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CHILAIDITI SYNDROME : CASE REPORT WITH REVIEW REFERENCE

General Surgery

Dr. Paresh Sharma* M.S. General Surgery Resident, Mahatma Gandhi Hospital, Jaipur. *Corresponding Author

Dr. Shlok Singhal M.D. Radiology, Mahatma Gandhi Hospital, Jaipur.

Vishvesh Sharma RUHS Medical college, Jaipur.

Dr. Sanjay Singhal Professor And Head, General Surgery Department , Mahatma Gandhi Hospital, Jaipur.

ABSTRACT

Chilaiditi syndrome is a rare clinical condition characterised by the interposition of the colon between the diaphragm and liver, which is radiographically referred to as Chilaiditi's sign. Although this sign is often asymptomatic, it can manifest as Chilaiditi syndrome when patients present with symptoms such as abdominal pain, bloating, nausea, vomiting, constipation, or, in rare cases, respiratory distress. Misdiagnosis is common due to its similarity to other conditions like pneumoperitoneum or diaphragmatic hernia. We report the case of a 58-year-old female presenting with shortness of breath while lying down, relieved in an upright position. She had a history of similar episodes over the past two years, with prior imaging revealing bowel loops above the liver, leading to an initial diagnosis of a right diaphragmatic hernia. On this admission, chest X-ray and HRCT confirmed the presence of bowel loops between the right diaphragm and liver, consistent with Chilaiditi syndrome. The patient, a known case of hypertension and diabetes mellitus, was managed conservatively with bowel rest, intravenous fluids, and symptom relief measures. She experienced significant improvement within one day and was discharged. Conservative management remains the cornerstone of treatment in most cases, involving nasogastric decompression, bowel rest, hydration, and stool softeners. However, surgical intervention is warranted in cases of bowel obstruction, ischemia, volvulus, or perforation. Advances in surgical techniques, such as laparoscopic colopexy and hepatopexy, offer effective solutions for persistent or severe cases. Early recognition and appropriate management are essential to prevent unnecessary invasive procedures and complications. This case highlights the importance of considering Chilaiditi syndrome in patients with atypical respiratory symptoms and supports the role of imaging in its diagnosis. A tailored approach, balancing conservative management and surgical intervention based on symptom severity a

KEYWORDS

Chilaiditi syndrome, Chilaiditi's sign, colonic interposition, respiratory distress, bowel rest, diaphragmatic hernia, conservative management, surgical intervention.

INTRODUCTION

Chilaiditi syndrome, first identified by Greek radiologist Demetrious Chilaiditi in 1910, is an uncommon condition in which the colon is situated between the diaphragm and liver, a phenomenon known radiographically as Chilaiditi's sign. male-to-female ratio of 4:1 has been reported with higher occurrence in older adults. Although Chilaiditi's sign is frequently asymptomatic, it can develop into Chilaiditi syndrome when clinical symptoms arise, including abdominal pain, bloating, nausea, vomiting, constipation, and, less frequently, respiratory distress or cardiac arrhythmias. Diagnosis can be difficult due to its similarity to other conditions like pneumoperitoneum or diaphragmatic hernia. Typically, conservative treatment—such as bowel rest, laxatives, and nasogastric decompression—is adequate, but surgical intervention may be required for cases involving bowel obstruction, ischemia, or perforation. Recent advancements in surgical methods, including laparoscopic colopexy and robotic-assisted techniques, provide effective solutions for persistent cases[1,2]. Early detection and appropriate management are essential to prevent unnecessary invasive procedures and complications.

Case Report

Patient Information: Patient Tara Sharma, 58 years , female, resident of Jaipur, housewife by occupation

Presented with chief complaint of Shortness of breath on lying down since past 3 days was apparently alright 3 days back when she developed shortness of breath while lying down, which was sudden in onset. symptoms were relieved on sitting and standing, while aggravated on lying down.

There were no associated symptoms like nausea, vomiting, fever, abdomen distention, night sweats, radiating pain.

Patient had similar episodes of shortness of breath two times since past 2 years.

First episode was 2 years back in January 2022, when she developed sudden episode of shortness of breath for which she was hospitalised, a chest X ray was done in supine and erect posture, which showed bowel loops above liver . A CT scan was done which showed bowel loops & a part of liver in right thorax with a diagnosis of Right Diaphragmatic hernia was made in outside hospital.

Patient was planned for Laparoscopic repair of right diaphragmatic hernia, But patient had uncontrolled diabetic for which optimisation was done, but patient denied to operate because of symptomatic relief during time of admission,

A similar episodes was present 1 year back when patient was admitted and was discharged after symptomatic relief as per patient's request .

Patient is a known case of hypertension since past 2 years and on medications Prazosin, metoprolol & amlodipine

Patient Is A Known Case Of Diabetes Since Past 5 Years And On Oral Anti Diabetic Medications : Glicazided, metformin , sitagliptin & dapaglifozil

Patient had taken nebulisation with doulin and budacort with antacids for symptomatic relief.

Physical Examination:
Patient's vitals were

BP: 164/84 mmhg, pulse : 74 beats/ min , saturation of 94 % on room air

Abdominal Exam Findings: Abdomen was soft, no scar mark , scaphoid abdomen , no engorged veins/ visible pulsation seen on abdomen , Bowel sounds were present on right chest over lower lobes,

Imaging:

Chest X ray Supine: bowel loops under right dome of diaphragm,
HRCT Scan: Bowel loops present in between Right dome of diaphragm and liver, No eventration of right hemidiaphragm s/o : Chilaiditi syndrome

Laboratory Tests: All blood investigations were within normal parameters

Initial Management: Patient was kept NBM with CRTS and I/v fluids were started , Strict intake / output monitoring was done Patient was relieved after 1 day of conservative management

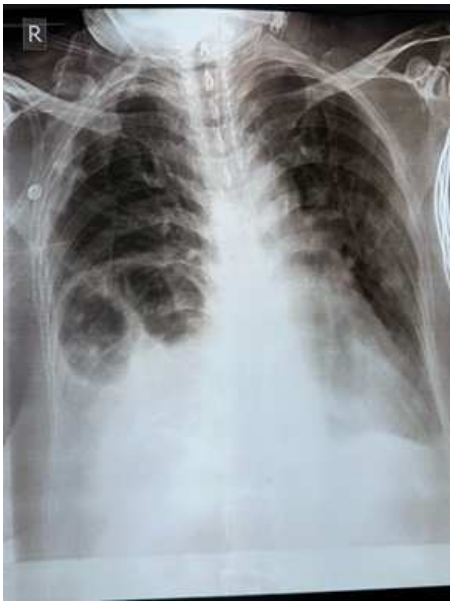

Figure 1: Chest x-ray, showing dilated bowel loops under the right dome of diaphragm

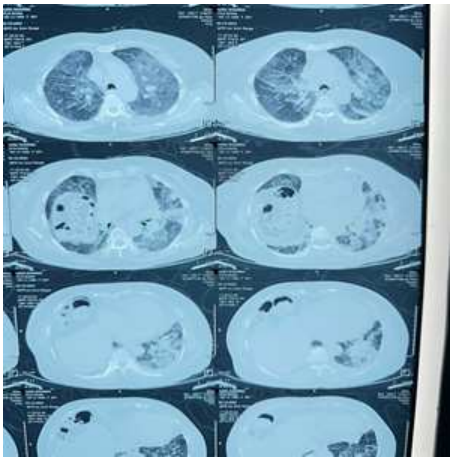

Figure 2 : CT scan shows bowel loops under right dome of diaphragm and liver without any eventration of right diahragm

Literature Review

The most common symptom of Chilaiditi syndrome is abdominal pain. Most cases are diagnosed using CT scans, which reveal distension of the colon interposed between the liver and the diaphragm. Rare presentations include right lobe liver atrophy or congenital anatomical anomalies, such as a split liver. Conservative treatment options include fasting, nasogastric decompression, fluid resuscitation, enemas, and stimulation of peristalsis. Surgical interventions may involve colopexy to fix the colon in place, partial colon resection (e.g., transverse colectomy or right hemicolectomy), hepatopexy to secure a displaced liver to the abdominal wall, or hepatopancreatic reattachment to prevent further colonic displacement.

DISCUSSION

Management of Chilaiditi syndrome is primarily conservative, involving nasogastric decompression, stool softeners and/or enemas, and intravenous hydration. While conservative treatment is typically sufficient, surgical intervention may be necessary in cases of intestinal obstruction, ischemia, or perforation. Rare but documented complications requiring urgent surgery include cecal and colonic volvulus, subphrenic appendicitis, internal hernia, and cecal perforation. In some instances, Chilaiditi syndrome may be the initial presentation of malignant tumours that require prompt medical or surgical intervention[3] Elective surgery can also be considered for persistent, unresolved symptoms. There is no definitive consensus on the optimal surgical approach to correct intestinal interposition; however, successful procedures reported in the literature include colon resection, hepatopexy, colopexy, right hemicolectomy, sigmoidectomy, and subtotal colectomy. Minimally invasive techniques, such as laparoscopic colopexy, have also been utilised and may be a viable option.

Chilaiditi syndrome is a multifaceted condition that can present with varying complications depending on the underlying pathology. The establishment of a standardised staging system, as described in this report, aims to guide the medical management of patients with Chilaiditi syndrome. This system ensures that treatment is tailored to the severity of the condition, improving patient outcomes by delivering appropriate and timely care.

Patients with mild symptoms occurring two to five times per year, or with radiological findings of a redundant colon, can be managed medically. Those experiencing symptoms two to five times per month, or showing radiological evidence of a redundant and distended colon, should be treated medically with consideration for surgical consultation. However, patients with severe symptoms occurring more than two to five times per week, or with radiological signs of a redundant colon and colonic ischemia, require surgical intervention.

Chilaiditi's sign is often an incidental radiological finding and can be overlooked if a detailed history and thorough clinical examination are not performed. Although Chilaiditi syndrome and its complications are rare, identifying affected patients is important to ensure proper management, address potential complications, and avoid adverse outcomes following medical procedures involving the anatomical regions.

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