).
7. Rogler, G.; Singh, A.; Kavanaugh, A.; Rubin, D. T., Extraintestinal Manifestations of Inflammatory Bowel Disease: Current Concepts, Treatment, and Implications for Disease Management. *Gastroenterology* 2021, 161 (4), 1118-1132.
8. Kuenzig, M. E.; Bitton, A.; Carroll, M. W.; Kaplan, G. G.; Otley, A. R.; Singh, H.; Nguyen, G. C.; Griffiths, A. M.; Stukel, T. A.; Targownik, L. E.; Jones, J. L.; Murthy, S. K.; McCurdy, J. D.; Bernstein, C. N.; Lix, L. M.; Pena-Sanchez, J. N.; Mack, D. R.; Jacobson, K.; El-Matary, W.; Dummer, T. J. B.; Fung,

S. G.; Spruin, S.; Nugent, Z.; Tanyingoh, D.; Cui, Y.; Filliter, C.; Coward, S.; Siddiq, S.; Benchimol, E. I., Inflammatory Bowel Disease Increases the Risk of Venous Thromboembolism in Children: A Population-Based Matched Cohort Study. *J Crohns Colitis* 2021, 15 (12), 2031-2040.