

CHALLENGES IN THE DIAGNOSIS AND TREATMENT OF PATIENTS WITH COLORECTAL CANCER AND COVID-19 COINFECTION - CASE REPORT

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Case Report

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ABSTRACT

Patients with colorectal cancer (CRC) are more likely to become infected with COVID-19 than healthy individuals. The risk of complications and death in COVID-19 positive colorectal cancer patients is higher due to treatments that suppress the immune system.

We discuss a 71-year-old woman with a history of metastatic rectal cancer and underwent surgery and chemotherapy. With no clinical features of an acute abdomen or COVID-19 infection. Further researches are needed to rule out if COVID-19 can mask clinical and biological features presentation in cancer patients.

Keywords: metastatic colorectal cancer, COVID-19 infection, surgical treatment

INTRODUCTION

On March 12, 2020, SARS-CoV2 (Corona Virus) or COVID-19 infection was declared a pandemic by the World Health Organization [1]. SARS-CoV-2 has been shown to cause acute respiratory distress syndrome (ARDS) with airborne transmission. The alternative way of infection is thought to be faecal-oral due to the presence of ACE-2 SARS-CoV-2 receptors in the gastrointestinal tract and the establishment of viral RNA in saliva and faeces [2, 3, 4, 5].

According to data available in the world literature, PCR tests for COVID-19 were performed in patients with pneumonia from faecal samples in which viral RNA was detected. In a study by Wang W et al. (2020), fecal PCR tests showed viral presence in about 30% of patients [6]. The virus can be detected in the feces for a longer time compared to the nasopharynx and saliva, by Zhang J et al., (2020). The authors think that asymptomatic COVID-19 positive patients can be diagnosed by this test [5].

The observed gastrointestinal damage from COVID-19 was small vessel thrombosis and non-occlusive mesenteric ischemia. Bhayana R et al. (2020) believe that the causes of intestinal ischemia are many and varied, but also emphasize the role of COVID-19 in thrombus formation in small blood vessels, including the intestinal wall. Typical intestinal ischemia, thrombosis in small blood vessels and necrotized intestinal wall ("dead bowel") have been observed in operated patients [7].

Cancer patients are considered the most vulnerable group in the current pandemic with COVID-19, due to their immunocompromised status from the neoplastic process and the ongoing chemotherapy or radiotherapy [8, 9]. Data from several studies in China and Italy show that mortality in such patients is about 6%

and is higher than mortality in patients without established SARS Cov 2 - 2% [10,11]. The authors of two studies published data that patients with previous surgery and chemotherapy are at high risk for the development of severe infection, complications and death [12, 13].

CASE REPORT

We present a clinical case of a 71-year-old woman with metastatic colorectal cancer (CRC) known for about 2 years and polychemotherapy (PCT). The patient was referred for routine chemotransfusion for upcoming chemotherapy. The woman was with complaints of long-standing astheno-adyndamia and once registered temperature 37.1°C, without cough and runny nose, did not report the presence of abdominal pain, nausea or vomiting. From the physical status examination: woman of visible age around the actual, afebrile at the time of examination, pale skin and visible mucous membranes, mild abdominal pain, no evidence of peritoneal reaction and muscle defense, sluggish peristalsis. The laboratory tests shows anemic syndrome - hemoglobin level of 95 g/L and leukocytosis - $16.2 \times 10^9/L$, normal values of other blood parameters. COVID-19 tests were performed at the Emergency Medicine Department and negative serological test for SARS-CoV-2 antibodies (IgM and IgG) was detected. RT-PCR from nasopharyngeal secretion for COVID-19 was positive, established postoperatively.

Abdominal ultrasound found out the presence of circular heterogeneous fields on the anterior abdominal wall - parietal metastasis (Fig. 1); presence of pathological fluid in the abdomen - perihepatic (Fig. 2); dilated colon ascendens (Fig. 3) and colon transversum, pronounced aerocolia intralumenally (Fig. 4).

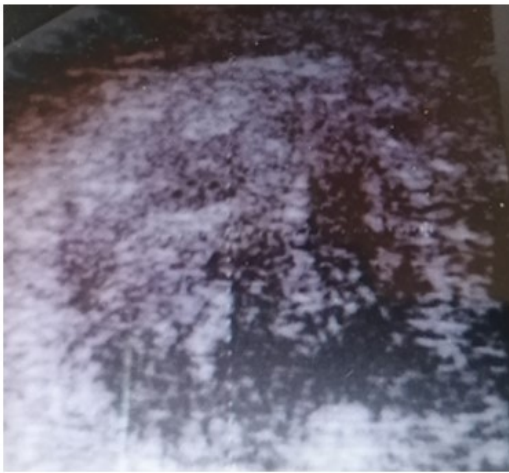


Fig. 1



Fig. 2



Fig. 3



Fig. 4

Presence of gas reverberations with impossibility to visualize large abdominal vessels - "vanishing vessels" phenomenon (Fig. 5); linear reflective, reverberating, hyperechoic shadow of free gas in the right abdominal flank, between the right kidney and the liver (Fig. 6); bright point-shaped or star-shaped hyperechoic foci with short distal reverberating hyperechoic shadow - "comet tail" phenomenon leading to perforation of a hollow abdominal organ (Fig. 7).



Fig. 5



Fig. 6



Fig. 7

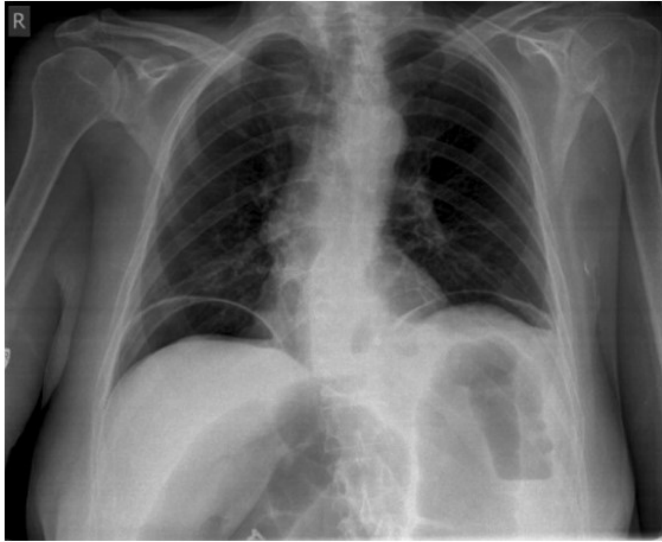


Fig. 8



Fig. 9

The patient underwent abdominal and chest radiography, in which sickle-shaped shadows of free gas were found under the two diaphragmatic domes (Fig. 8) and hydro-aerial shadows, as well as the absence of typical pulmonary radiological data for COVID-19 (Fig. 9).

After consultation with a surgeon, the patient underwent emergency surgery and intraoperatively were found: tumor formation of the abdominal wall, measuring about 5 cm, which is extirpated firmly; presence of feculent peritonitis involving the right abdominal half,

dilated caecum, ascending colon and transverse colon; perforation of the colon in the middle third of the ascending colon; secondary liver lesion about 0.5 cm in size, in the area of the fundus of the gallbladder; condition after anterior resection of the rectum with multiple retroperitoneal lymph nodes and fibrosis of the left colon (Fig. 10). A right hemicolectomy was performed, with an interruption of the intestinal passage about 20 cm from the ileocecal valve in a tight, and the proximal colon was interrupted at the middle-distal third border. We aspirated the faecal effluent and lavage was done. Ileo- and transverse stoma were done.

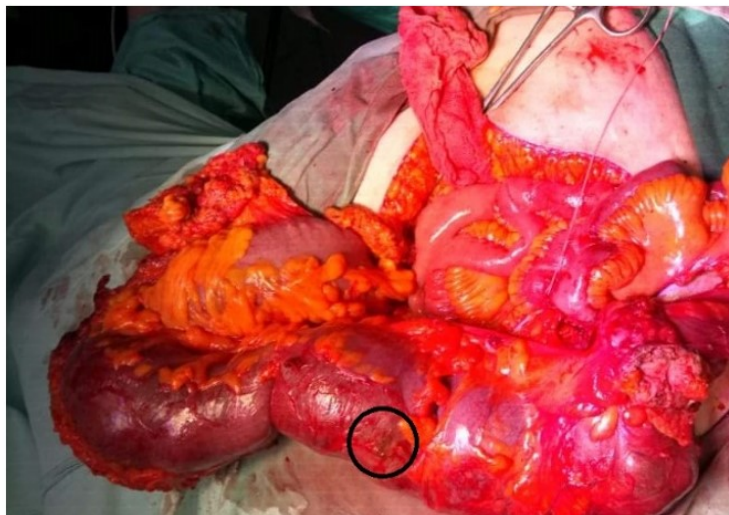


Fig. 10

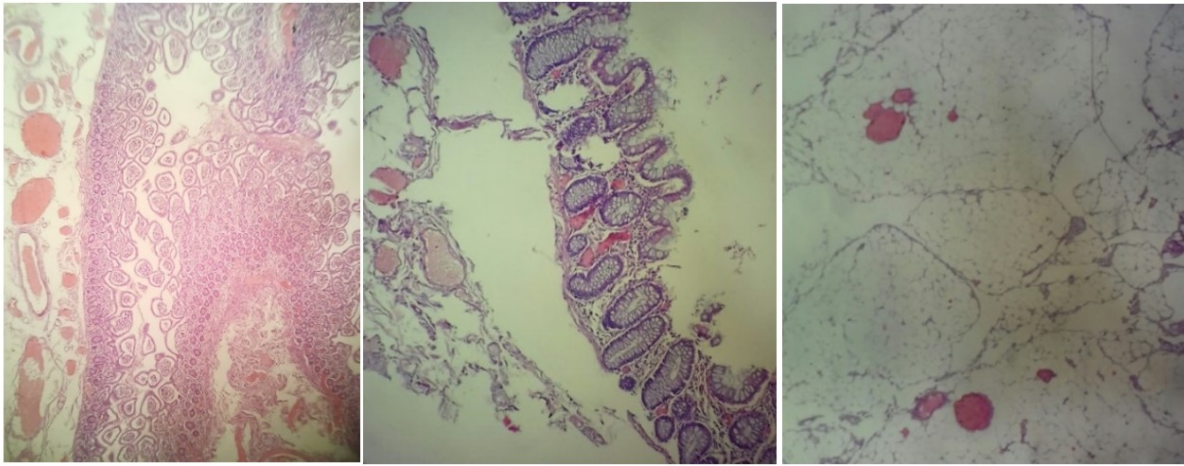


Fig. 11

Fig. 12

Fig. 13

The data from the histological examination are for adenocarcinoma of the colon G2; metastasis of the abdominal wall from adenocarcinoma, fibrous tissue and focal inflammatory infiltrates with infiltration of pericolic adipose tissue; resection lines are without tumor infiltration; chronic inflammatory infiltrates mixed with leukocytes in the intestinal wall. Histological preparations with data for thickening of the vascular wall, vascular stasis, hyaline emboli and areas of necrosis (involvement of blood vessels in the mucosa, submucosal and adipose tissue) (Fig. 11, 12, 13).

On the second day after surgery, the RT-PCR test was positive and the patient was hospitalized in a specialized COVID-19 ward, where the lethal outcome occurred.

DISCUSSION

Despite the small number of publications and experience worldwide regarding emergency patients with CRC and COVID-19 infection, it is known that these are patients with a potentially high risk of developing postoperative complications, severe COVID-19 and death. The prognosis is likely to depend on the type and stage of the cancer. Highleyman L., (2020) believes that patients with metastatic cancer have a six-fold higher risk of severe

complications than other cancer patients. COVID-19 positive patients and those receiving chemotherapy or radiotherapy are more at risk of developing acute respiratory distress syndrome, arrhythmias, shock, and acute renal failure [28].

According to Yang X. et al., (2020) mortality in patients infected with COVID-19 and colon cancer is about 6%, but is lower than in infected patients with diabetes (7%) and cardiovascular disease (11%) [29].

The case reported by us is of interest in several aspects: the patient has a history of previous surgery for metastatic rectal cancer (liver lesion, abdominal wall metastasis and peritoneal metastases); with several courses of PCT conducted in the previous months. There are no convincing clinical data for acute abdomen, but with instrumental data (ultrasound and radiological) for the presence of free gas in the abdomen. The patient was asymptomatic and with negative serology for SARS-CoV-2 infection, but with a positive COVID-19 PCR nasopharyngeal test, established postoperatively. Histologically adenocarcinoma was verified, ischemia of the intestinal wall and thrombi in the small blood vessels were found. Like Bhayana R et al., (2020) we believe that despite the many

and varied causes of intestinal ischemia, the possible involvement of COVID-19 in thrombus formation in the small blood vessels of the intestinal wall and its presumed role of the virus for the more severe course of the disease and the poor prognosis. Possible co-infection with COVID-19 should be suspected in all surgical patients. This is essential in everyday clinical practice, on the one hand due to the higher risk of severe postoperative complications and death in such patients, on the other hand to protect medical teams from contamination [30].

Individuals over 60 years of age, immunosuppressed and comorbid are known to be more at risk of COVID-19 infection [14]. Of the COVID-19 studies, about 1% of positive patients had a history of previous or concomitant gastrointestinal cancer. Patients with SARS-CoV-2 infection and gastrointestinal malignancy have a higher risk of developing ARDS, respectively higher morbidity and mortality [15, 16]. According to the Italian Institute of Health (Istituto Superiore di Sanità, ISS) from 2003, 72 patients (20.3%) died of COVID-19 with a history of cancer in the last five years. Higher mortality was observed in males [17, 18, 19].

The mechanism by which the virus acts in cancer patients is still unclear [14]. In some patients with CRC, after infection with SARS-CoV-2, the virus may "wake up" to trigger an immune response with clinical symptoms. In about 1% of cases infected with SARS-CoV-2, patients are asymptomatic [20]. Urgent surgery is required in 1 / 4–1 / 3 of CRC patients [21–23]. Most often, these are elderly and immunosuppressed patients, with advanced tumors and after chemotherapy and radiotherapy [22]. COVID-19-positive asymptomatic patients operated on for CRC are thought to have a higher risk of postoperative complications and a higher risk of death [24,25,26,27].

CONCLUSIONS

Colon cancer remains a topical and socially significant problem due to the fact that it is the third leading cause of death and the fourth most common neoplasm [31]. Published data from a small number of studies to date indicate increased morbidity and mortality in patients with CRC and coinfection with COVID-19. In such patients, the therapeutic approach must be individual and complex.

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