Case Report

Internal herniation of cecum through the foramen of Winslow and into the lesser sac: A case report

Austin Promersberger, MDa,*, Luke Roller, MDb

a University of North Dakota School of Medicine and Health Sciences, 1919 N Elm Street, Fargo, ND 58102-2411, USA
b University of North Dakota School of Medicine and Health Sciences, 701 E Rosser Ave., Bismarck, ND 58501-4461, USA

Article history:
Received 18 July 2022
Accepted 24 July 2022

Keywords:
Internal hernia
Foramen of Winslow
Cecum

Abstract

An internal hernia is a protrusion of a visceral organ through a peritoneal or mesenteric opening within the abdominal or pelvic cavities. Internal hernias may present with a wide range of symptoms from mild digestive pain to acute abdomen. Internal hernias have a high morbidity and mortality rate often due to delayed diagnosis and progression of bowel obstruction to bowel ischemia or infarction. High clinical suspicion, cross-sectional imaging, and early surgical intervention are important to prevent life-threatening complications. Here, we report an internal hernia of the cecum through the foramen of Winslow and into the lesser sac with classic CT findings. The patient underwent a successful exploratory laparotomy and resection.

© 2022 The Authors. Published by Elsevier Inc. on behalf of University of Washington. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)

Introduction

An internal hernia is a protrusion of a visceral organ (eg, small bowel), through a peritoneal or mesenteric opening within the abdominal or pelvic cavities. Internal hernias are rare, and they account for 0.6%-5.8% of small bowel obstructions [1]. There are several different types of internal hernias including paraduodenal, pericecal, transmesenteric, transmesocolic, intersigmoid, retroanastomotic, and through the foramen of Winslow. Paraduodenal internal hernias are the most common and account for 53% of internal hernias, while internal hernias through the foramen of Winslow account for only 8% of internal hernias [1,2].

Internal hernias can have a high morbidity and mortality rate due to progression of bowel obstruction to ischemia or infarction (up to 50%) [1,3]. Due to the increasing number of surgeries using a Roux loop, there has been an increase in internal hernias [4]. Often times, internal hernias are not diagnosed until an exploratory laparotomy has been performed, due to nonspecific clinical findings [3,5]. Because of the difficulty in diagnosis, cross-sectional imaging plays an important role in first line diagnosis, staging, and follow-up [3,4]. Here, we present a case of an internal hernia through the foramen of Winslow and into the lesser sac, diagnosed by CT, and successfully treated with emergent exploratory laparotomy and resection.

* Competing Interests: The authors report no conflict of interest.
* Corresponding author.
E-mail address: austin.promersberger@und.edu (A. Promersberger).
https://doi.org/10.1016/j.radcr.2022.07.093
1930-0433/© 2022 The Authors. Published by Elsevier Inc. on behalf of University of Washington. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)
Fig. 1 – An axial CT image demonstrating the cecum (C) and terminal ileum (TI) herniating through the foramen of Winslow into the lesser sac, positioned posterior to the stomach (S).

Fig. 2 – A coronal CT image demonstrating the cecum (C) and terminal ileum (TI) herniating through the foramen of Winslow into the lesser sac. The stomach (S) is superior and the pancreas (P) is inferior to this herniation.
Case report

A 66-year-old female presented to the emergency department with intermittent mid-epigastric pain of 6 hours duration. The pain started approximately 2 hours after eating and she denied nausea, vomiting, or diarrhea. She had no history of prior abdominal surgeries. Physical exam showed right upper quadrant and mid epigastric pain. CBC and CMP demonstrated a slightly elevated alkaline phosphatase at 27 U/L, and were otherwise unremarkable. CT scan showed the cecum protruding through the foramen of Winslow into the lesser sac (Figs. 1 and 2). The patient was brought to the operating room for an exploratory laparotomy. Surgery confirmed the cecum was incarcerated in the lesser sac. The cecum was removed from the lesser sac and a right hemicolectomy was performed.

Discussion

Internal Hernias are a rare cause of abdominal pain which can be life-threatening. They often have a delayed diagnosis due to non-specific clinical presentation [3]. It is important to diagnose this condition quickly as it can progress to a surgical emergency requiring an exploratory laparotomy [1–4]. CT with IV contrast is the diagnostic study of choice due to its speed, high sensitivity (94%–100%), and specificity (90%–95%) [3]. Contrast is crucial for evaluating mesenteric vessels and bowel wall vascularity [3,6].

Conclusion

We have presented a rare case of an incarcerated internal hernia involving the cecum herniating through the foramen of Winslow into the lesser sac, diagnosed by CT, and successfully treated via exploratory laparotomy and resection. This case emphasizes the important of familiarity with these rare imaging findings, correct diagnosis, and urgent treatment in order to prevent greater complications.

Patient consent

We obtained written informed consent from this patient for publication of this case prior to beginning this report.

REFERENCES

[1] Akyildiz H, Artis T, Sozuer E, Akcacan A, Kucuk C, Sensoy E, et al. Internal hernia: complex diagnostic and therapeutic problem. Int J Surg 2009;7(4):334–7. doi:10.1016/j.ijsu.2009.04.013.
[2] Thomas JM, Van Fossen K. Anatomy, abdomen and pelvis, foramen of Winslow (Omental, Epiploic). StatPearls. StatPearls Publishing LLC; 2022.
[3] Lanzetta MM, Masserelli A, Addeo G, Cozzi D, Maggialetti N, Danti G, et al. Internal hernias: a difficult diagnostic challenge. Review of CT signs and clinical findings. Acta Biomed 2019;90(5-s):20–37. doi:10.23750/abm.v90i5-S.8344.
[4] Sikiminywa-Kambale P, Anaye A, Roulet D, Pezzetta E. Internal hernia through the foramen of Winslow: a diagnosis to consider in moderate epigastric pain. J Surg Case Rep 2014;2014(6). doi:10.1093/jscr/jru065.
[5] Tepes M, Kirac I, Glavan E, Doko M. Internal hernias in acute abdomen: review of literature and report of four cases. Coll Antropol 2015;39(2):475–9.
[6] Martin LC, Merkle EM, Thompson WM. Review of internal hernias: radiographic and clinical findings. AJR Am J Roentgenol 2006;186(3):703–17. doi:10.2214/ajr.05.0644.