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Case Report
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CASE REPORT: CHILAIDITI SYNDROME

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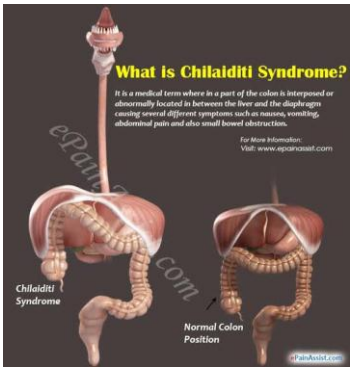
ABSTRACT

Chilaiditi syndrome is a rare condition characterized by the interposition of the large bowel between the liver and the right hemidiaphragm, visible on radiological imaging. It may present with nonspecific gastrointestinal and respiratory symptoms and is often mistaken for pneumoperitoneum, leading to unnecessary surgical intervention if not correctly identified. We report a case of 67-year-old male presented to the emergency department with complaints of abdominal pain persisting for one month, along with shortness of breath and decreased appetite. The patient had a previous diagnosis of Chilaiditi syndrome in 2022. Radiological evaluation revealed recurrence of colonic interposition between the liver and the right hemidiaphragm, consistent with Chilaiditi syndrome. The patient was managed conservatively with symptomatic improvement.

KEYWORDS: Chilaiditi syndrome, bowel interposition, pneumoperitoneum, abdominal pain, recurrence, radiological diagnosis.

INTRODUCTION

A rare benign medical condition known as Chilaiditi syndrome is characterized by clinical symptoms and colonic interposition between the liver and diaphragm, which is known radiographically as the Chilaiditi sign. We present the case of a patient who was diagnosed with Chilaiditi syndrome after presenting with shortness of breath and abdominal pain.[1]



Chilaidit Syndrome

ETIOLOGY

The colon's fixation and suspensory ligaments normally prevent it from moving between the diaphragm and liver. The pathological interposition of the colon observed in Chilaiditi syndrome is caused by variations in this anatomy. These differences may include the falciform ligament or the transverse colon's suspensory ligaments being absent, elongated, or lax. Congenital malposition's, functional disorders like chronic constipation brought on by colonic elongation and redundancy, gaseous distension of the colon, small liver from cirrhosis or hepatectomy, ascites from elevated intraabdominal pressure, significant weight loss in obese patients, and abnormally high diaphragm or diaphragmatic paralysis (which can manifest in conditions like diaphragmatic muscular degeneration or phrenic nerve injury) are additional factors that can predispose someone to develop Chilaiditi syndrome.[2,3,4,5]

EPIDEMIOLOGY

Demetrius Chilaiditi, a Greek radiologist, first described this syndrome in 1910 after he documented three cases of patients who had intra-abdominal free air on radiological imaging, which was brought on by the bowel's interposition between the liver and right hemidiaphragm. With a male to female ratio of 4:1, the incidence of Chilaiditi sign ranges from 0.025% to 0.28% globally. With a 1% incidence, it most frequently affects the elderly population. Nonetheless, it has been documented in patients ranging in age from 5 months to 81 years. In patients with mental illnesses, the incidence is 8.8% as well.[2] [4] [6]

CLINICAL MANIFESTATIONS

Abdominal pain, anorexia, nausea, vomiting, flatulence, constipation, changes in bowel habits followed by respiratory distress, and less frequently cardiac symptoms like angina like chest pain and arrhythmias are the most common presenting symptoms in patients with Chilaiditi syndrome. When the patient is in a supine position at night, these symptoms are typically worse. A patient will infrequently exhibit a mix of these multiorgan symptoms. Mild to severe gastrointestinal symptoms (such as an acute abdomen) are possible.[2] [6]

DIAGNOSIS

The Chilaiditi sign is typically discovered by chance on an abdominal computed tomography or chest x-ray. According to reports, between 0.025% and 0.280% of cases were discovered on plain chest and abdominal films, and between 1.18% and 2.40% of cases were shown with abdominal CT. These results may appear momentarily or permanently. According to radiological findings, the right hemidiaphragm must be raised above the liver by the intestine, the bowel must be enlarged by air to show pseudo-pneumoperitoneum, and the superior margin of the liver must be lowered below the level of the left hemidiaphragm in order to diagnose Chilaiditi sign. Depending on where the interposed bowel is in relation to the liver, the sign can be classified as either anterior or posterior.[2],[3],[4] [7] [8] [9]

CASE PRESENTATION

A 67 years old male patient with a known case of chilaiditi syndrome presented to the emergency department with a chief complaint of abdomen pain since 1month, which is insidious in onset gradually progresive associated with SOB for 2 days, and decreased appetite.

He had a social history of consuming alcohol and stopped 8years ago (ex – alcoholic).

SYSTEMIC EXAMINATION

PARAMETERS	D-1	D-2	D-3	D-4
TEMPERATURE(°F)	98	98.4	98	98.2
BLOOD PRESSURE(mm/hg)	120/80	120/80	130/80	130/80
PULSE RATE (bpm)	45	48	50	99
RESPIRATORY RATE(cpm)	20	20	20	20
CVS	S1S2	S1S2	S1S2	S1S2
RS	BAE+	BAE+	BAE+	BAE+
P/A	Soft, diffuse tenderness present over abdomen, no guarding, no rigidity	Soft, diffuse tenderness+ Right &left hypochondrium, epigastric region	Soft, diffuse tenderness+ Right &left hypochondrium, epigastric region	Soft, non tender No guarding No rigidity
SPO2	99%@RA	96%@RA	98%@RA	98%@RA

COMPLETE BLOOD PICTURE

Detailed laboratory investigations on case report

PARAMETERS	RESULTS	NORMAL VALUES
Hemoglobin (g/dl)	12.4	13.0-17.0 g/dl
RBC (million/cumm)	5.1	4.5-5.5 millions/cumm
WBC (cells/cumm)	6,700	4,000-10000
Platelets (lakhs/cum)	2.3	1.5-4.1
Neutrophils	62%	40-80%
Lymphocytes	30%	20-40%
Eosinophils	02%	01-06%
Monocytes	06%	02-10%
Basophils	00%	01-02%

THYROID TEST

PARAMETERS	RESULTS	NORMAL VALUES
T3	0.58 (ng/ ml)	0.4-1.8(ng/ml)
T4	14.40 (ug /dl)	5.0-10.7 (ug /dl)
TSH	0.88 (IU /ml)	0.5-8.9 (IU/ml)

TREATMENT CHART

TRADE NAME	GENERIC NAME	DOSE	ROA	FRQ	INDICATION
INJ MONOCEF	Ceftriaxone	1gm	IV	BD	To manage bacterial infections
INJ PAN	Pantoprazole	40mg	IV	OD	To decrease acid reflux which is caused by other drugs
INJ DYNAPAR-AQ (IN 100ML NS)	Diclofenac	75mg	IV	BD	To treat abdominal pain
INJ PCM	Paracetamol	1g	IV	SOS	To decrease elevated body temperature
INJ ZOFER	Ondansetron	4mg	IV	SOS	To reduce vomiting during therapy
SUPPOSITORY DULCOLAX	Bisacodyl	10mg	PR	STAT	To relieve constipation & decompress the bowel
TAB ORCIBEST	Orciprenaline	10mg	P/O	STAT	To treat shortness of breath
TAB NEXPRO RD	Esomeprazole mg & domperidone	40mg	P/O	BD	To manage associated GI symptoms
TAB REBAHEAL	Rebamipide	100mg	P/O	TID	Used as mucosal protective agent
TAB COLOSPA	Mebeverine	135mg	P/O	BD	Used as an antispasmodic agent
SYP DIGERAFT – PLUS	Sodium Alginate, sodium bicarbonate & calcium carbonate	5ml	P/O	TID	Used to manage GI Sx like bloating /indigestion
10 DNS	Sodium chloride & dextrose	500ml	100ml/hr	S.T	Rehydration and maintenance of fluid balance, often in conjunction with bowel rest and decompression
10 RL	Compound sodium lactate	500ml	IV	SOS	Rehydration and maintenance of fluid balance, often in conjunction with bowel rest and decompression

DISCUSSION

Chilaiditi pattern is an uncommon clinical reality characterized by the interposition of the colon between the liver and diaphragm, producing radiological findings that mimic pneumoperitoneum. Its donation may vary from asymptomatic incidental findings to characteristic cases with gastrointestinal or respiratory complaints. The oddity and nonspecific nature of its clinical instantiations frequently affect in individual confusion, potentially leading to gratuitous surgical intervention if not honored beforehand.

In the present case, the 67- time-old manly case, preliminarily diagnosed with Chilaiditi pattern in 2022, presented with intermittent abdominal pain, briefness of breath, and dropped appetite. The rush highlights the habitual and occasionally returning nature of this condition, particularly in senior individualities with prepping anatomical or functional factors similar as spare colon, lax suspensory ligaments, or altered diaphragmatic position. Radiological evaluation verified the presence of colonic interposition without signs of bowel inhibition or perforation, therefore ruling out acute surgical causes.

Management of Chilaiditi syndrome is generally conservative, focusing on symptomatic relief and correction of predisposing factors. In this case, treatment included bowel decompression, laxatives, mucosal protective agents, and supportive therapy, leading to gradual improvement. Surgical intervention is reserved for complications such as volvulus, bowel ischemia, or persistent obstruction, which were absent in this patient. The importance of differentiating this condition from pneumoperitoneum cannot be overstated, as misinterpretation may lead to unwarranted laparotomy.

This case underscores the need for clinicians and radiologists to maintain a high index of suspicion when encountering right subdiaphragmatic free air on imaging. Awareness and accurate diagnosis are essential to avoid unnecessary surgical procedures and to ensure appropriate conservative management.

CONCLUSION

Chilaiditi syndrome, though rare, should be considered in the differential diagnosis of patients presenting with abdominal pain and radiographic evidence suggestive of pneumoperitoneum. Proper clinical correlation and imaging interpretation are crucial for distinguishing it from more severe intra-abdominal conditions. Conservative management remains the mainstay of treatment and generally leads to favorable outcomes. This case highlights the importance of awareness among healthcare professionals to prevent misdiagnosis and unnecessary surgical interventions, especially in elderly patients with recurrent or predisposing anatomical factors.

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