

## Hepatic venous outflow block caused by compressive fecaloma in a schizophrenic patient treated with clozapine

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### Summary

In Clozapine users constipation is among the reported side effects including agranulocytosis and myocarditis with prevalence rates ranging from 14% to 60%. In extreme cases this may lead to bowel obstruction and paralytic ileus which, if not detected and treated early, may lead to mortality up to 30%. We report the first case of hepatic outflow block secondary to compression of the liver by a distended colon upstream an impacted fecaloma in a 47-year old schizophrenic man treated by clozapine. Emergency sub-total colectomy was performed for pan-colonic ischemia. Surgery relieved the liver outflow block and was followed by uneventful outcome. Patients receiving clozapine should undergo routine laxatives and monitoring in order to limit the risk of clozapine-related ileus and bowel ischemia.

**Keywords:** Fecaloma, hepatic venous outflow obstruction, liver congestion

### 1. Introduction

Schizophrenia affects approximately 26 million people worldwide (1). Clozapine is one of the most effective antipsychotic drugs in refractory schizophrenia. In clozapine users constipation is among the most common side effects including agranulocytosis and myocarditis with prevalence ranging from 14% to 60% (2). In extreme cases this may lead to bowel obstruction and paralytic ileus which, if not detected and treated early may lead to mortality up to 30% of cases (3). We report here the first case of liver venous outflow block due to compression by a distended colon upstream impacted fecaloma in a schizophrenic patient treated with clozapine.

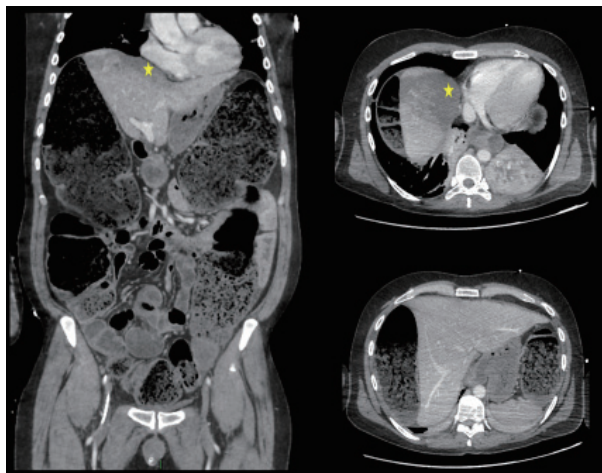
### 2. Case report

A 47-year-old schizophrenic man with schizophrenia, chronically institutionalized and treated with clozapine

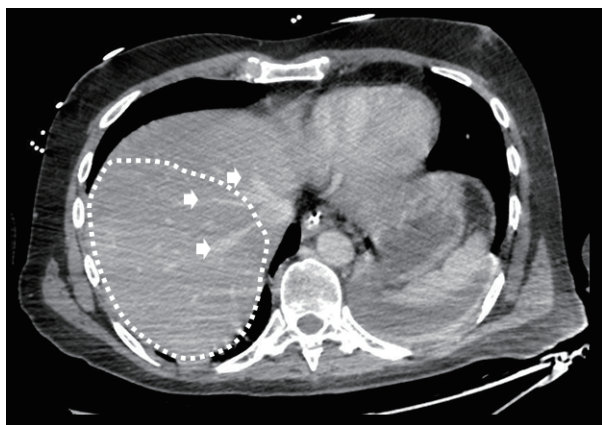
was seen at our emergency department for severe abdominal pain. He had a blood pressure of 90/60 millimeter of mercury (mm Hg) and appeared to be moderately dehydrated. He had suffered from constipation over the previous 10 years and had been on a high-fiber diet and laxatives. The patient was not under any other medication according to the accompanying nurse and he did not have any surgical history. At physical examination, the following parameters were noted: hypothermia (35.7°C), decreased blood pressure (90/60 mm Hg), and mild deshydration. Abdominal examination revealed severe and diffuse tenderness with muscle guarding. Impacted hard fecaloma deemed impossible to extract was found in the rectal vault at rectal examination. In the emergency room, he developed sudden feculent vomitus and inhalation. Following immediate resuscitation including respiratory intubation, abdominal computed tomography revealed largely dilated colon measuring 11 cm in diameter with fecal impaction. The liver was lifted upwards and compressed by the distended colon with subsequent Budd-Chiari syndrome: the inferior vena cava was compressed and the hepatic veins were poorly contrasted (Figure 1). Laboratory explorations showed liver insufficiency (prothrombin time = 55%, and factor V = 46%), cytolysis (aspartate aminotransferase = 141 International Unit/Liter (IU/L)

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**Figure 1.** Computed tomography revealed the presence of a giant fecaloma causing hepatic venous outflow obstruction by extrinsic compression (yellow star indicates the areas of liver congestion).



**Figure 2.** Computed tomography revealed that hepatic veins were patent and continuous after subtotal colectomy (white stars indicate the hepatic veins). The right liver, invisible on preoperative computed tomography becomes visible following decompression (white small lines).

(normal < 45 IU/L) and alanine aminotransferase = 104 IU/L (normal < 45 IU/L)) and leukocytosis (white blood cell count = 25,000/mm<sup>3</sup>). Emergency laparotomy was indicated for both peritonitis and mechanical acute Budd-Chiari syndrome. Subtotal colectomy for pancolonic ischemia was performed with double-end ileosigmoidostomy together with manual extraction of the remainder of the fecaloma from the sigmoid and rectum. The specimen examination showed lesions compatible with idiopathic megacolon including atrophy of the mucosa and submucosa and several foci of necrosis, and ruled out melanosis coli. The postoperative course was uneventful, liver function

tests returned to normal values, and liver imaging normalized (Figure 2). The patient was transferred day 21 to his psychiatric center. Digestive continuity was restored 3 months and the patient is currently treated with clozapine with a satisfactory bowel transit.

### 3. Discussion

To the best of our knowledge, this is the first case of severe clozapine-related constipation with massive colonic distension causing hepatic venous outflow block. As well it is the first case of Budd-Chiari syndrome with such mechanism (4). Constipation is among the most frequent side-effects antipsychotic therapy and ranks in the top 4 of clozapine with a prevalence ranging from 5% to 60% (2). Severe and even fatal complications of constipation have been reported in this setting. The most common causes of death include severe fecal impaction leading to bowel necrosis, sepsis, colonic perforation, and inhalation of feculent vomitus (3). Late diagnosis of these complications is due to the combination of an increased pain threshold (related to both the mental disorder and the adverse effects of treatment), and indifference and problems with adequate expressions of pain sensations. In conclusion, despite adequate diet and laxative prescription, constipation remains a serious side-effect of clozapine. Ongoing monitoring for constipation should be meticulously performed with each prescription and refill for clozapine.

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