

Winslow hiatal hernia due to Meckel's diverticulum: a rare cause of a rare hernia

Hernia de hiato de Winslow por divertículo de Meckel: una causa infrecuente de una hernia infrecuente

Diana Carolina García Ibáñez[1]
María Candelaria Tregea[2]
María De Vedia[2]
Nicolás Roccatagliata[2]
Víctor Nebil Larrañaga[2]
Carlos Federico Ferrarotti[2]
https://doi.org/10.53903/01212095.255

Key words (MeSH)
Internal hernia
Meckel diverticulum
Abdominal hernia
Intestinal obstruction

Palabras clave (DeCS)
Hernia interna
Divertículo ileal
Hernia abdominal
Obstrucción intestinal

Summary
Internal hernias are a rare cause of intestinal obstruction. Among this group, 8 % are Winslow Hiatal hernias (WHH). Four types of Winslow Hiatal hernias have been described, depending on the herniated organ, with Meckel's diverticulum (MD) being a rare type. It is a condition that is difficult to diagnose, and its treatment is surgical. Patients can experience high morbidity and mortality, especially when it is associated with vascular strangulation, with a mortality rate exceeding 50 %. The objective of this manuscript is to present a case of WHH due to a rare cause. Accurate or suspected preoperative diagnosis is achieved in only 10 % of cases, and urgent surgical intervention is the sole factor that reduces morbidity and mortality. Multidetector computed tomography (MDCT) is highly useful for early diagnostic suspicion.

Resumen
Las hernias internas representan una causa infrecuente de obstrucción intestinal. De estas, el 8 % corresponden a hernias del hiato de Winslow. De los cuatro tipos de hernia de hiato de Winslow (HHW) descritas, según el órgano afectado, el divertículo de Meckel es poco frecuente. Es una entidad de difícil diagnóstico, su tratamiento es quirúrgico y los pacientes pueden presentar una alta morbimortalidad, superior al 50 %, cuando está asociada a estrangulación vascular. El objetivo de este manuscrito es presentar un caso de hernia de hiato de Winslow por una causa infrecuente. Su diagnóstico preoperatorio certero o de sospecha solo se logra en un 10 % de los casos y la conducta quirúrgica urgente es el único factor que disminuye su morbimortalidad. La tomografía computarizada multidetector (TCMD), es de gran utilidad para la sospecha diagnóstica precoz.

Case report
The patient is a 68-year-old woman with a surgical history of appendectomy and partial resection of the right fallopian tube and ovary. She reported clinical symptoms of four days of evolution, with pain on palpation in the right hemiabdomen and emetic episodes, with no signs of peritoneal irritation.

She underwent imaging evaluation with multidetector computed tomography (MDCT) of the abdomen and pelvis with oral and intravenous contrast medium, which showed herniation of the small intestine and its vascular mesocolon through the hiatus of Winslow, associated with Meckel's diverticulum (MD), with consequent dilatation of proximal loops (Figures 1, 2 and 3). There is also extrinsic compression of the portal vein in the hernial neck (Figure 4) and an area of perfusion defect of the hepatic parenchyma. Other findings were scarce free abdominal fluid, as well as rarefaction of the omental fat and medialization of the ascending colon.

The patient was taken to laparoscopic surgery, where Winslow Hiatal hernias (WHH) associated with MD was found (Figure 5). In-hospital antibiotic therapy was administered, and the patient was subsequently discharged without complications.

Discussion
The peritoneal cavity is formed by two main spaces, the greater sac, or general peritoneal cavity, and the lesser sac, or omentum transcavity (1). These cavities communicate through the epiploic foramen of Winslow (2).

[1]Fourth year resident physician, Diagnostic Imaging, Center for Medical Education and Clinical Research (CEMIC). Autonomous City of Buenos Aires, Argentina.

[2]Specialist in Diagnostic Imaging, Centro de Educación Médica e Investigaciones clínicas (CEMIC). Autonomous City of Buenos Aires, Argentina.

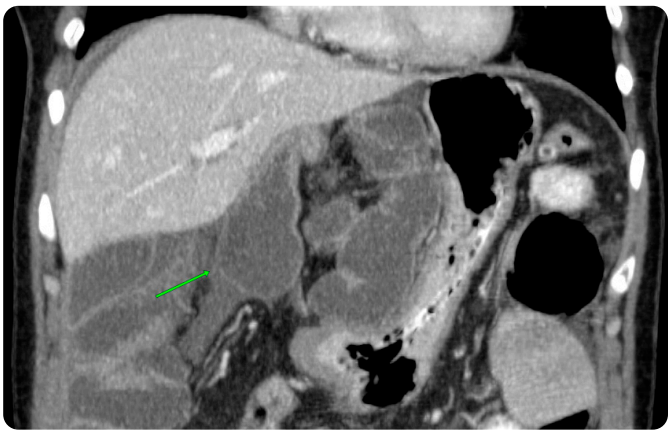


Figure 1. MDCT with contrast medium, coronal section. MDCT with contrast medium, axial section. Distended small bowel compression and dilated blind loop in HW topography, corresponding to the portal vein (arrow) by a thin loop in the hernial neck, corresponding to MD (arrow).



Figure 2. MDCT with contrast medium axial section. Dilatation of small bowel loops. Herniation of the mesocolon through the HW (arrows).



Figure 3. MDCT with contrast medium, oblique axial view. Herniation of the mesocolon with its vascular structures and point of change of caliber of the blind loop corresponding to MD (arrow).

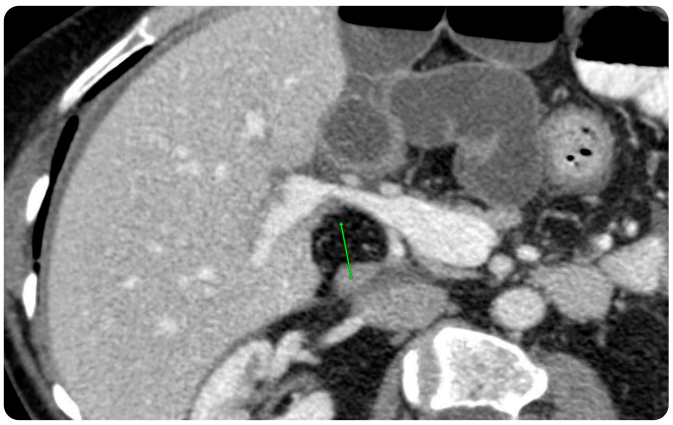


Figure 4. MDCT with contrast medium, axial view. Extrinsic compression of the portal vein (arrow) by thin loop in the hernial neck, in the topography of the HW.



Figure 5. Intraoperative image. MD with ischemic changes of its wall (arrows) and the mesocolon corresponding to the small bowel.

Anatomy

WH is a virtual orifice that remains uncontained and collapsed under normal conditions. There are several predisposing factors to hernia, such as a wide Winslow's foramen, excessively mobile bowel loops due to an abnormally long mesentery, persistence of ascending mesocolon, enlarged right hepatic lobe (Riedel's lobe), gastrohepatic ligament defect, and incomplete intestinal rotation or malrotation, also due to surgical procedures, such as fundoplication of the gastrohepatic ligament, gastrohepatic ligament defect and incomplete intestinal rotation or malrotation, also due to surgical procedures, such as Niessen fundoplication, liver transplantation, gastric bypass and cholecystectomy (3). In addition, cases have been reported following activities that increase abdominal pressure, such as childbirth or carrying heavy objects (1).

WHH occurs mainly between 20 and 60 years of age and affects men and women equally (4, 5). They are classified into four types: type I, isolated small bowel hernia (50-70 %); type II, including distal ileum, cecum and ascending colon (25-30 %); type III, including transverse colon (7 % of cases), and type IV, including gallbladder, greater omentum and Meckel's diverticulum or only the latter (1 %) (1).

DM is the most common congenital anomaly of the gastrointestinal tract and occurs in 2% to 3% of the population. It is located 60-100 cm from the distal ileum and found in 2% of the population. Most cases are asymptomatic. Intestinal obstruction is the most frequent complication

in adults, and internal hernias are the cause in 0.5 to 4%. The clinical presentation, laboratory tests and physical examination are nonspecific and less than 10% of cases are diagnosed preoperatively (6).

Clinically, it presents with nonspecific signs and symptoms that sometimes resolve spontaneously. They may present acute and intense upper abdominal pain and signs of small bowel obstruction and even obstructive jaundice due to compression of the biliary tract (1).

The use of MDCT is very useful for early diagnosis. Typical signs include dilatation of the right colon posterior to the hepatoduodenal ligament, associated with lateral displacement of the stomach, elongated mesenteric vessels in front of the inferior vena cava and posterior to the portal vein, the portal vein can also be seen compressed by the herniated elements, hydro-aerial levels in the lesser sac with a peak directed towards the foramen of Winslow, absence of the ascending colon in the right parietocolic canal and two or more intestinal loops in the subhepatic spaces (4). In addition, periportal edema and transient perfusion disorders have been described, probably secondary to compression of the hepatic hilum (1).

The treatment of choice for WHH is priority reduction of the herniated loops (1). Surgical closure is not a frequent recommendation, due to the risk of injury to the hepatic artery or bile ducts and portal vein thrombosis, and the fact that recurrence after surgery has not been described. In patients with signs of irreversible ischemia or necrosis, intestinal resection should be performed (1). In the case of MD, in the presence of a palpable ectopic tissue mass, inflammation or a wide base, it is preferable to resect the affected bowel with terminal end anastomosis, although postoperative complications have been reported (5).

Conclusion

The diagnosis of rare entities, such as WHH due to MD, represents a clinical and radiological challenge. MDCT allows the identification of imaging findings that lead to an early diagnosis, allow timely treatment and reduce patient morbidity and mortality.

References

1. López Pérez E, Hernándis Villalba J. Hernia interna a través del hiato de Winslow. Radiología. 2013;55(3):269-70. http://dx.doi.org/10.1016/j.rx.2011.09.024
2. Cabrera PA, Mosquera MS, Kadamani A, Sánchez G, Santos JH. Hernia de hiato de Winslow. Rev Colomb Cir. 2015;30:306-10.
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. http://dx.doi.org/10.23750/abm.v90i5-S.8344
4. Muñoz A, Flórez D, Lubinus F, Arias C. Internal hernias: Report of clinical cases. Rev Colomb Radiol. 2017;28(4):4797-804.
5. Patil A, Kulkarni V, Naware S. Imaging findings in imflammed Meckel´s diverticulum. Med J DY Patil Univ. 2012;5:54-9.
6. Motta-Ramírez GA, Reyes-Méndez E, Campos-Torres J, García-Ruiz A, Rivera-Méndez VM, García-Castellanos JA. El divertículo de Meckel en adultos. Anales de Radiología México. 2015;14:20-30.

Correspondence

Diana Carolina García Ibáñez
Galván 4102,
Autonomous City of Buenos Aires, Argentina
carolinagarcianbx@gmail.com

Received for evaluation: April 12, 2023
Accepted for publication: August 15, 2023