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Case Report / Приказ болесника

Perica Adnađević[1,♣], Violeta Dobrilović[1], Sofija Radosavljević[1], Tijana Kosanović[1], Dejan Stojakov[2]

Isolated trans-hiatal colonic herniation causing gastric outlet obstruction

Изолована транс-хијатална хернијација трансверзалног колона као редак узрок опструкције желуца

[1]"Dr Dragiša Mišović – Dedinje" University Hospital Center Department of Radiology, Belgrade Serbia;
[2]"Dr Dragiša Mišović – Dedinje" University Hospital Center, Department of Surgery, Belgrade Serbia

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♣**Correspondence to:**
Perica ADNAĐEVIĆ
Rumska 20, 11000 Belgrade, Serbia
peternix1976@gmail.com

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SUMMARY

Introduction There are four types of hiatus hernia, and type IV is the rarest and occurs in less than 5%. A hiatus hernia that contains only the transverse colon without the stomach and that did not arise because of a traumatic diaphragmatic defect, such as in this case is very seldom, and eight similar cases have been described in the literature so far.

Case outline A 66-year-old man presented to the emergency room with a complaint of nausea and frequent vomiting. Upon examination, the paraumbilical region was profoundly tender. Abdominal X-ray revealed a distended stomach with air-liquid levels in the right upper quadrant. Ultrasound of the abdomen showed a distended, hypotonic stomach and a suspicious solitary mass of the right kidney. Contrast enhanced computed tomography (CECT) examination showed an isolated herniation of the transverse colon with its respective vascular pedicle, causing consecutive compression and obstruction of the pylorus and duodenal bulb. An open laparotomy was performed - including repositioning of the transverse colon with omentum along with repair of the crural defect and Toupet's fundoplication. In the same act, a right-sided radical nephrectomy was performed. The patient was discharged after 10 days without complications.

Conclusion Isolated trans hiatal herniation of the colon presents with non-specific symptoms and in the case of acute gastric obstruction is an indication for urgent surgery. Correct diagnosis confirmed by computed tomography and adequate treatment can prevent possible complications.

Keywords: Hiatal hernia; paraoesophageal colonic herniation; gastric outlet obstruction

САЖЕТАК

Увод Хијатус хернија представља миграцију интраабдоминално позиционираних органа интраторакално у медијастинум кроз езофагеални хијатус. Постоје четири типа хијатус хернија (*I–IV*), при чему је тип *IV* најређи и јавља се у мање од 5% случајева. Хијатус хернија која садржи само део трансверзалног колона без желуца и која није настала као резултат трауматског дефекта дијафрагме, као у нашем случају, је веома ретка и до сада је описано осам сличних случајева у литератури. На основу наведених случајева, доводи се у питање потенцијална допуна постојеће класификације, где би тип *IV*а могао одговарати изолованој хернијацији абдоминалних органа без присуства желуца.

Приказ случаја Мушкарац старости 66 година се јавио у хитну службу, жалећи се на мучнину и учестало повраћање. Нативна радиографија абдомена је указивала на дистендиран желудац са аероликвидним нивоом у десном горњем квадранту. Ултразвучно је детектован дистендиран, хипотоничан желудац и туморска формација десног бубрега. Компјутеризована томографија (ЦТ) са интравенским контрастом је показала параезофагеалну хернијацију трансверзалног колона са припадајућом васкуларном петељком и са последичном компресијом и опструкцијом пилоруса и булбуса дуоденума. Урађена је хитна лапаротомија са репозиционирањем трансверзалног колона са оентмом, крурални дефект је репариран, извршена је фундопликација по Тупету и десна радикална нефректомија. Постоперативни ток је протекао уредно и пацијент је отпуштен након 10 дана.

Закључак Изолована трансхијатална хернијација колона испољава се неспецифичним симптомима и у случају акутне опструкције желуца представља индикацију за хитну операцију. Прецизна дијагноза потврђена ЦТ прегледом и адекватан третман могу спречити могуће компликације.

Кључне речи: Хијатус хернија; параезофагеална хернијација колона; гастроинтестнана опструкција

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INTRODUCTION

Hiatus hernia represents the migration of intra-abdominally positioned organs intrathoracic into

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the mediastinum through the esophageal hiatus. There are four types of hiatus hernia (I-IV), with type IV being the rarest and occurring in less than 5% [1-4]. A hiatus hernia containing only part of the transverse colon, without the stomach, which did not occur because of a traumatic diaphragmatic defect, as in this case, is very rare, and so far, eight similar cases have been described in the literature [5-12]. Based on the mentioned cases, the potential modification of the existing classification is questioned, where type IVa could correspond to isolated herniation of abdominal organs without the stomach [13].

This patient experienced an isolated colonic herniation and incarceration treated by Toupet's fundoplication [14-15].

CASE REPORT

A 66-year-old man presented to the emergency room with nausea and frequent vomiting over the course of the last ten days, with no significant medical history, trauma, or previous operations. Upon physical examination, the epigastric region was profoundly tender. Initial laboratory findings were WBC of $9x10^9$/l, CRP of 100 mg/dl. Abdominal X-ray showed a distended stomach with an air fluid level in the right upper quadrant. Ultrasound of the abdomen revealed a distended, hypotonic stomach and a suspicious tumorous formation of the right kidney. Contrast enhanced computed tomography (CT) examination showed a paraoesophageal herniation of the transverse colon with its mesocolon and respective vascular pedicle, propagating through the 150 millimeters wide hiatus cranially and forming an angulation. The herniated colon segment was causing direct consequential compression and obstruction of the pylorus and duodenal bulb, while the stomach was positioned intraabdominally, with no torsion and distended with fluid contents. The vascular structures of the colon were not showing sign of obstruction, revealing normal postcontrast enhancement.

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(Figure 1-2). There was an expansive formation on the lower pole of the right kidney, presenting with radiological features of renocellular carcinoma. The patient was admitted to the surgical department, nasogastric decompression was performed, evacuating over 3000 milliliters of stomach contents. An open laparotomy was performed, and intraoperative findings confirmed that the stomach was distended and positioned intraabdominally, with its outlet compressed by the colonic herniation, edematous stomach serosa and surrounding adipose tissue, and a significantly thinned right diaphragmatic crus. The transverse colon with omentum was then repositioned, the crural defect repaired and Toupet's fundoplication was performed. In the same act a right-sided radical nephrectomy was executed (Figure 3). Following an uneventful postoperative course, the patient was discharged after 10 days. From there on, the patient has been on a routine follow-up program and reports feeling well.

Ethics: Written consent to publish all shown material was obtained from the patient.

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DISCUSSION

Limited number of cases prevents from drawing any general conclusion.

This condition can present with a wide array of clinical manifestations, ranging from minimal epigastric discomfort to dyspnea, dysphagia, nausea, and vomiting, even chest and epigastric pain.

In this case, we identified no significant risk factors associated with elevated intraabdominal pressure, concluding that the most probable etiology was a congenital defect with self-reducing hiatus hernia that progressed to subsequent irreducible colonic migration presenting with gastric outlet obstruction.

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This direct compression of the gastric outlet caused the patient to present with nausea and vomiting. Intraoperative findings were conclusive with chronic hiatal herniation, showing the gastric outlet displaced upwards and compressed by the herniated transverse colon and mesocolon, edematous stomach serosa and surrounding adipose tissue, and a significantly thinned right diaphragmatic crus. Concerning this case report, there was no endoscopy performed before or during this hospitalization, as there were no specific symptoms, and no evidence of preexisting gastric hiatal herniation.

The natural course of hiatal hernia can become complicated by volvulus, incarceration, perforation, or aspiration pneumonia.

In literature review, there are eight other documented cases of isolated trans-hiatal colonic herniation in absence of intrathoracic stomach. Three patients of these were successfully treated by laparoscopic repair, and the rest, including our case, underwent operative repair [3, 5-6].

The only other documented case of isolated colonic hiatal herniation presenting with gastric outlet obstruction was delivered by Self et al. [3].

Considering different clinical manifestations, contrast enhanced CT is indispensable in establishing the correct diagnosis. Even with a limited number of cases including isolated intrathoracic colonic migration in literature, the question arises about a potential revision of the existing classification of hiatal hernia types, where isolated trans-hiatal colonic hernia could be classified into a new subtype IVa [13].

Conflict of interests: None declared.

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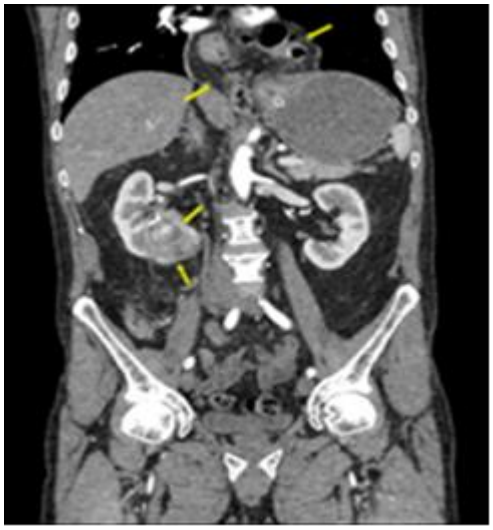

Figure 1. Coronal computed tomography image showing isolated intrathoracic colonic herniation (yellow arrows) and a solitary mass in the right kidney

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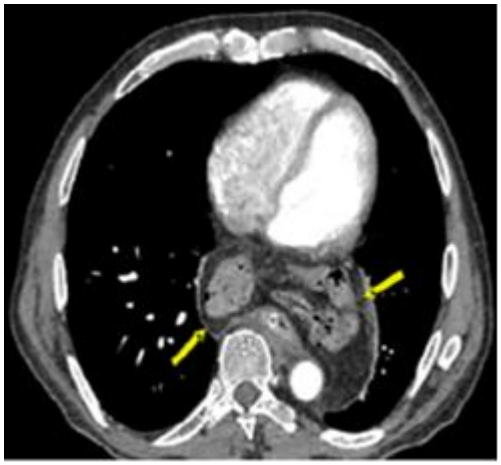

Figure 2. Axial computed tomography image showing isolated intrathoracic colonic herniation (yellow arrows)

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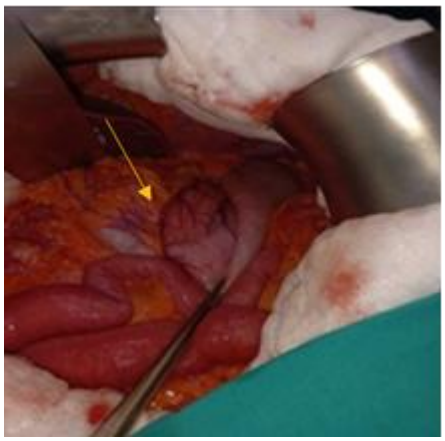

Figure 3. Intraoperative findings - isolated intrathoracic colonic herniation (yellow arrow)

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