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CASE STUDY

PYODERMA GANGRENOSUM AS THE ONLY MANIFESTATION OF ASYMPTOMATIC NEWLY DIAGNOSED NONSPECIFIC ULCERATIVE COLITIS. CLINICAL CASE

DOI: 10.36740/WLek202210144

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ABSTRACT

The aim: To study the clinical case data for the feasibility of the obligatory inclusion of endoscopic methods of the gastrointestinal tract examination in patients with pyoderma gangrenosum of an unknown etiology.

Clinical case: A patient under our supervision was with a not previously treated pyoderma gangrenosum of the shin skin. In the process of differential diagnostics by colonoscopic examination, nonspecific ulcerative colitis was diagnosed without clinical intestinal manifestation. A prescribed pathogenetic treatment of nonspecific ulcerative colitis led to the healing of the ulcer on the leg and induction of colitis remission. Thus, the first manifestation of asymptomatic colitis was pyoderma gangrenosum.

Conclusions: Patients with pyoderma gangrenosum should be aware of the possibility of NUC, even in the absence of gastrointestinal symptoms, to get an early diagnosis and adequate treatment, to avoid disease manifestation and further complications. The inclusion of obligatory endoscopic examination of the gastrointestinal tract will increase the diagnosis of the etiology of severe skin lesions and increase the detection of asymptomatic nonspecific ulcerative colitis.

KEY WORDS: pyoderma gangrenosum, nonspecific ulcerative colitis, inflammatory bowel diseases

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INTRODUCTION

Pyoderma gangrenosum (PG) is a chronic, painful, aggressive, recurrent, ulcerative progressive skin disease of unknown etiology. According to the scientific data, up to 50% of cases of PG are of idiopathic origin. Louis-Anne-Jean Brocq, a French dermatologist, was the first to report about a group of patients with typical symptoms of PG in 1908, naming it "phagedenisme geometrique". Its relation to nonspecific ulcerative colitis (NUC) was recognized by L.A. Brunsting twenty years later in 1930 [1, 2]. However, the frequency of diagnosed inflammatory bowel diseases (IBD) on the background of PG remains extremely low nowadays. PG is a rare but serious peptic ulcer disease, the treatment of which is mainly empirical, often ineffective and long-term, which can delay timely diagnosis and have serious clinical consequences [3-5].

The average prevalence is 3-10 cases per 1 million population [2]. PG is most often observed in middle-aged people. The etiological factors of PG have not been established. The pathogenesis is insufficiently studied [1]. Some authors believe that the pathogenesis is based on a defect in neutrophils' chemotaxis and their impaired reactivity. Immune response disorders and cross-reactions of autoantibodies to antigens common to the skin, intestines or joints are also considered [1]. Pyoderma gangrenosum (PG) occurs in the practice of doctors of various specialties: surgeon, dermatologist, rheumatologist, gastroenterologist, as it is often associated with diseases of the internal organs. Most often PG goes hand in hand with such diseases as nonspecific ulcerative colitis, ankylosing spondylitis, rheumatoid arthritis, Crohn's disease, myeloproliferative diseases. PG is also often associated with HIV, hepatitis, systemic lupus erythematosus, Takayasu's disease, and others. [2, 6-8].

During an active examination, NUC with equal frequency at men and women with a peak of age incidence between 25 and 54 years is diagnosed in 50% of patients with PG [3,4]. Conversely, 0.5 to 5% of patients with NUC have PG. 4 variants of pyoderma gangrenosum are described: ulcerative, pustular, bullous and vegetative. Ulcerative and pustular variant of PG are associated with inflammatory bowel disease. PG can occur before, during or after the onset of inflammatory bowel disease, and both diseases can occur independently of each other [2, 5, 9].

Ulceration begins as a follicular pustule with rapid growth, tissue necrosis, expansion of the affected area. Erythema with infiltration and swelling of the surrounding skin is observed. The edges of the ulcer are "eroded", of purple or bluish color. When a secondary infection joins, the ulcer is "covered" with pus and unpleasant odour [4].

The diagnosis of PG is a diagnosis of exclusion because of numerous causes of skin ulcers, including infections, tumors, vasculopathy, vasculitis, trauma, etc. [3,7]. Therefore, to improve the diagnosis of PG the diagnostic criteria by P. von den Driesh and later W.P. Su and others have been

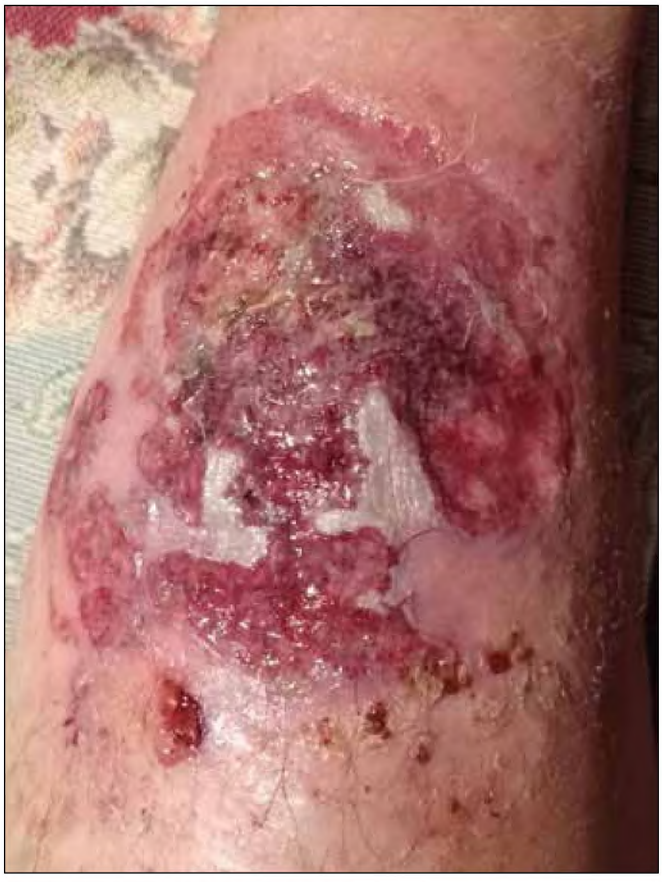

Fig. 1. Focus of pyoderma on the lower limb

offered [10, 11]. Two major diagnostic criteria are required to confirm the diagnosis of PG:

- rapid progression of painful, necrotizing skin ulcers with irregular, "eroded", raised edges;
- exclusion of other causes of skin ulcers;

and at least two minor criteria:

1) positive phenomenon of pathergy (appearance of painful ulcers due to minor injuries);
2) lattice scar;
3) systemic diseases associated with PG;
4) histopathological completion: "sterile" infiltration of the skin by neutrophils, +/- mixed inflammation, +/- lymphocytic vasculitis;
5) response to treatment (positive response to the use of systemic, immunosuppressive, steroid therapy) [2].

THE AIM

To study the clinical case data to assess the feasibility of obligatory inclusion of endoscopic methods of gastrointestinal examination in patients with pyoderma gangrenosum of an unknown etiology.

CLINICAL CASE

Patient M., 49 years old, was under our supervision. She had fallen ill 11 months ago with the appearance of pustular skin diseases in the form of paronychia of the fingers, boils, and foci of streptoderma on the face and neck. She was treated on an outpatient basis in another hospital of our region. 2 months ago, a lesion of skin up to 6 cm in diameter appeared on the shin, which progressively increased and ached, without the proper effect of local treatment. Given the latter, the recurrent nature of skin manifestations and the appearance of laboratory signs of moderate anemia, she consulted and was hospitalized. At the time of examination there was an ulcer defect up to 11 cm in diameter of dark cherry color with a red-black border, with eroded edges in some places and partial marginal epithelialization on the skin of the lower third of the right leg (Fig. 1). The vivid pain syndrome at the touch should be mentioned. The patient experienced general weakness and dizziness during exercise.

There is no pathology in the anamnesis of life. While being hospitalized it was objectively stated that the general condition of the patient is closer to the satisfactory one. Joints are visually unchanged, movements in the joints of the lower extremities are painless. The strength of the hands is preserved, the patient walks independently. Respiration is vesicular, with a hard tinge, wheezing is not heard. Heart tones are rhythmic, sonorous. Blood pressure is120/80 mm Hg. Art., heart rate is 68 beats / min. Abdomen is soft, neither painful, nor bloated. Pasternatskyi's symptom is negative on both sides. Physiological stools are regular.

Diagnosis at hospitalization was necrotic shin ulcer. There was suspicion for malignancy and moderate anemia.

The results of laboratory tests were:

General blood test: erythrocytes – 3.31 · 10 / l, hemoglobin – 90 g / l, platelets – 424 • 10 / l, leukocytes – 10.97 • 10 / l; leukocyte formula: rod-shaped – 5%, segment-nuclear – 68%, eosinophils – 3%, basophils – 0%, lymphocytes – 20%, monocytes – 4%, ESR – 38 mm / h.

Biochemical blood analysis: bilirubin – 10.5-0-10.5 microM / l, vol. etc. – 1.0, ALT – 0.25 mmol, AST – 0.25 mmol, total protein – 60.0 g / l, creatinine 76.0 micromol, urea – 4.3 mm / l. Ionogram: potassium – 3.5 mmol / l; sodium – 132 mmol / l.

Antibodies to: HIV1 / 2, HBsAg, hepatitis C, the causative agent of syphilis (Treponemae pallidi) – not detected. Glycosylated hemoglobin (HbA1c): 5.4 (4.5-6.2%).

Coagulogram: prothrombin time – 15.2sec; prothrombin index – 96%; total fibrinogen – 4.2g\l; fibrinogen B (-), ethanol test (-), INR 1.1.

General urine analysis: light yellow color, transparent, specific gravity – 1013, acid reaction, protein – 0.066, epithelium – 14-16 in p / s; leukocytes- 15-16 in p / z; mucus +; bacteria ++.

Electrocardiography was a variant of the norm.

Ultrasound examination of internal organs. The liver was slightly enlarged, due to the right lobe. The left lobe was 7.3 cm. Contours were clear, smooth. The parenchyma was homogeneous, medium echogenic. The bile ducts, portal veins and hepatic veins were not dilated. The gallbladder was elongated, with clear and smooth contours. The walls were compacted, not thickened, their filling was anechegenic bile. The pancreas

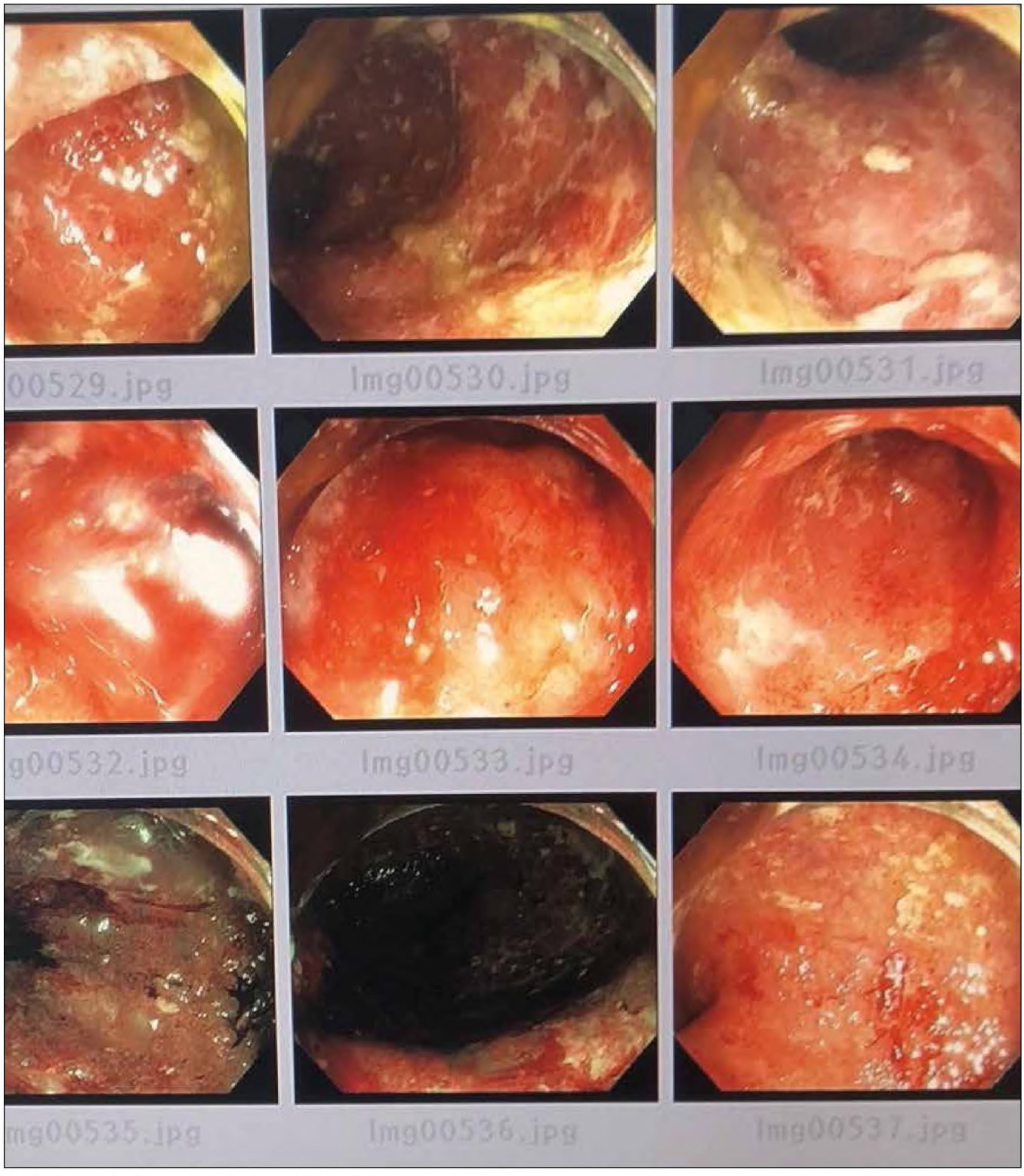

Fig. 2. Endoscopic picture of newly diagnosed non-specific ulcerative colitis

was of normal size. The structure was fine-grained, compacted. Echogenicity was average. Contours were clear, smooth. The spleen was not enlarged. The kidneys were of normal size, parenchyma was homogeneous, not thickened. There were salt inclusions in renal pelvis, more on the left side.

The duplex ultrasonographic examination of the vessels of the left lower extremity. No data on the violation of the main blood flow through the main arteries of the left lower extremity were found, as well as on deep vein thrombosis.

The results of the patohistological examination of the shin ulcer biopsy were as follows. Micro: connective tissue pieces with diffuse purulent infiltration, necrotic tissue, small, not numerous pieces of squamous epithelium. Pathohistological conclusion (diagnosis): inflammatory infiltrate.

During the period of hospitalization, comprehensive treatment was given, including antibacterial therapy (fluoroquinolone III generation – levofloxacin in combination with metronidazole), probiotics, fluconazole, nonsteroidal anti-inflammatory drugs, analgesic therapy (dexketoprofen intramuscularly in severe pain). Local care of the wound was also performed with a solution of betadine and Olasol. Occlusive hydrogel dressings were used to maintain a moist environment in the wound.

Given the anemia, fibrogastroduodenoscopy was performed. Erythematous gastropathy was observed without ulcerative and erosive defects.

Colonoscopy was performed. An endoscopic picture of nonspecific ulcerative colitis was diagnosed in the form of a smoothed vascular pattern, erosions and contact bleeding ulcers (Mayo index being 3 points) (Fig. 2).

A biopsy of the mucous membrane was performed. Micro: Nonspecific ulcerative colitis. Thus, the patient was diagnosed with nonspecific ulcerative colitis without clinical intestinal manifestation. The first sign of colitis was pyoderma gangrenosum.

The treatment was adjusted with 5-ASK (Salofalk) at a dose of 8g per day; Sorbifer 1 t 2 g per day.

After the 1st week of treatment, the patient's quality of life improved, which was marked with a significant decrease in the intensity of pain both when walking and when changing bandages. The wound surface also decreased. During the 2nd week the quality of granulation tissue improved and marginal epithelialization increased. On the 15th day the patient was discharged from the hospital for the further outpatient treatment. After 56 days (from the beginning of pathogenetic treatment) complete healing of the shin wound was noted.

After 2 months the control colonoscopy showed that Mayo index was 0 points. The dose of Salofalk was altered.

The given patient has been observed for 2 years. There was 1 recurrence of pyoderma which was successfully treated with Salofalk within 1.5 months at a dose of 3g per day. Intestinal manifestation of nonspecific ulcerative colitis was not observed during 2 years.

DISCUSSION

Pyoderma gangrenosum (PG) is considered to be a cutaneous manifestation of several systemic diseases. It is associated with: rheumatoid arthritis, myeloproliferative disorders, liver diseases, Wegener's granulomatosis, diabetes mellitus, and inflammatory bowel disease. In approximately 50% of cases, it is not possible to determine a concomitant disease, therefore it is called idiopathic pyoderma. Inflammatory bowel diseases are the commonest ones among systemic diseases, which accounts for 1/3 of the cases. Approximately 20% of patients who have skin lesions indicating pyoderma gangrenosum may have an inflammatory bowel disease.

The relationship between PG and the duration, the duration and severity of ulcerative colitis are controversial.

Pyoderma gangrenosum is believed to result from a reaction against intestinal disease antigens. The presence of bacterial antigens in the intestinal lumen and their absorption through the affected colonic mucosa can cause and prolong a local and systemic inflammatory response. It will result from the stimulation of cells of the immune system and the production of pro-inflammatory cytokines. The existence of an antigenic relationship between bacterial antigens and the mucosa of the colon, biliary tract, skin, and/or joints would make these organs real "antigens-targets" which would explain various manifestations.

Pyoderma gangrenosum manifests during an active intestinal disease in most of the cases described in the literature. It often coincides with an exacerbation of the previously diagnosed colitis. Intestinal symptoms precede or accompany pyoderma gangrenosum, and exacerbations can usually be associated with worse skin lesions. Nevertheless, pyoderma gangrenosum can occur at any stage of the disease without active inflammation, even after total colectomy. In the described clinical case, skin manifestations preceded the diagnosis of the initial ulcerative colitis. This fact confirms the importance to correlate both pathologies for active early diagnosis, even in the absence of clinical intestinal manifestations of the disease and early pathogenetic treatment.

The female patient has an ulcerative type of pyoderma gangrenosum, characterized by a deep and painful ulcer with a purple border and a necrotic purulent focus. This type generally affects legs, as in the patient under study.

When PG is associated with inflammatory bowel disease, therapy should be directed at the intestinal disease, the remission of which is accompanied by clinical improvement of skin lesions with mandatory local treatment aimed at preventing the development of secondary infectious lesions and complete healing of the wound.

In accord with the available literature, there are few descriptions of the occurrence of severe skin lesions in the manifestation of inflammatory bowel disease. This, together with the above presented clinical case, emphasizes the importance of the ratio of both pathologies for the purpose of early endoscopic diagnosis and pathogenetic treatment.

CONCLUSIONS

Patients with pyoderma gangrenosum should be aware of the possibility of NUC, even in the absence of gastrointestinal symptoms, to get an early diagnosis and adequate treatment, to avoid disease manifestation and further complications. The inclusion of obligatory endoscopic examination of the gastrointestinal tract will increase the diagnosis of the etiology of severe skin lesions and increase the detectability of asymptomatic nonspecific ulcerative colitis.

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