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Case Report

Emergency Surgery in COVID-19 Era: A Case of Complicated Parastomal Hernia

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Abstract

Introduction: The coronavirus disease pandemia created unedited challenges for surgical departments. Moreover it required a re-organization in surgical settings and plannings, because it can complicate the perioperative course with new challenges. This is a retrospective case report of a woman affected by COVID-19 pneumonia who developed intestinal occlusion due to complicated clogged parastomal hernia. She didn't develop perioperative complications in the COVID-19 outbreak and she was operated on for emergency surgery.

Presentation of Case: A 78-year-old woman, presenting with COVID-19 pneumonia developed an intestinal occlusion due to the clogged parastomal hernia associated with a subcutaneous abscess. She presented with a wall mass on the previous incision side of colostomy. Emergency surgical intervention was therefore performed, with partial lysis of tenacious viscero-visceral adhesions, a direct plastic of the abdominal wall defect and the packaging of a new colostomy on rod.

Discussion: The incidence of incisional hernia (IH) rely on many factors including sex, obesity, age, closure type, wound infection, abdominal distension. IH complicates from 10% to 15% of all abdominal surgeries (AS). Parastomal hernia (PSH) also is a common complication of a stoma surgery. The incidence range is between 32.3% to 93% with colostomy demonstrating a higher rate compared to ileostomy. The effects on a new COVID-19 infection or exacerbation of current infection related to the anesthesia, the surgical stress and the perioperative medications are unknown.

Conclusion: The aim of this report is to describe the clinical presentation and outcome of emergency surgical patient during the COVID-19 outbreak.

Keywords: 2019-nCoV; COVID-19; Incisional Hernia; Surgery; Emergency

Abbreviations

COVID-19: 2019 Novel Coronavirus; IH: Incisional Hernia; COPD: Chronic Obstructive Pulmonary Disease; CT: Computer Tomography; AS: Abdominal Surgeries; PSH: Parastomal Hernia; WHO: World Health Organization; EHS: European Hernia Society

Introduction

In December 2019, the outbreak of coronavirus disease (COVID-19) occurred in Wuhan City, Hubei province in China. The WHO declared it a Public Health Emergency of International Concern on 30th January 2020. Clinical symptoms of presentation are fever (43,8%), dry cough (67,8%), dyspnea and other non-specific symptoms (diarrhea, fatigue, headache, vomiting, myalgia, abdominal pain even anosmia, hyposmia [1]. On the 20th April 2020 have been reported more than 2.44 million cases and 165,000 deaths worldwide. At least 54.3% of the infected are male and the median age was 56 years. Many people were affected by a severe infection that consists in ARDS, acute kidney injury, septic shock and coagulation dysfunction. However, on the other hand, many cases resolved spontaneously [1,2].

Parastomal hernia (PSH) is a common complication after a stoma surgery. The incidence is between 32.3% to 93% with colostomy has higher rates of complication compared to ileostomy [3,4]. PSH negatively impacts the patient's QoL and causes difficulties with stoma dressing and leakage, increasing the risk for incarceration [4-6].

Many parastomal hernias are asymptomatic, clinical examination does not always reveal the presence of hernia, compared with an additional CT. The management of patients with a permanent stoma parastomal hernia includes stoma resisting or hernia repair. Resting is less commonly performed because the new stoma has the same risks of parastomal hernia, increased by the risk of ventral hernia at the site of the previous stoma [7,8].

Presentation of Case

The patient is a 78-year-old woman presenting with COVID-19 pneumonia who developed an intestinal occlusion due to the clogged parastomal hernia associated with a subcutaneous abscess.

She has a history of multiple comorbidities including atrial fibrillation, arterial hypertension and rectal cancer treated in 2015 through Hartmann procedure. Subsequently, the patient was diagnosed with liver metastases for which she underwent surgical resection, radiofrequency and twelve cycles of chemotherapy according to the FOLFOX+Bevacizumab protocol. In April 2020 she was admitted for COVID-19 pneumonia where she underwent a full course of antiviral therapy. The treatment with Baricitinib was started but it was early interrupted due to neutropenia treated with myelostimulation.

The patient was readmitted for an hard-elastic consistency swelling in the peristomal site associated with heat at the thermo-tact and superficial erythema without fever. The patient also experienced abdominal distension, pain and constipation. Her vital signs were stable and laboratory results were within normal (blood counts, renal function and procalcitonin within physiological limits, PCR 73). On the blood gas analysis there was no evidence of respiratory insufficiency and absence of significant alterations in the acid-base balance. On physical examination, it was found a treatable abdomen without signs of peritonism, it was painful and hyperemic on the peristomal area, with marked signs of inflammation in the left iliac fossa. CT scans of the thoraco-abdominal area has demonstrated multiple focal pulmonary hyperintensities with ground glass areas, some of a more consolidated appearance; some loops of the small intestine herniated subcutaneously nearly the colostomy which is associated with an abscess collection of 5x4 cm in size (Figure 1 and 2). The patient underwent a nasopharyngeal swab for SARS-CoV2, which was positive.

Figure 1 and 2: Abdominal computer tomography shows loops of the small intestine herniated subcutaneously nearly the colostomy with an abscess collection.

The therapeutic strategy was parastomal incision and a surgical toilette of the abscess. Access in the abdominal cavity and partial lysis of tenacious viscero-visceral adhesions was performed. Small defects of the intestinal wall were found and therefore sutured. Isolation and resection, through mechanical stapler, of the terminal colostomy and the ascending colon involved in the phlogistic process with its mesocolon. Then a direct plastic of the abdominal wall defect is carried on and a new colostomy was then packaged on a rod.

In the postoperative course the patient experienced peristomal cellulitis, treated with antibiotic and antifungal therapy based on the result of the cultural examination taken at the intervention (*Candida glabrata*). Respiratory exchanges remain good with no oxygen support. Three repeated checks of the nasopharyngeal swab were carried out negative. The patient was discharged on the fifteenth postoperative day.

Discussion

Incisional hernia (IH) is a very common complication of wound healing and it occurs in 10% to 15% of all abdominal surgeries (AS); in as many as one in three abdominal wall closures, the fascial layer of the wound will fail to consolidate properly [9]. It causes significant impairment in quality of life and depends on many factors including old age, sex, obesity, chest infection, suture type, abdominal distension and wound infection [9]. The rapid and precise identification of at-risk patients is very important to implementing effective strategies to reduce incidence IH and costs and the associated treatment morbidity [10]. For example a choice of stoma placement through versus lateral to the rectus sheath, transperitoneal versus extraperitoneal and correct sizing of the trephine could prevent the formation of PSH after surgery [5]. EHS also recommends the use of prophylactic mesh in performing a new stoma. A meta-analysis found rates of parastomal hernia from 16.4% in the mesh group versus 36.6% in the non-mesh group. Although a lower rate of parastomal hernia is reported with a retromuscular mesh than controls, without an increased rate of morbidity.

Mortality rate in emergency repair of PSHs results between 11% to 25%. In some retrospective studies, the use of mesh don't increase complication rate and there's no difference in data between the mesh and the non-mesh group except the time of surgery, which was longer in the mesh group [5,11].

In our case colostomy was not originally performed with parietal mesh reinforcement. A plastic without mesh was performed given the contaminated operative field due to the presence of the abscess.

The effects of surgery, the stress from anesthesia, perioperative medications, occurrence of respiratory distress or lung atelectasis on predisposition to infection of new COVID-19 are not known. While the fatality of COVID-19 infection is believed to be between 1 and 3%, most of the deaths occurred in elderly patients with concomitant cardiopulmonary comorbidities, obesity and diabetes [1,12,13]. It is believed that surgical patients may have a higher fatality rate than those with more severe comorbidities.

In our case the patient does not experience any postoperative respiratory distress, both because of the relatively small size of the parastomal hernia and the good pharmacological pain control which allowed an early mobilization of the patient.

Conclusion

COVID-19 pandemic has been a great challenge for surgical specialties, both in emergency and elective regimen. Every effort should be made to assess the feasibility of postponing surgical intervention until the patient is no longer potentially infectious or at risk for any perioperative complications. If an emergency surgical procedure is necessary (life threatening situation, high risk patient, haemodynamic compromise or shock), the emergency surgeon must supervise the implementation of safety measures in the operating theatre. Among laboratory confirmed cases of COVID-19, patients with any comorbidity yielded poorer clinical outcomes than those without, after surgery. The team performing emergency surgery in COVID-19 patients should minimise the risk of exposure to the virus by involving a minimal number of healthcare and the staff fully equipped with PPE [14].

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Data Statement

Data would remain confidential and would not be shared.

Declaration of Competing Interest

There is no conflict of interest.

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