

## CASE REPORT

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# An Overlooked Mechanic Bowel Obstruction Caused by Gallstone During COVID-19 Pandemic

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**ABSTRACT** During coronavirus disease-2019 (COVID-19) pandemic, as the healthcare system is overloaded, diseases which are rarely admitted and challenging to diagnose, can be overlooked. An 81-year-old man was admitted to emergency department suffering from nausea, vomiting and abdominal distention. During the examination period, he was diagnosed both bowel obstruction and COVID-19 pneumonia, incidentally and he was transferred to the COVID-19 unit to take medical therapy. Because of the intermittent symptoms and his co-morbidities, his therapy was focused on COVID-19 and a gallstone which caused ileus, was overlooked. The patient did very well and the stone left the bowel spontaneously, which might have needed surgery. As the world focuses on the COVID-19 pandemic, caution must be taken not to overlook other concomitant diseases. Patients must be treated by a multidisciplinary team with all aspects of the disease and healthcare professions must keep it in mind not to focus only to COVID-19 disease treatment.

**Keywords:** Gallstone ileus; bowel obstruction; COVID-19 pandemic; overlooked diagnosis

Mechanical bowel obstruction due to gallstone is a rare entity that constitutes the etiologic factor in 1-3% of ileus cases and the colonic obstruction is rarely presented in this heading.<sup>1,2</sup> When diagnosed, immediate operation is required.<sup>1,3</sup> During coronavirus disease-2019 (COVID-19) pandemic, some rare and difficult-to-diagnose diseases can be overlooked because of the overloaded health system. We present a case who admitted to emergency department with symptoms of intestinal obstruction and subsequently complicated by COVID-19 pneumonia, which caused delay in the diagnosis and treatment of gallstone ileus. The informed consent is obtained for the publication of the data from the patient.

## CASE REPORT

An 81-year-old man admitted to the emergency department suffering from nausea, vomiting and abdominal distention for 24 hours. He reported that he

had been unable to defecate for 3 days. He had a history of atrial fibrillation, hypertension and benign prostate hypertrophy. He had been using warfarin sodium, perindopril, metoprolol, silodosin and dutasterid each once a day for a while. On the physical examination, the bowel movements were slower than usual and abdominal mild tenderness was found without any rebound or guarding. Laboratory studies demonstrated a white blood cell count of 17.2K (normal range for age: 4-11K) with 88.6% of neutrophils (normal range for age: 43-75%), a creatinine level of 3.13 mg/dL (normal range: 0.5-0.9 mg/dL) and an elevated C-reactive protein level of 117 mg/L (normal range: <5 mg/dL). International normalized ratio (INR) was 2. Oxygen saturation was 95%. Plain abdomen graphy revealed air-fluid levels and abdominal computed tomography (CT) scan was planned. Thorax CT scan was also added to the study in order to exclude viral pneumonia which became a routine in this period of the pandemic in our country. CT scan

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was compatible with COVID-19 viral pneumonia and pneumobilia, distention in jejunal and proximal ileal segments (Figure 1). The patient was transferred to the pandemic unit of the hospital to continue his therapy. Meanwhile, he developed agitation and removed his urinary catheter and started to speak irrelevantly. The patient was consulted to psychiatrist and haloperidol was ordered for hyperactive delirium. In this period, he was administered the recommended antiviral therapy for COVID-19 infection (favipiravir 2x1,600 mg as loading dose, and 600 mg twice a day for 5 days as maintenance) according to the COVID-19 pneumonia therapy algorithm, levofloxacin was started and continued his drugs but warfarin.<sup>4</sup> Furthermore, on the 5<sup>th</sup> day of the hospitalization, hemoptysis occurred 4 to 5 times a day and INR was found to be as high as 8.1, unexpectedly. Vitamin K and fresh frozen plasma were administered and INR was normalized. No additional intervention was planned for the subileus, as the patient's complaints resolved spontaneously. At the 8<sup>th</sup> day of hospital admission, he again complained of nausea, vomiting and abdominal tenderness and revealed that he couldn't defecate for 3 days. After general surgery consultation, he was decided to have an abdominal CT scan showing colonic ileus due to gallstones with a diameter of 2.5x2.7 cm in the sigmoid colon. The new CT scan images were compared with former ones and it was noticed that the gallstone at the ileal segments was missed in the previous CT and not reported (Figure 1, Figure 2). Further questioning revealed that he had a history of abdominal pain 4 months ago and cholelithiasis was diagnosed, incidentally, and had never taken into consideration (Figure 3). Gallstone was accepted as "tumbling" under this circumstance and "wait and see" policy was planned and rectal enema was administered. Then, gallstone left the colon without any intervention at the same day. The patient was discharged 8 days later with nearly complete resolution of the COVID-19 pneumonia. Further intervention for cholecystectomy and fistula repair was planned.

## DISCUSSION

Gallstone ileus is a rare reason of mechanical bowel obstruction due to a biliary-enteric fistula. Majority of the cases are female and in particular, ages over 60

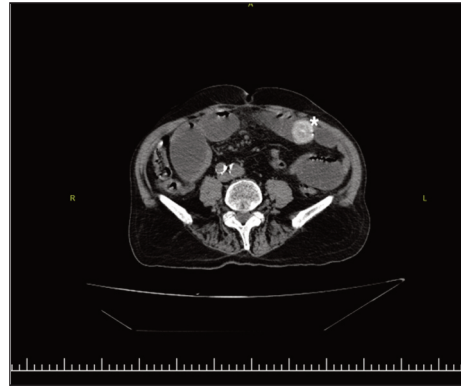


FIGURE 1: Stone at the ileal segments, which was overlooked, computed tomography image.

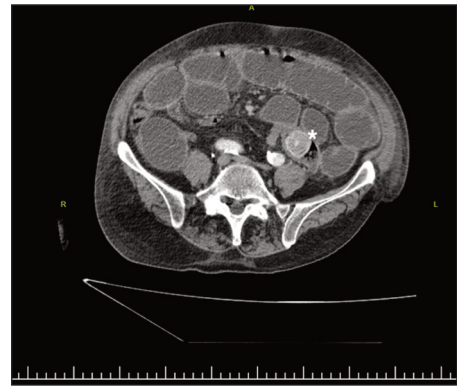


FIGURE 2: Stone at the sigmoid colon, computed tomography image.



FIGURE 3: Gallbladder stone, computed tomography image, 4 months prior to bowel obstruction.

with multiple co-morbidity.<sup>2,4</sup> Gallstone ileus diagnosis is challenging because of the non-specificity and intermittency of symptoms and is usually made within 3 to 8 days after first clinical onset.<sup>1,5</sup> CT scan has a sensitivity of 93% to diagnose the gallstone

ileus with these findings; 1) Gallbladder wall thickening, 2) Pneumobilia, 3) Intestinal obstruction, 4) Obstructing gallstone.<sup>1,5</sup> The pneumobilia is attributed to a biliary-enteric surgical anastomosis, an incompetent sphincter of Oddi, or a spontaneous biliary-enteric fistula in the literature but it was overlooked in the such case.<sup>6</sup> Since, the diagnostic methods are widely using, the most common form of diagnosis is the incidental finding of the stones during surgery in whom emergency laparotomy decision has been made. Stones smaller than 2 cm may pass through the ileocecal valve spontaneously.<sup>1</sup> But stones larger than 2.5 cm usually obstruct the terminal ileum or ileocecal valve level. Obstruction in the colon has been reported very rarely.<sup>7,8</sup> Fortunately, in this case, the ileocecal valve was not occluded by the gallstone, even though its diameter was greater than 2 cm. When the stone was detected, it was thought that biliary colic fistula had developed, but when retrospective examination was performed, the presence of the stone in the distal ileum in the previous CT scan images confirmed the biliary enteric fistula.

The best management option of the gallstone ileus, which generally occurs in the small bowel segments, is surgery. Cholecystectomy and fistula repair may be done in the same session with enterolithotomy or can be postponed according to patient's health status.<sup>2</sup> Conservative treatment is not a common option in the literature but endoscopy. Endoscopically removal of the gallstone, which stuck in the stomach or colonic segments, is reported.<sup>1,9</sup> Spontaneous passage of the gallstones through the bowel is called as "tumbling gallstone." There is no guideline about the operation timing or "wait and see" strategy or how long the patients can be followed up with plain abdominal X-rays or computed tomography whether gallstone is "tumbling." But it is clear that, the gallstone's diameter is not the issue for selection of the treatment option, because the widest reported gallstone which was removed endoscopically from transvers colon is in 17.7 cm diameter.<sup>9</sup> A meta-analysis also showed that non-operative treatment successfully treated 26% of the patients.<sup>8</sup> Thus, the management strategy is still debatable and depends on patients' status and the surgeon's personal experiences. In our experience, the patient would have been

promptly referred for surgery if early diagnosed, but "wait and see" approach was preferred due to a delayed diagnosis and a stone passing through the ileocecal valve. COVID-19 infection has an additional risk for gallstone ileus which has an overall 45-63% of operational morbidity and 7-18% of mortality alone.<sup>1,3</sup> This case is probably a good example whether gallstone ileus can be solved by conservative therapy. Delayed exploration for cholecystectomy and fistula repair is recommended to be done within 4 weeks to 4 months.<sup>1</sup>

During a COVID-19 pandemic, which affected all of the countries and the health care systems are overloaded and can't afford the demand, some diseases could be overlooked or lately diagnosed with several consequences and this situation is recently described as "secondary error" by Gandhi et al.<sup>10,11</sup> So, healthcare workers must keep in mind not to focus only to COVID-19 disease therapy, because delays on diagnosis of the concomitant diseases may cause additional morbidity or mortality risk.

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#### **Conflict of Interest**

*No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.*

#### **Authorship Contributions**

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