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Gastric Perforation: A Case of Mis-Diagnosis as Chilaiditi Syndrome

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1. Introduction

Pneumoperitoneum is an essential sign for diagnosis of perforation in various radiological investigations. Immediate surgical exploration with definitive repair is life-saving.

Chilaiditi syndrome is one such differential diagnosis which is transpositioning of a loop of large intestine in between the diaphragm and the liver, its incidence being 0.025% to 0.28%.

A 47 year old male presented with pain over the Epigastrium and left hypochondrium since one day with no known co-morbidities. On examination, significant abdominal distension, diffuse guarding and tenderness over the left hypochrondrium and epigastric region. X-ray showed inter-position of bowel loops in between liver and diaphgram with CECT abdomen and pelvis showing a finding of Hollow viscus perforation with moderate ascites. Immediately Exploratory Laparotomy conducted. Patient recovered well post-operatively.

2. Case Presentation

A 47year old male patient admitted to emergency medicine department with Acute pain abdomen in Epigastrium and left hypochondrium since 1 day. On examination abdominal distension, diffuse guarding and tenderness in the left hypochondrium and epigastrium seen. Bowel sounds are not audible. Clinically the picture of perforation is suspected. The erect abdomen X-ray done showed transposition of bowel loops in between liver and diaphgram which is contrast to features of Hollow viscus perforation. USG done showed dilated bowel loops. Thus the patienr diagnosed to have Chilaiditi syndrome and was planned to manage conservatively.

Patient's symptoms persisted with no improvement clinically, thus CECT abdomen and pelvis planned on Day-3 which confirmed the diagnosis of Hollow viscus perforation with moderate ascites.

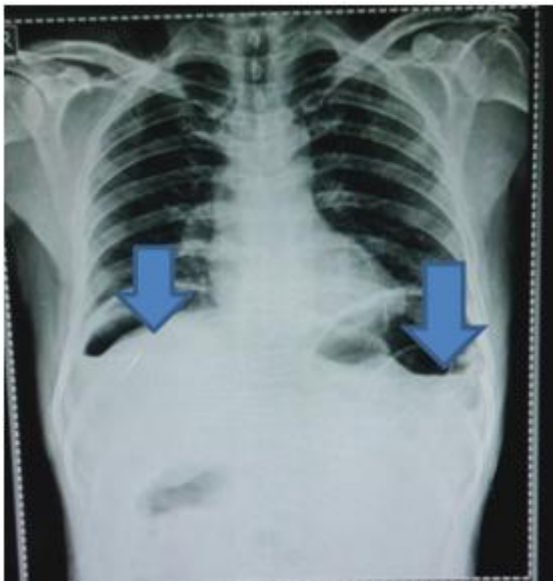

Figure 1: Plain erect abdomen xray showing Chilaiditi sign done on first day of presentation

Patient was taken up for emergency exploratory laparotomy under high risk with supraumbilical midline incision extending from xiphisternum to just below umbilicus. Intraoperatively greeted with plastered upper abdomen with bile tinged peritoneal fluid with pus flakes all over the stomach ,liver and intestine loops. A perforation noted at antro-pyloric region of 0.7x0.5cm. It was repaired and omental patch mobilized over that and fixed (Modified Graham's Patch repair).

Patient recovered well in post-operative period.

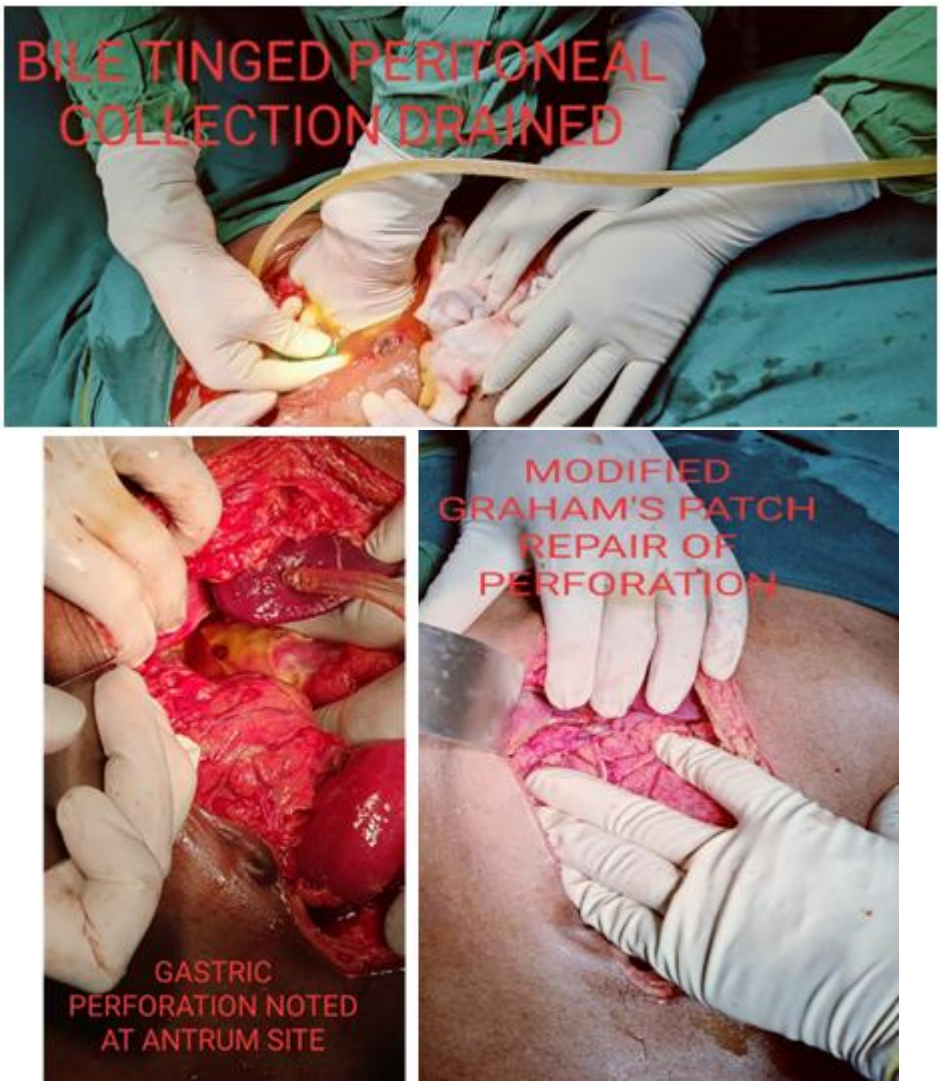

Figure 3: Intraoperative Pictures

3. Discussion

Chilaiditi sign/syndrome is the harmless and asymptomatic interposition of large bowel between the liver and diaphragm, is a radiographic finding named after the Greek radiologist Demetrius Chilaiditi from Vienna, who first described this sign in 1910. It can be either congenital or acquired. It has incidence of 0.025% - 0.28% worldwide with male:female of 4:1. Itcan occur from 5 months to 81 years of age with 1% incidence in elderly population. Normally suspensory ligament and fixation of colon will prevent the interposition of colon between liver and diaphragm. The predisposing factors of this condition may be congenital such as an elongated, redundant, and hypermobile colon, laxity, or absence of suspensory ligaments. Acquired causes may include a small liver due to atrophy in cirrhosis or hepatectomy, ascites, substantial weight loss in obese patients, and abnormally high diaphragm in conditions such as diaphragmatic muscular degeneration or phrenic nerve injury and rarely may occur due to excessive aerophagia.

It is mostly diagnosed as an incidental finding on a chest X-ray or abdominal computed tomography (CT), which can be present temporarily or permanently. On a chest X-ray it presents as air under the right hemidiaphragm and can be mistaken for pneumoperitoneum and can lead to unnecessary surgical intervention if not recognized correctly. Interventions are not required for asymptomatic patients with Chilaiditi sign and the treatment is usually conservative.

The differential diagnosis should consider primarily potential causes of perforation of the abdominal hollow viscus. In this patient clinically, perforation was highly suspected thus further investigation in form of CECT abdomen done.

4. Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Declaration of Competing Interest
The authors declare no conflict of interest.

References

[1] Ben Ismail I, Zenaidi H, RebiiS, Yahmadi A, Zoghlami A. Chilaiditi's sign: A rare differential diagnosis of

pneumoperitoneum. Clin Case Rep. 2020;8:3101–3103. https://doi.org/10.1002/ccr3.3346

[2] Gad, M.M., Al-Husseini, M.J., Salahia, S. et al. Chilaiditi syndrome – a rare case of pneumoperitoneum in the emergency department: a case report. J Med Case Reports 12, 263 (2018). https://doi.org/10.1186/s13256-018-1804-y

[3] SupriyaDsouza, YuvrajMhaske, AdarshKulkarni&AjitBaviskar (2018) Chilaiditi syndrome—a clinical conundrum!, Southern African Journal of Anaesthesia and Analgesia, 24:6, 170-171, DOI: 10.1080/22201181.2018.1523978

[4] Alansari M. Chilaiditi syndrome: a case of missed diagnosis. Case Reports 2013;2013:bcr2012008459.

[5] Aqdas A Al Omran, Arwa H Ibrahim, Ameera S Balhareth, Chilaiditi syndrome: an unusual presentation in elderly man, Journal of Surgical Case Reports, Volume 2020, Issue 7, July 2020, rjaa141, https://doi.org/10.1093/jscr/rjaa141