

# Chilaiditi Syndrome: A Report of Two Cases

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## Abstract

Chilaiditi syndrome, is the interposition of the right colon between the liver and the right hemi diaphragm. Generally patients are asymptomatic but non-specific symptoms such as abdominal pain, distension, nausea, vomiting and constipation can be presented. The rare syndrome should be avoided confusion with more serious abnormalities such as perforated viscus, pneumoperitoneum and suphrenic abscess. Recognition of Chilaiditi syndrome is important because this rare entity can be misleading to the surgeons and mistaken for more serious abnormalities, which may lead to unnecessary surgical interventions. We presented two cases with Chilaiditi syndrome diagnosed from chest roentgenograms and abdominal computed tomography(CT) findings.

## INTRODUCTION

Chilaiditi syndrome is the interposition of the colon between the liver and the right hemidiaphragm. The incidence of this syndrome ranges from 0.025 % to 0.28 % and seems to increase with age. The sex ratio is 4:1, male to female [1]. Generally patients are asymptomatic but abdominal pain, distension, nausea, vomiting, anorexia and constipation can occur alone or in combination. The rare syndrome should be avoided confusion with more serious abnormalities, which may lead to unnecessary surgical interventions, such as perforated viscus, pneumoperitoneum and suphrenic abscess. Generally, patients are managed conservatively [1,2].

Herein, we represent two cases of Chilaiditi syndrome with abdominal pain and vomiting diagnosed from chest roentgenograms and abdominal computed tomography (CT) findings..

## FIRST CASE

A 44-year-old man was admitted with a 2-day history of abdominal pain, nausea, vomiting. Upon physical examination, his abdomen was distended without organomegaly and no rebound tenderness were detected on palpation. He was afebrile and hemodynamically stable. Laboratory studies, including whole blood count, blood chemistry and urine analysis were within normal ranges. Chest radiography of the patient showed gaseous accumulation under the right hemidiaphragm (Figure 1). Abdominal CT scan demonstrated hepatodiaphragmatic

interposition of the colon (Figure 2). The patient treated conservatively with enemas and parenteral electrolyte solution. His symptoms resolved fully within 12 hours.

## Figure 1

Figure 1: Chest radiography demonstrating gaseous accumulation under the right hemidiaphragm



**Figure 2**

Figure 2,4: Abdominal computed tomography scans showing loops of bowel in the upper abdomen between the liver and diaphragm

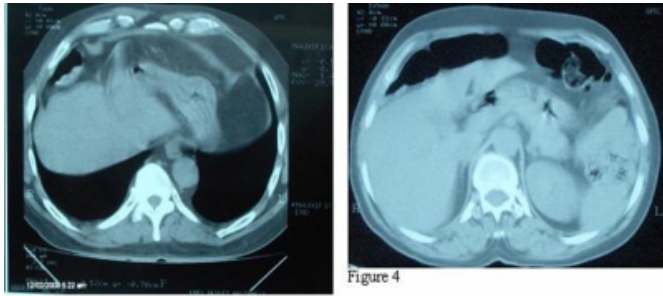


Figure 2

Figure 4

## SECOND CASE

A 53-year-old woman was admitted with a 3-day history of abdominal pain, nausea, vomiting and constipation. Her abdomen was mildly distended without hepatosplenomegaly and palpation of the right hypocondrium was painful and there was tympanic percussion but no rebound tenderness were detected on palpation. The patient was haemodynamically stable. Laboratory studies, including whole blood count, blood chemistry and urine analysis were unremarkable. An abdominal x-ray showed gas-filled loop of the colon under the right hemidiaphragm (Figure 3). Chilaiditi syndrome was then diagnosed by abdominal CT (Figure 4). The patient treated conservatively with nasogastric decompression, enemas and parenteral electrolyte solution. Her symptoms resolved fully within 24 hours.

**Figure 3**

Figure 3: An abdominal x-ray revealing the elevation of the right hemidiaphragm caused by the presence of the dilated colonic loop and gas accumulation



## DISCUSSION

Hepatodiaphragmatic interposition of the intestine known as Chilaiditi sign/syndrome. It has been proposed that the term “Chilaiditi sign” be used in an asymptomatic person and “Chilaiditi syndrome” in symptomatic patients [3]. It is a rare and often asymptomatic anomaly, typically diagnosed as an incidental radiographic finding [4].

Predisposing factors for Chilaiditi sign/syndrome are not clear, but may include increased colonic mobility, chronic constipation, lax suspensory ligaments and phrenic nerve injury [5].

In our cases, the presenting symptoms were right upper quadrant pain and vomiting which occurred particularly after meals. These symptoms were diminished with bed rest in the supine position. The second case had chronic constipation in his history and one of the striking findings in her abdominal x-ray were the gas-filled stomach and dilated loop of transverse colon with the presence of haustral folds (Figure 4).

Colonic interposition can be diagnosed from chest or direct abdominal roentgenogram, abdominal ultrasound and computed tomography findings. It is important to distinguish gas-containing bowel loops between the liver and right hemidiaphragm from other significant pathological conditions such as perforated viscus, subdiaphragmatic abscess, pneumoperitoneum, posterior hepatic lesions and Morgagni hernia which require surgical operations [6,7]. In

most instances, the hallmark of therapy is conservative and consists of bed-rest, fluid supplementation, nasogastric decompression, enemas, high-fiber diets and stool softeners [8].

### **CONCLUSION**

Recognition of Chilaiditi syndrome is important because this rare entity can be misleading to the surgeons and mistaken for more serious abnormalities, which may lead to unnecessary surgical interventions. This rare entity should be suspected in patients with abdominal pain, vomiting and free air under the right hemidiaphragm in their chest roentgenograms, if patients have no acute surgical abdominal symptoms and abnormality, apparently in their clinical and laboratory examinations.

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