

Colocutaneous fistula through ulcerative colitis and cancer to the pyoderma gangrenosum: a never-ending story for a single patient. Case report

C. EBERSPACHER, D. MASCAGNI, L. FRALLEONE, A. MATURO, F.M. DI MATTEO, F. DE CRISTOFARO, D. MERLETTI, A. SANTORO, P. MASCAGNI, S. PONTONE, D. PIRONI

SUMMARY: Colocutaneous fistula through ulcerative colitis and cancer to the pyoderma gangrenosum: a never-ending story for a single patient. Case report.

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Background. Inflammatory bowel diseases may be associated with many extraintestinal complications, that in some cases can represent the first onset of these disorders. In particular during the course of the disease, Ulcerative Colitis develops extraintestinal manifestations very frequently. One of the rarest is pyoderma gangrenosum, a noninfectious neutrophilic dermatosis, that can involve most commonly legs but also other parts of the skin or mucosas. It can be idiopathic or associated with gammopathies, vasculitis, chronic arthritis or, like in our case, with inflammatory bowel disease and malignancies.

Case presentation. A 38-year-old man was referred to our Department with a colo-cutaneous fistula in the left quadrant of abdominal wall. In the anamnesis he reported a trauma during a soccer match three weeks before. Through a CT scan and endoscopy with bio-

psy an inflammatory bowel disease with a segmental colitis and stenosis was diagnosed. After medical therapy, an initial radiological drainage and a period of parenteral nutrition, he underwent a left hemicolectomy. Despite the previous endoscopic biopsy the histopathological examination put in evidence not only inflammatory disease (in particular Ulcerative Colitis) but also a colorectal tumor pT4pN0. After the full recovery before chemotherapy he has developed on the chest and on the abdomen some painful nodules, with central necrosis, one of those in contact with one of the ribs. Through TC and RM it was impossible to understand the precise nature of these skin lesions. With biopsy a pyoderma gangrenosum was diagnosed and treated until complete resolution.

Discussion and conclusion. Management of inflammatory bowel diseases can be a true challenge, not only for the intestinal manifestations, but also for all the other features not related to gut. In some cases the same patient can develop many complications, such as malignancies or rare cutaneous diseases. Despite the initial surprise for such a weird evolution in a same patient, from fistula to inflammatory disease to cancer and finally to pyoderma gangrenosum, to face every single complication following consolidated diagnostic and pathological paths has been the correct strategy for controlling the disease.

KEY WORDS: Enterocutaneous fistula - Surgery - Ulcerative colitis - Inflammatory disease.

Background

Inflammatory Bowel Diseases (IBD), including two major forms Ulcerative Colitis (UC) and Crohn's Disease (CD), are very complex entities from their pathogenesis to the "remitting and relapsing" bowel inflammation that characterize them. CD causes transmural inflammation and can affect

any part of gastrointestinal tract, discontinuously, frequently with abscesses, fistulas and strictures (1-6). In UC inflammation is limited to the mucosa of the colon but the risk of cancer is high. Often the onset and the course can be atypical for the extraintestinal symptoms (7-9). In particular Ulcerative Colitis develops at least one extraintestinal manifestation in 6-47% of cases, such as arthritis, uveitis, pyoderma gangrenosum, sclerosing cholangitis (7, 10-12). They can be related both to the inflammation or to the autoimmunity in the pathogenesis, with an increase linked to the duration of IBD (1, 13-15). The skin involvement is frequent, especially

Department of Surgical Sciences, "Sapienza" University of Rome, Rome, Italy
Corresponding author: Daniele Pironi, e-mail: danielepironi@gmail.com

for CD, less common for UC, with prevalence between 5 and 11% (15, 16). One of the rarest is pyoderma gangrenosum, a noninfectious neutrophilic dermatosis, that can be associated with many systemic diseases not only IBD, but also with rheumatic, hematological diseases, or also with infections or cancer (metastatic adenocarcinoma of colon or carcinoïd tumor). Seventy-eight percent occurs in the legs, more rarely in other cutaneous sites (16-19). These lesions appear like nodules or plaques, with a central necrosis, the border is irregular and surrounded by erythema. They are very painful and sometimes a mucopurulent secretion can be observed.

We report a rare onset of UC with a colcutaneous fistula, initially attributed to a post-traumatic-abscess then to CD, and only after the surgical operation and the histopathological examination to UC and to a misdiagnosed adenocarcinoma of colon. Despite all the pre-operative exams, both endoscopic with biopsies or radiological, only after the microscopic exam it was possible to recognize the real pathological entity. The postoperative course was further complicated by an atypical localization of pyoderma gangrenosum, near ribs and on the abdomen near the scar of the previous fistula.

Case report

A 38-year-old man was referred to our Department for evaluation and management. He com-

plained of pain and a purulent secretion from an orifice in the left quadrant of abdominal wall. His past medical history was unremarkable. In the anamnesis he remembered a month before a trauma during a football game, then the start of abdominal pain till the onset of a swelling and then an orifice with previous clear secretion.

There was not fever, nor abdominal distension or diarrhea. Laboratory finding showed an elevated white cells count (12.200/ μ L), CPR levels (7 mg/dL) without other alterations. The abdomen CT scan and RM showed a homogeneous thickening of the left colon for 7 cm with a stricture of the lumen, many lymph nodes of large dimensions and an abscess with fistula communicating with the skin (Figure 1 A, B). A radiological drainage of the abscess, antibiotic therapy and parenteral nutrition were started. After two weeks the endoscopy showed an inflammation limited to the left colon with a stricture overcome with difficulty. It was not possible to identify the internal orifice of the fistula or to close it with a OTSC clip for the inflammation. The biopsy confirmed the IBD, with a high suspect of CD. Despite the medical therapy and the drainage, fistula remained productive and after a TC scan that confirmed substantially the initial aspects (Figure 2) it was decided to perform a left hemicolectomy with excision of the fistula and the involved skin. The postoperative (PO) course was regular, with the recovery of intestinal activity after three PO days, and dismissal in the 8th PO day. But histology showed

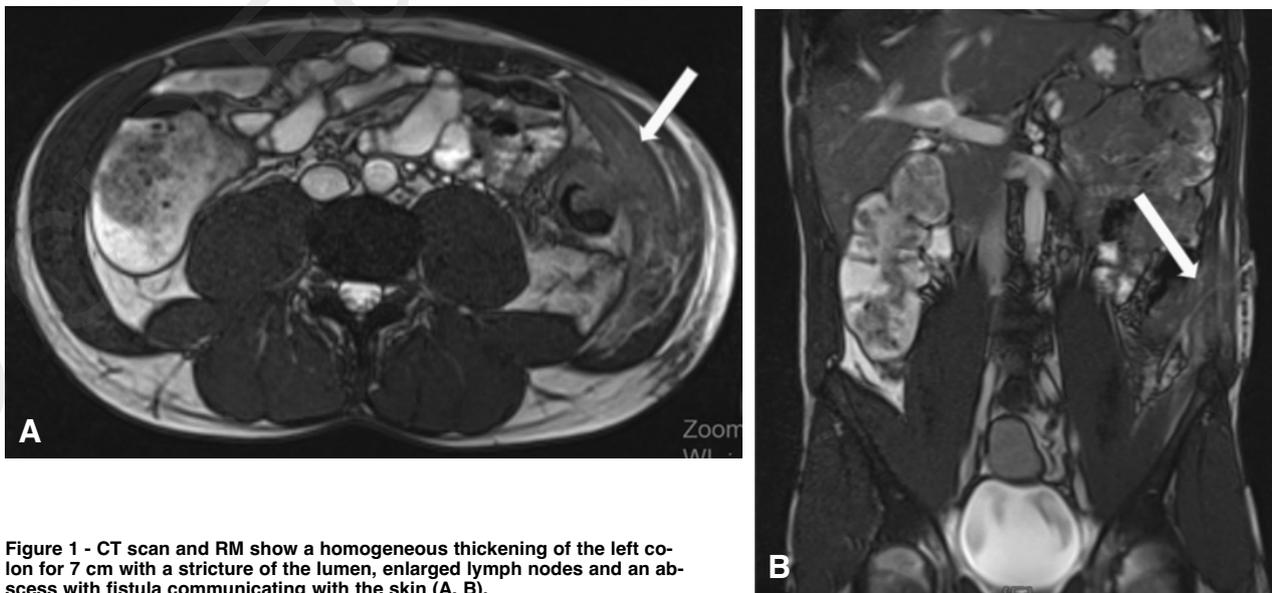


Figure 1 - CT scan and RM show a homogeneous thickening of the left colon for 7 cm with a stricture of the lumen, enlarged lymph nodes and an abscess with fistula communicating with the skin (A, B).



Figure 2 - TC scan confirms substantially initial aspect and fistula remained productive despite the medical therapy and drainage.

a totally unexpected entity: an adenocarcinoma of colon, pT4, for the involvement of the skin without pathological lymph nodes, but a substrate of UC with some polyps. According with the oncologist we decided to start the chemotherapy, but after four PO weeks the patient complained about the presence of four painful nodules three on the chest (Figure 3), strictly attached to the ribs and one near the orifice of the previous fistula. After one week the nodules presented a central necrosis, with mucopurulent content, and a peripheral erythema. RM showed en-

hancement of the nodules after administration of contrast with signal restriction in DWI (Figure 4): it was not possible to differentiate inflammatory skin alterations from metastasis. The excision of one of the nodules showed the typical neutrophilic infarction of pyoderma gangrenosum, in the vegetative form. The initial local therapy with topic corticosteroid was ineffective. Patient benefited from the use of Clofazimine, an iminophenazine that is mainly used in the treatment of leprosy and other mycobacterial diseases, for the anti-inflammatory efficacy rather than antibacterial activity (17-19), with disappearance of nodules in 4 weeks.



Figure 3 - Presence of painful nodules on the chest strictly attached to the ribs.

Discussion and conclusion

Diagnosis, therapy and management of IBD extraintestinal manifestations can be difficult. Sometimes the onset of IBD can be misdiagnosed because the first symptom is systemic and there are not evident bowel alterations. In our case even if the colocutaneous fistula was typical for IBD in an adult patient, the previous abdominal trauma and above all the absence of intestinal manifestations delayed the correct diagnosis (1, 6, 7). All the radiological and endoscopic exams (also with biopsy) did not clarify diagnosis, misdiagnosing not only UC instead of CD, but also an adenocarcinoma of colon (6-8, 14, 18). The inflammation can cover the alteration due to a tumor, in particular thickening of the intestinal wall, stricture and abscess with fistula can be attributed to CD instead of a cancer and a never before

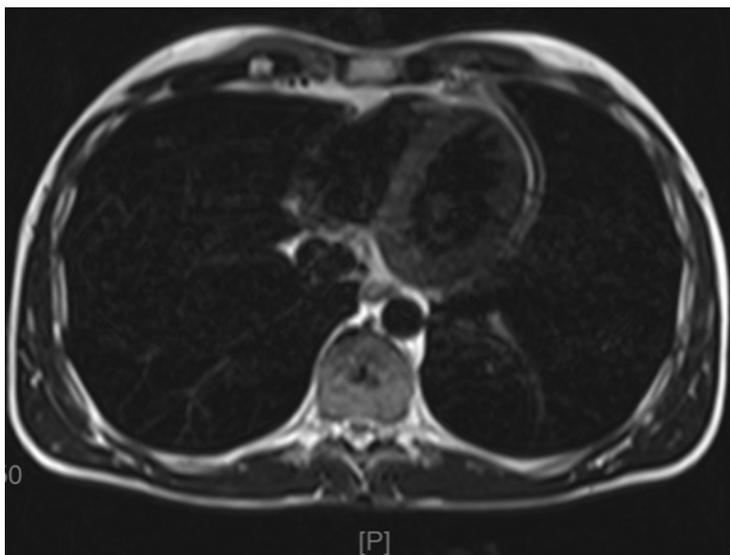


Figure 4 - RM shows an enhancement of the nodules after administration of contrast with signal restriction in DWI.

diagnosed UC (7-9, 13). Only the final histopathological examination revealed the correct diagnosis in a patient without remarkable anamnesis or previous symptoms.

In addition to the initial anomalous onset of the UC and the presence of an hidden adenocarcinoma of colon during the postoperative period an atypical form of pyoderma gangrenosum affected the same patient (7, 16). It is a neutrophil-predominant inflammation of the skin, frequently associated with IBD or cancer, but usually sited in the lower extremities. Also for this manifestation only the biopsy described exactly the nature of the disorder and it was possible to find the right therapy (13, 16, 17). Despite the initial surprise for such a weird evolution in a same patient, from fistula to inflammatory disease to cancer and finally to pyoderma gangrenosum, to

face every single complication following consolidated diagnostic and pathological paths has been the correct strategy to control the disease.

Declaration

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References

1. Marzano AV, Borghi A, Stadnicki A, Crosti C, Cugno M. Cutaneous manifestations in patients with inflammatory bowel diseases: pathophysiology, clinical features, and therapy. *Inflamm Bowel Dis.* 2014 Jan;20(1):213-27.
2. Eberspacher C, Mascagni D, Fralleone L, Grimaldi G, Antypas P, Mascagni P, Maturo A, Di Matteo FM, Pontone S, Pironi D. Pilonidal disease mimicking anterior anal fistula and associated with posterior anal fistula: a two-step surgery. *Case report. G Chir.* 2017 Nov-Dec;38(6):313-317.
3. Grimaldi G, Eberspacher C, Romani AM, Merletti D, Maturo A, Pontone S, Pironi D. Modified transverse coloplasty pouch: new reconstruction techniques after total mesorectal excision. Our experience. *G Chir.* 2017 Nov-Dec;38(6):285-290.
4. Mascagni D, Pironi D, Grimaldi G, Romani AM, LA Torre G, Eberspacher C, Palma R, Sorrenti S, Pontone S. OTSC®
5. Lauro A, Cirocchi R, Cautero N, Dazzi A, Pironi D, Di Matteo FM, Santoro A, Faenza S, Pironi L, Pinna AD. Surgery for post-operative entero-cutaneous fistulas: is bowel resection plus primary anastomosis without stoma a safe option to avoid early recurrence? Report on 20 cases by a single center and systematic review of the literature. *G Chir.* 2017 Jul-Aug;38(4):185-198.
6. Lauro A, Cirocchi R, Cautero N, Dazzi A, Pironi D, Di Matteo FM, Santoro A, Pironi L, Pinna AD. Reconnection surgery in adult post-operative short bowel syndrome < 100 cm: is colonic continuity sufficient to achieve enteral autonomy without autologous gastrointestinal reconstruction? Report from a single

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- center and systematic review of literature. *G Chir.* 2017 Jul-Aug;38(4):163-175.
7. Manser CN, Borovicka J, Seibold F, Vavricka SR, Lakatos PL, Fried M, Rogler G; investigators of the Swiss Inflammatory Bowel Disease Cohort Study. Risk factors for complications in patients with ulcerative colitis. *United European Gastroenterol J.* 2016 Apr;4(2):281-7.
 8. Cirocchi R, Cesare Campanile F, Di Saverio S, Popivanov G, Carlini L, Pironi D, Tabola R, Vettoretto N. Laparoscopic versus open colectomy for obstructing right colon cancer: A systematic review and meta-analysis. *J Visc Surg.* 2017 Dec;154(6):387-399.
 9. Boselli C, Cirocchi R, Gemini A, Grassi V, Avenia S, Polistena A, Sanguinetti A, Burattini MF, Pironi D, Santoro A, Tabola R, Avenia N. Surgery for colorectal cancer in elderly: a comparative analysis of risk factor in elective and urgency surgery. *Aging Clin Exp Res.* 2017 Feb;29(Suppl 1):65-71.
 10. Mascagni D, Pironi D, Pontone S, Tonda M, Eberspacher C, Panarese A, Miscusi G, Grimaldi G, Catania A, Santoro A, Filippini A, Sorrenti S. Total fistulectomy, sphincteroplasty and closure of the residual cavity for trans-sphincteric perianal fistula in the elderly patient. *Aging Clin Exp Res.* 2017 Feb;29(Suppl 1):101-108.
 11. Parisi A, Trastulli S, Ricci F, Regina R, Cirocchi R, Grassi V, Gemini A, Pironi D, D'Andrea V, Santoro A, Desiderio J. Analysis of long-term results after liver surgery for metastases from colorectal and non-colorectal tumors: A retrospective cohort study. *Int J Surg.* 2016 Jun;30:25-30.
 12. Pironi D, Vendettuoli M, Pontone S, Panarese A, Arcieri S, Filippini A, Grimaldi G. Use of the circular compression stapler and circular mechanical stapler in the end-to-side transanal colorectal anastomosis after left colon and rectal resections A single center experience. *Ann Ital Chir.* 2016;87:23-30.
 13. Timani S, Mutasim DF. Skin manifestations of inflammatory bowel disease. *Clin Dermatol.* 2008 May-Jun;26(3):265-73.
 14. Pironi D, Panarese A, Vendettuoli M, Pontone S, Candioli S, Manigrasso A, De Cristofaro F, Filippini A. Chronic radiation-induced proctitis: the 4 % formalin application as non-surgical treatment. *Int J Colorectal Dis.* 2013 Feb;28(2):261-6.
 15. Pontone S, Pironi D, Pontone P, Filippini A. Combined approach for the treatment of anorectal condyloma. Carbon dioxide laser excision and endoscopic argon plasma coagulation in a case report. *Ann Ital Chir.* 2011 Mar-Apr;82(2):159-62.
 16. Wong WW, Machado GR, Hill ME. Pyoderma gangrenosum: the great pretender and a challenging diagnosis. *J Cutan Med Surg.* 2011 Nov-Dec;15(6):322-8. Review.
 17. Bhat RM. Management of pyoderma gangrenosum—an update. *Indian J Dermatol Venereol Leprol.* 2004 Nov-Dec;70(6):329-35.
 18. Pironi D, Caruso F, Panarese A, Vendettuoli M, Mascagni D, Moraldi L, Filippini A. Chronic hidradenitis suppurativa in the inguinal, perineal and scrotal regions. A case report and review of the literature. *Ann Ital Chir.* 2010 Nov-Dec;81(6):465-70. Review.
 19. La Torre V, Manigrasso A, Candioli S, Pironi D, Belfiore C, Orsi E. A fecal fistula in patient who underwent an abdomino-perineal resection with a continent magnetic prosthesis: observations on an obsolete technique. *G Chir.* 2004 Nov-Dec;25(11-12):408-11. Italian.