Case report

Chilaiditi Syndrome and Antropyloric Stenosis: A Case Report

Abstract

Pneumoperitoneum is commonly associated with visceral perforations and often requires urgent surgical intervention. However, certain conditions, such as Chilaiditi syndrome, can mimic this alarming sign without actual perforation. This case report explores the relationship between Chilaiditi syndrome and antropyloric stenosis, emphasizing the need for accurate diagnosis to prevent unnecessary surgical procedures. We discuss diagnostic strategies, the challenges in distinguishing true from false pneumoperitoneum, and the management of complex cases with comorbidities.

Keywords: Chilaiditi syndrome, pneumoperitoneum, antropyloric stenosis, diagnosis, gastrointestinal obstruction, surgical management.

Introduction

Pneumoperitoneum, the presence of free air within the peritoneal cavity, is a critical sign that typically suggests a perforated viscus, requiring urgent surgical intervention. In contrast, Chilaiditi syndrome, characterized by the interposition of the colon between the liver and diaphragm, may present with similar radiological signs without the presence of actual perforation (Kumar & Mehta, 2023). Chilaiditi syndrome is often asymptomatic and benign, but it can complicate the management of patients with underlying gastrointestinal conditions, such as antropyloric stenosis.

The importance of distinguishing between true pneumoperitoneum and false pneumoperitoneum is paramount, as it prevents unnecessary and potentially harmful surgical interventions. Several studies have highlighted the challenges in diagnosing Chilaiditi syndrome, particularly in patients with complex comorbidities that may complicate radiological interpretation (Lin et al., 2012). This report emphasizes the need for accurate and early diagnosis in order to avoid unnecessary surgical procedures and ensure appropriate management for patients presenting with these symptoms.

Case Presentation

A 68-year-old male patient with a history of antropyloric stenosis, diagnosed in 2022, was admitted in September 2023 with an episode of high intestinal obstruction. The patient also had a previous ulcer perforation repair and a history of chronic obstructive pulmonary disease (COPD). He was an active smoker, both of which contributed to increased intra-abdominal pressure, a potential risk factor for Chilaiditi syndrome (Rakotoarivony & Andriamiandrisoa, 2020).

Despite initial conservative management with bowel rest and nasogastric decompression, the patient developed worsening symptoms, including diffuse abdominal pain, nausea, bilious vomiting, and cessation of bowel movements 15 days after his initial presentation. Clinical examination revealed a soft, non-tender abdomen with signs of moderate dehydration and a midline laparotomy scar. An abdominopelvic CT scan revealed abundant pneumoperitoneum without intra-abdominal effusion, with colonic interposition between the liver and diaphragm, consistent with Chilaiditi syndrome.

The patient's obstructive symptoms persisted despite conservative measures, leading to the decision to perform surgical exploration. The surgery revealed no bowel perforation but identified a benign 2 cm bulbar stenosis. Given the patient’s complex gastrointestinal history, an omega-loop gastrojejunostomy was performed to bypass the stenotic area and restore normal gastric emptying. The patient recovered uneventfully, with early return of bowel function and adequate oral intake. He was discharged on postoperative day five without complications.

Discussion

Chilaiditi syndrome, characterized by the interposition of the colon between the liver and diaphragm, is often asymptomatic. However, it can complicate the management of patients with underlying gastrointestinal conditions. In this case, the patient’s history of antropyloric stenosis and COPD contributed to the development of Chilaiditi syndrome. Elevated intra-abdominal pressure, commonly seen in patients with chronic constipation, surgical adhesions, or colonic redundancy, may also exacerbate this condition.

The diagnosis of Chilaiditi syndrome remains challenging, as it can easily mimic other acute abdominal emergencies, such as perforated viscera, which typically necessitate urgent surgery. Radiological imaging plays a key role in differentiating between true and false pneumoperitoneum. While a plain abdominal X-ray may show subdiaphragmatic free air, the absence of peritoneal effusion and bowel wall thickening suggests Chilaiditi syndrome rather than perforation. CT scans are the gold standard for diagnosis, as they confirm the interposition of the colon and exclude other potential complications such as peritoneal inflammation (Karoui & Charachon, 2020).

Management of Chilaiditi syndrome typically involves conservative treatment with bowel rest, nasogastric decompression, and fluid resuscitation. Surgical intervention is generally reserved for cases complicated by volvulus, ischemia, or persistent obstruction (Le Quotidien du Médecin, 2019). In this case, the patient's underlying antropyloric stenosis necessitated a more aggressive surgical approach despite the presence of Chilaiditi syndrome. Surgical exploration confirmed no perforation but identified a benign stenosis, which required a gastrojejunostomy for optimal management.

The co-occurrence of Chilaiditi syndrome and antropyloric stenosis in this patient underscores the complexity of managing gastrointestinal disorders with overlapping pathologies. Accurate diagnosis and appropriate management are crucial in such cases to avoid unnecessary surgeries and ensure the best possible patient outcomes.

Figures

Figure 1: CT scan showing pneumoperitoneum with suspected perforation, demonstrating the presence of Chilaiditi syndrome.

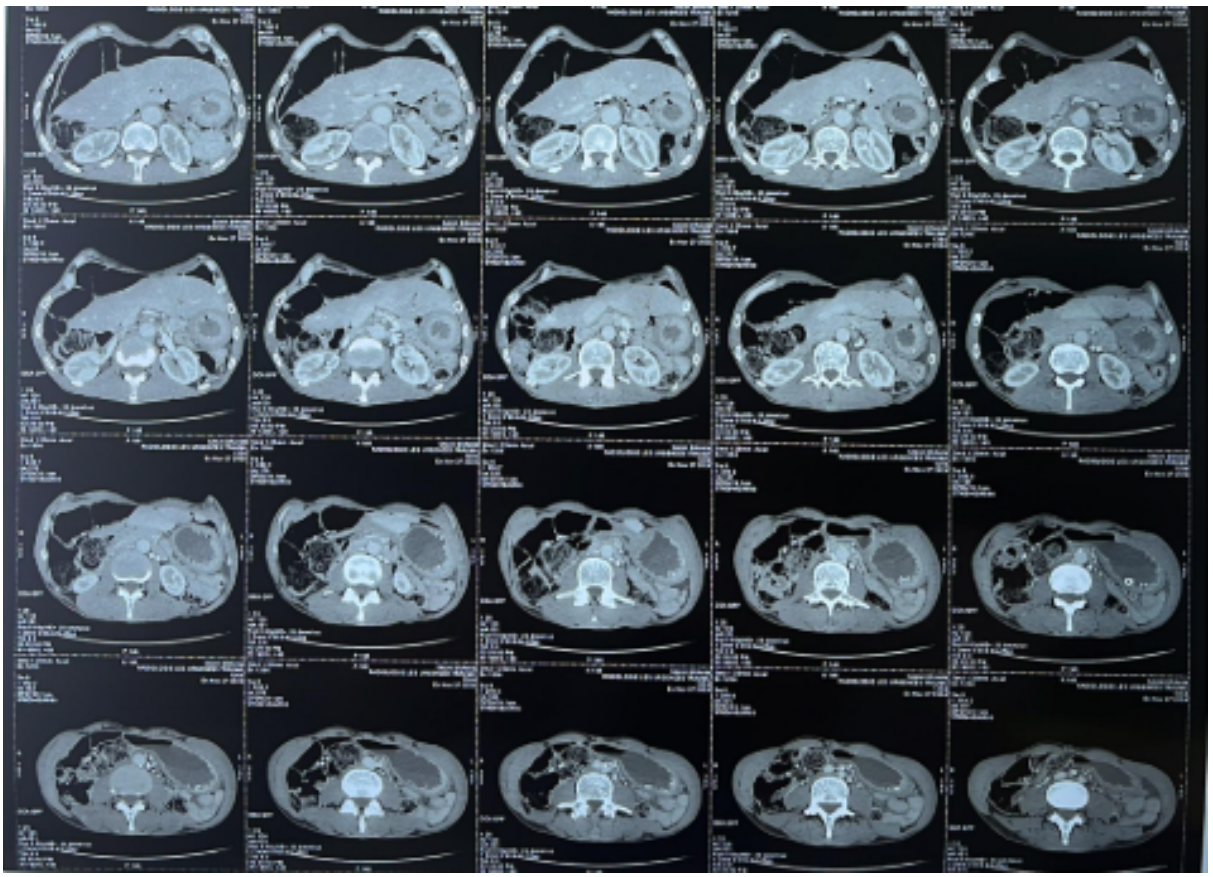

Figure 2: Stasis stomach and pyloric stenosis observed in the patient, highlighting key areas of concern.

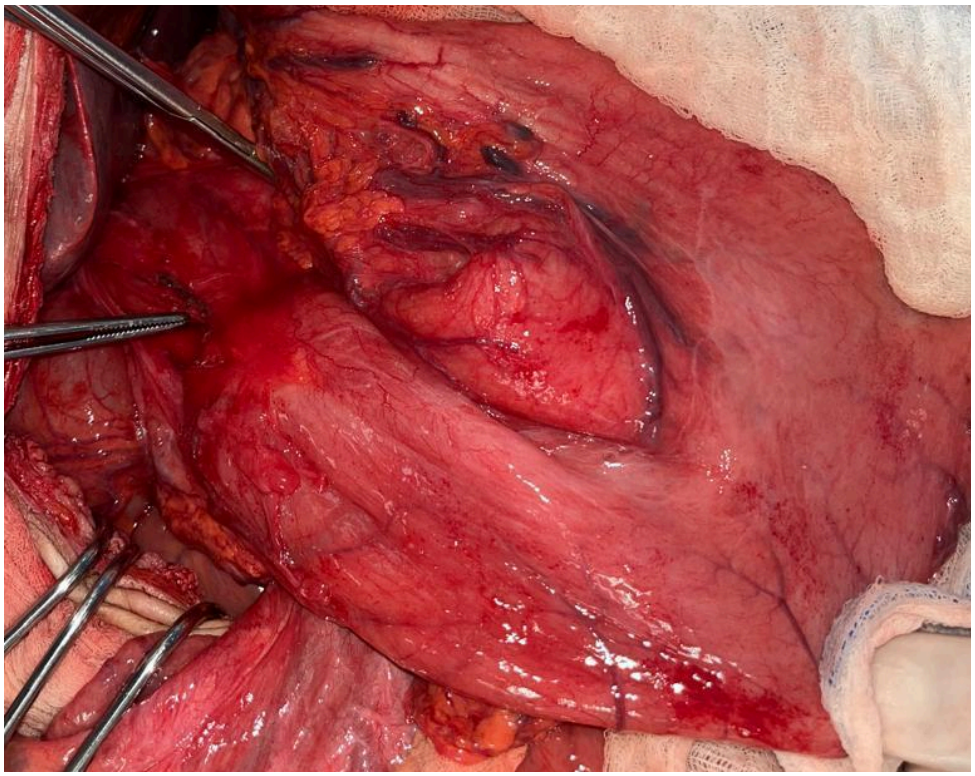

Figure 3: Pneumatosis of the colon, which mimics pneumoperitoneum, as seen in the patient's CT scan.

Conclusion

This case report highlights the rare but significant association between Chilaiditi syndrome and antropyloric stenosis, emphasizing the need for accurate diagnosis and a personalized management approach. While most cases of false pneumoperitoneum can be managed conservatively, coexisting digestive pathology, such as antropyloric stenosis, may necessitate more targeted intervention. The careful evaluation of such cases ensures that unnecessary surgeries are avoided, while providing effective treatment for significant digestive obstructions.

Consent

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

Ethical Approval

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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