

CASE STUDY

ONSET OF NONSPECIFIC ULCERATIVE COLITIS POST COVID-19 (CASE STUDY)

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ABSTRACT

The patient suffered from a mild form of COVID-19 and was treated on an outpatient basis. According to the family doctor's prescription, she took Azithromycin 500 mg a day per os for 6 days, and then Ceftriaxone 1.0 g twice a day i.m. for another 6 days. Diarrhea appeared on the 10th day of treatment up to 10-15 times a day, a month later - blood admixtures in the stool appeared. The result was negative. Data from colonoscopy and histological examination of the intestinal mucosa and the clinical picture showed nonspecific ulcerative colitis, moderately severe. The patient started treatment with Salofalk first at a dose of 2 mg and then 4 mg per day. Due to the insufficient clinical effect, the patient was additionally prescribed Budenofalk in a daily dose of 9 mg with a positive clinical effect.

KEY WORDS: COVID-19, Clostridium difficile colitis, ulcerative colitis

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INTRODUCTION

On February 11, 2020, the World Health Organization gave the official name to the infection caused by the new coronavirus (SARS-CoV-2) – COVID-19 ("coronavirus disease 19"). Since then, there is daily monitoring of the epidemiology and clinical course, as well as the development and implementation of methods for the prevention and treatment of this disease.

Information on COVID-19 is constantly accumulating. SARS-CoV2 infection has been shown to mainly affect the upper airways and respiratory tract, while it often spreads beyond the respiratory system and can cause damage to other organs. In particular, a number of recent clinical reports indicate a significant damage to the gastrointestinal tract caused by SARS-CoV2 infection.

CASE REPORT

In March 2021, a 62-year-old woman sought medical advice with complaints of diarrhea 10-15 times a day with blood and mucus in more than half of the cases.

According to the patient, she got ill on December 15, 2020. Her body temperature was 38.5 °C for 2-3 days. There were no other signs of the disease. The family doctor verified the diagnosis of COVID 19 by detecting the genome of SARS-CoV-2 virus in nasopharyngeal lavage by reverse transcription polymerase chain reaction (RT-PCR), performed using the HEMA test system on

KING FISHER DO analyzer with a sensitivity of 5 copies per reaction. Wheezing was not heard in the lungs. Saturation according to the outpatient examination was 99%. The results of thoracic computed tomography are shown in Fig 1. The following antibiotics were prescribed: Azithromycin 500 mg per os for 6 days, then – the same duration of treatment with Ceftriaxone 1.0 g i.m. twice a day. After 10-12 days from the onset of the disease, diarrhea mixed with blood appeared 10-15 times a day. The patient was referred by a family doctor to a gastroenterologist, where she was prescribed Salofalk in granules 1 sachet once a day, Linex, Normagut 1 capsule twice, Creon 25,000 IU three times a day. The patient's condition did not improve: bloody diarrhea continued up to 10 times a day.

We know from the patient's life history that in 1979 she suffered from pulmonary tuberculosis, was treated in a dispensary and in follow-up for 10 years. No allergic reactions to medication mentioned. Concomitant diseases denied.

On examination: the patient is with a regular build, well-nourished. Weight – 64.0 kg. Height – 162 cm. BMI 24.4 kg/m². The skin is clean, pale pink, visible mucous membranes are clean. Peripheral edema is absent. Musculoskeletal and muscular system is normal. Upper and lower extremities are within normal limits. Head, eyes, ears, nose, oropharynx, neck, nervous system, lymph nodes without objective signs of pathology. Nervous

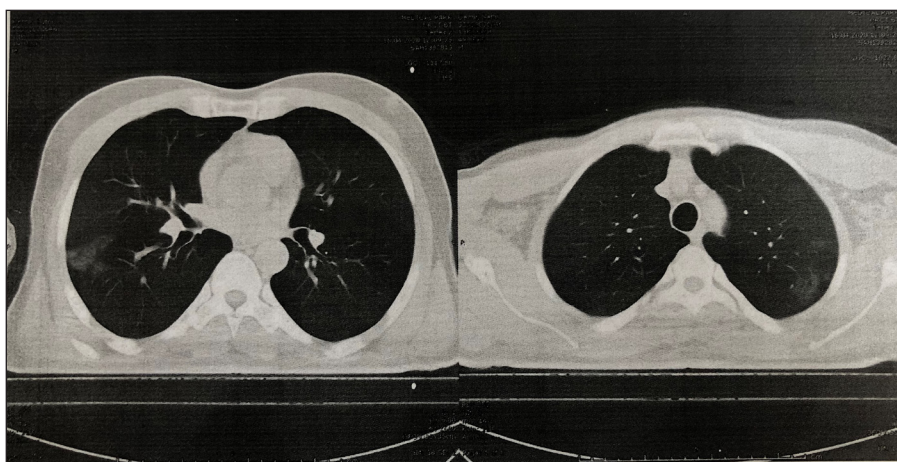


Fig. 1. Computed tomography of the lungs with COVID-19



Fig. 2. Colonoscopy from 17.02.2020. Signs of sigmoiditis

system is within normal limits. Evaluation of physical data was performed in a sitting position. Body T (axillary) is 36.5 °C. The thyroid gland is not enlarged. Breathing is clean, vesicular in the lungs. Respiratory rate – 17. Heart tones are rhythmic, clean, loud. Blood pressure and heart rate in a sitting position were 127/84 mm Hg. and 78 per minute respectively. Abdomen is of normal shape, freely involved in the act of breathing, soft, painful on palpation in the left iliac region. Liver is at the level of the costal arch. The kidneys are not palpable, Pasternak's symptom is negative, urination is not disturbed.

The laboratory and instrumental methods of examination were performed. Blood tests: HB 140 g/l, erythrocytes $4.7 \times 10^{12}/l$, leukocytes $4.9 \times 10^9/l$, platelets $246 \times 10^9/l$, Ht 0,41 V/V, blood formula: neutrophils abs $2,48 \times 10^9/l$, lymphocytes $1.62 \times 10^9/l$, monocytes $0.59 \times 10^9/l$, eosinophils $0.20 \times 10^9/l$, basophils $0.01 \times 10^9/l$. Biochemical parameters: glucose 4.8 mmol/L, protein total 70 g/L, albumin 47 g/L, bilirubin total 7 $\mu\text{mol}/L$, ALT 22 U/l, AST 25 U/l, creatinine 64 $\mu\text{mol}/L$, hsCRP 1.56 mg/L. PT 11.0s, INR 0.95, aPTT 31.0s.

Colonoscopy from 17.02.2020: examination was performed to the head of blind colon with intubation of

the terminal part of the small intestine. There is a small amount of light content in the lumen. A formation with a diameter of up to 3 mm was verified in the head of blind colon; a polypectomy was performed by the cold method and a biopsy slice was taken for histological examination (No.1). Changes of the mucous membrane 10 cm long with submucosal hemorrhages and small erosions were detected in the sigmoid colon at a distance of 40 cm from the anus. Biopsy slices (No.2) were taken from this zone. Erosions with submucosal hemorrhages (No.3) were also detected in the rectum. No pathology detected in the rectal ampulla. Conclusion: polyp of the head of blind colon. Sigmoiditis.

Histological examination of biopsy slices:

No.1. A fragment of the mucous membrane of the colon with a fragment of the proper muscle plate. The superficial epithelium is focally desquamated. The number of crypts in the own plate of the mucous membrane is reduced. In part of the crypts, there are crypts and crypt abscesses with focal destruction of crypts, atrophy of goblet cells. Singular lymphoid clusters with germinal centers are present in the proper muscle plate; diffuse lymphocyte-macrophage

infiltrate with granulocyte impurities around. Proper muscle plate is not thickened.

No. 2. Fragments of the mucous membrane. Crypts are unevenly distributed in the proper plate. Focal surface erosions, crypts and crypt abscesses. The own plate of a mucous membrane contains a diffuse lymphocyte-macrophage infiltrate with admixtures of leukocytes.

No. 3. Fragments of the mucous membrane. Crypts are unevenly located in the proper mucous plate. Focal crypts, crypt abscesses. Focal erosions of superficial epitheliocytes. Focal fibrosis in the proper mucous membrane.

Conclusion: changes in the mucous membrane of the colon, characteristic of nonspecific ulcerative colitis.

In order to rule out intestinal infection in the patient, in particular clostridial infection, a fecal examination was performed for STOOL CULTURE. Results: Salmonella No Salmonella Isolated, Shigella No Shigella Isolated, Yersinia No Yersinia Isolated, Campylobacter No Campylobacter Isolated, E. coli 0157 No E. coli 0157 Isolated. C. difficile Antigen/Toxin Negative for GDH Antigen and Toxin A/B, Ova & Parasite – No pathogenic Ova or Parasites detected. The results were negative. Calprotectin fecal was significantly elevated in the patient – 4738.29 mg/kg.

Therefore, the patient was diagnosed with: convalescence after Coronavirus disease, nonspecific ulcerative colitis, high activity, moderate severity (9 points on the Mayo Score).

Due to the ineffectiveness of previous treatment (only 1 g of Salofalk), the dose was doubled and Budenofalk was additionally prescribed at a dose of 9 mg per day. After 2 weeks, the patient's condition improved: the number of bowel movements decreased to 3-4, but blood admixtures in the stool remained. The patient continues to this treatment. Monitoring of the patient has been extended. During the second visit 2 weeks after, there was no blood in the stool and the number of bowel movements decreased to 2 per day.

The peculiarity of this case is the onset of nonspecific ulcerative colitis, provoked, possibly, by Coronavirus disease and/or unjustified long-term antibacterial therapy. Reports on the development of nonspecific ulcerative

colitis appeared in the first months of the Coronavirus pandemic [1]. The causative agent of Coronavirus disease SARS-CoV-2 has long been detected in biopsies of the stomach, duodenum, rectum and feces, even when it is no longer found in sputum, which proves the persistence of the virus in the digestive tract [2]. Recent publications suggest that the COVID-19 pandemic is a stressor that may be a provocative factor for the manifestation of latent ulcerative colitis [3]. Such patients should continue to be treated as they are treated without Coronavirus disease [4]. In both cases, according to an authoritative international document, treatment with 5-ASA medications should be continued. However, there are caveats that apply to patients taking systemic corticosteroids (more than 20 mg per day) who need to reduce their dose as soon as possible (10 mg weekly), and to patients on combination therapy (immunosuppressive with biopharmaceuticals), in which the dose of immunosuppressive drugs should be reduced. However, it is not yet clear whether treatment with Budesonide, anti-tumor necrotic drugs, Vedolizumab, or Ustekinumab should be stopped in asymptomatic patients. On the other hand, treatment with thiopurines (Azathioprine, 6-Mercaptopurine), Methotrexate, and Tofacitinib should be stopped in patients infected with SARS-CoV-2, although symptoms of NUC remain [4]. According to other recommendations, after two negative PCR tests, patients with NUC can continue its treatment [5].

CONCLUSIONS

Thus, we consider 2 options for a combination of nonspecific ulcerative colitis and Coronavirus infection: 1) when a patient with asymptomatic NUC has SARS-CoV-2 infection, which leads to the manifestation of inflammatory bowel disease; 2) when the Coronavirus disease causes the development of NUC. The shortcoming of our study was that we did not perform genetic testing in the diagnosis of ulcerative colitis in order to reveal which version of the development of events our patient had.

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Conflict of interest:

The Authors declare no conflict of interest.

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