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When simple hernia is not that simple: Treatment of concomitant pathology in acute care surgery, a case report

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ABSTRACT

INTRODUCTION: Obstructed colon cancer is not an uncommon surgical emergency. Many other surgical diseases may overlap their presenting symptoms. This paper aims to report a colon cancer case with delayed diagnosis due to a long-standing para-umbilical hernia (PUH).

CASE REPORT: 60-year-old female patient presented to our emergency department (ED) with an obstructed PUH. The patient underwent watchful conservative management many times before due to associated comorbidities. This history of recurrent intestinal obstruction and incomplete regain of regular bowel habits after every hospital admission raises the possibility for concealed pathology. Further investigations, including computed tomography (CT), revealed a suspicion of an obstructed malignant mass at the colon's splenic flexure accompanied with complete bowel obstruction. The patient and their family consulted for exploratory laparotomy and the possibility of stoma formation. The intra-operative finding was constant with a small ventral defect, and a dilated bowel loops up to a left colon transition zone. We achieved left hemicolectomy with a primary anastomosis after intra-operative bowel lavage. The post-operative period was uneventful, and the patient was discharged home after seven days of admission. Follow up in the outpatient surgical clinic for three months revealed no recordable complications. The patient had transferred to the oncology center for the completion of adjuvant therapy.

DISCUSSION: This case had a small PUH with recurrent obstruction. The delay in its management was due to the patient's comorbidities. However, the incomplete resolution of patient symptoms during watchful oversight increases the likelihood of another hidden pathology that required further investigation. We expanded CT indication in such patients to find the exact cause of patient symptoms, especially chronic constipation and incomplete recovery after every admission. While concurrent pathology is the norm in elective surgery and can be dealt with safely, in non-elective surgery, a thorough search about the patient's exact complaints is mandatory to decrease morbidity and mortality rates.

CONCLUSION: In the same patient, both colon cancer and abdominal wall hernias can produce conflicting symptoms and delay diagnosis. However, with a high index of suspicion and correlation of patient symptoms, can be safely managed without morbidity.

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1. Introduction

Up to 30% of patients with colorectal cancer present with colonic obstruction mostly at or distal to splenic flexure [1]. In older patients with multiple comorbidities, the delayed diagnosis dramatically impacts patients' overall survival and hospital burden. Conflicting clinical features are the main issue behind this delay, in which the clinician attributes most of the patient symptoms due

to non-cancer causes [2]. Abdominal pain, altered bowel habits, and weight loss are typical examples of these conflicting features [3]. Cardiac, respiratory, and renal diseases are risk factors for malignancy, need an optimal correction and alter patient management's final decision toward a more conservative way. In elective surgery, the approach for concurrent procedures can be safe and effective. Contemporary techniques are considered problematic in emergency cases, so most surgeons prefer to defer the non-urgent condition [4].

Here, we report, to the best of our knowledge, another view about conflicting clinical features where the clinician's eye may distract from obstructing colonic malignancy toward recurrent

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obstructed ventral hernia. The report coincides with SCARE guidelines [5].

2. Patient information

A 60-year-old female patient, housewife, brought to our ER late at night by her family, complaining of abdominal pain and vomiting. It was associated with mild abdominal distension and inability to pass motion for three days. There was no history of fever or weight loss. The patient had a long-standing PUH with multiple previous admissions with bowel obstruction, which was treated conservatively after reduction and elective repair advice. The patient complained of chronic constipation, various comorbidities, including obesity, hypertension, and Diabetes mellitus. Her medical problems were under medical optimization in the primary health care center. The patient had a history of infrequent use of over the counter laxatives for constipation. She had no family history of similar conditions or underwent any screening program.

3. Clinical findings

General examination was unremarkable, and there were no cardiac or respiratory findings. The vital signs were arterial blood pressure 130/70 mm Hg, pulse 80/min, body temperature 37.0 °C. Clinical examination in the ER revealed an obstructed hernia with mild abdominal distension and generalized abdominal tenderness. The hernia was quickly reducible. The digital rectal examination revealed an empty rectum without palpable lesions.

The patient undergoes conservative management with Intravenous fluid resuscitation, nasogastric suction, and analgesia.

While the patient did experience some initial symptomatic improvement, it was clear over the subsequent 24 h that the obstruction had not resolved. There was a growing belief that the obstruction may not occur due to this small hernia, and there is another reason for the patient's recurrent symptoms.

4. Diagnostic assessment

Laboratory investigations were regular apart from mild hyperglycemia and hypokalemia (3.2 mEq/L). Initial abdominal X-rays showed multiple fluid levels and distended bowel loops. An abdominal computed scan (CT) scan showed complete obstruction of the small and proximal colon, with a suspected mass lesion at the splenic flexure and descending colon (Figs. 1 & 2).

5. Therapeutic intervention

Based on our significant clinical findings and CT report, the patient consented to exploratory laparotomy. In the supine position under general anesthesia, we dissected the hernia sac and achieved an abdominal wall defect of 1.5 cm. Limited midline wound extension allowed us to explore the colon at the site of suspected obstruction. Not surprisingly, we could palpate a mass at the splenic flexure. We perform formal midline access with lateral-to-medial retroperitoneal dissection at the white line of Toldt with clear identification of the left ureter.

Opening the lesser sac through gastrocolic omentum was achieved with full mobilization of the splenic flexure. We obtained vascular control and on-table bowel evacuation minimizing fecal spillage into the peritoneal cavity. Lastly, we achieved an ileocolic side-to-side anastomosis using linear staplers (Fig. 3).

We left a pelvic drain in Douglas' pouch; then, the abdominal wall was closed by Polydioxanone loop 1/0 (PDS: Ethicon) as continuous mass closure. The operative time was 160 minutes, with

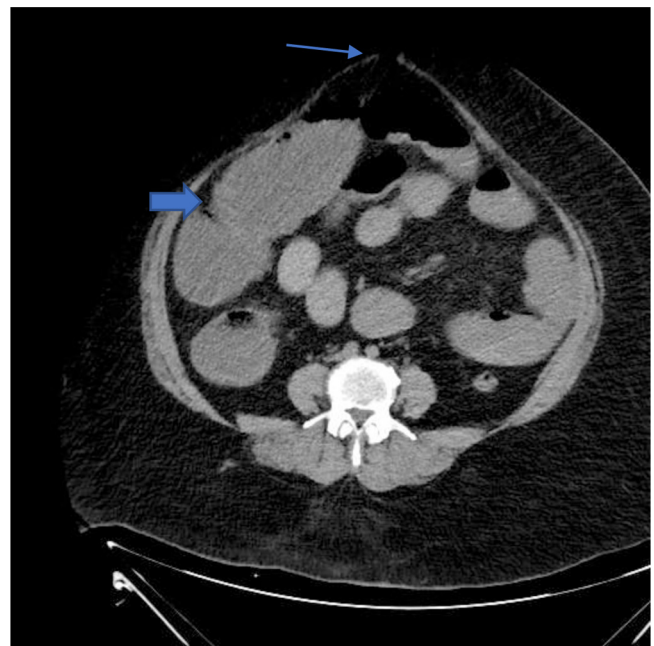


Fig. 1. Small hernia defect (thin arrow), with bowel obstruction (thick arrow).

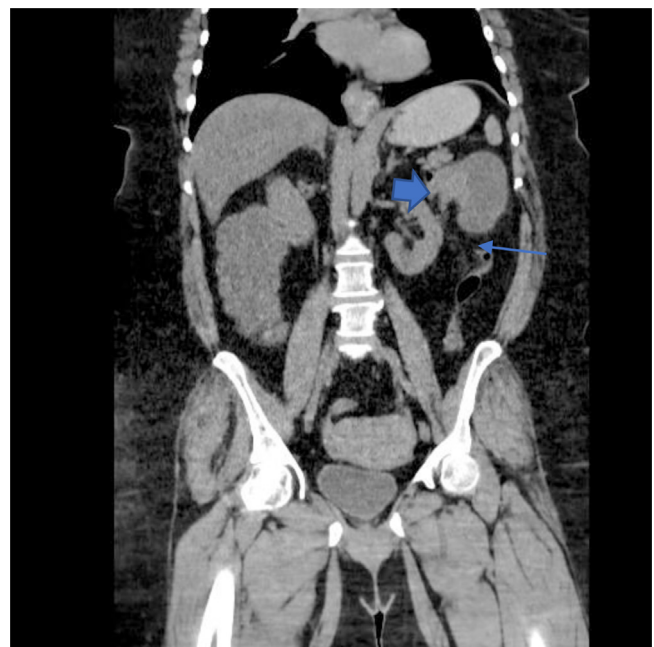


Fig. 2. Transition zone at the splenic flexure (thin arrow) with shouldering effect (thick arrow).

minimal blood loss. The consultant, with the assistance of a specialist and third-year board resident, completed the surgery.

6. Follow up

The postoperative period was uneventful, and the patient starts to ambulate in the early second postoperative day. The patient kept on thromboprophylaxis and Therapeutic antibiotics for five days to decrease postoperative wound complications. Oral intake with sips of fluid and liquid diet was allowed on the fourth postoperative day then progressively upgraded until discharge. We removed the pelvic drain on the fifth postoperative day. No surgical wound



Fig. 3. Postoperative specimen.

infection occurred, and no further radiological assessment before discharge.

The pathological analysis showed a tumor in the descending colon with safety margins for the tumor sample (which was in size $3 \times 3 \times 2$ cm) and had 18 lymph nodes. Seven glands were positive constant with pathological TNM of (pT3N2M0). The patient was discharged home after seven days of admission for regular follow in once weekly for the first month, then twice every month for the next two months, and by telephone after that for six months. According to hospital protocol, the patient transferred to the oncology center for postoperative chemotherapy. We advised the patient for a surveillance colonoscopy assessment six months after discharge. The patient was instructed for regular follow up and screening colonoscopy and announced other families for a screening program.

7. Discussion

In the era of scientific progress in analyzes and diagnostic tools, the patient's history and clinical examination remain of significant impact on patient management and its importance in surgical education, especially in the presence of many patients who may suffer

from multiple comorbidities. Cardiac and respiratory diseases can delay cancer diagnosis by competing with demand. Some disorders may also share the same symptoms as colon cancer, like diverticular and inflammatory bowel disease [3,6]. A ventral hernia is not uncommon, and watchful waiting appears to be a safe alternative in its management, especially in the view of any patient with multiple chronic diseases [7,8]. But ventral hernia symptoms like abdominal discomfort, pain, vomiting, and bowel distension may overlap with colon cancer clinical findings, incredibly when complicated; these conflicting clinical features may delay the diagnosis and treatment with associated unfavorable outcomes. This case is an example of these overlapping clinical features. Our patient complains of complicated para-umbilical hernia, which, in the same instance, masks another severe problem, colon cancer. In the female gender, a colon cancer diagnosis can be challenging due to the present multiple overlapping symptoms [3]. We hypothesized that our patient had an obstructed colonic lesion presented in a subacute recurrent pattern. When proximal bowel dilatation occurs, it comes to fill the hernia sac also, and complete bowel obstruction ensue.

Owing to the multiple patient comorbidities, when an easy hernia reduction occurred, the norm that some improvement happened, and a decision for watchful conservative follow up taken.

The indications for performing a CT scan for a small hernia have been expanded in that case as the complaint is not commensurate with the existing disease. We requested a CT scan in large hernias to measure the hernia's size and the abdominal wall's degree of weakness to decide the abdominal wall's reconstruction type [9,10]. Although the CT study was suboptimal as oral contrast only taken, it added a valuable view to the transitional zone. It helped counsel the patient and her family about the decision for possible exploration and stoma formation. The one-stage procedure was sufficient without the need for diverting stoma. Intra-operative colonic irrigation and tight control of peritoneal contamination lead to a decrease in postoperative wound infection [11–13].

We believe so far that it is possible to put a biological mesh in the contaminated field. It is also possible to use a proline mesh. In our patient, we omit the step as the size of the umbilical hernia was not too large and closed effectively with the midline incision closure and decreased risk factors for postoperative wound infection [1,4,14–16].

We concluded that expanding the indication of radiological assessment in high-risk patients is mandatory, mainly if watchful therapy is applied. Secondly, a high index of suspicion and complete history and physical examination are of paramount importance. Finally, the possibility of performing a single-stage left hemicolectomy in cases of complete colonic obstruction with satisfactory results according to published literature.

To our knowledge, this is the first report that describes the conflicting clinical presentation between ventral hernia and concealed colon cancer. We want to share our case for educational purposes and further consider a proper investigation of specific age-related diseases.

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

Approval is not necessary for case reports in our locality.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author's contribution

Amro El Hadidi: the surgeon did the operation and approved the manuscript.

Abdelgafar Hosny, Mohammed Hosny, Mohammed Al-Jasser, and Bandar Al-Mutairi assisted in writing manuscripts and data collection and were assistants in surgery and patient care.

Abdel Nasser was the radiologist who interpreted the radiology results.

Registration of research studies

N/A.

Guarantor

Amro El Hadidi.

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References

- [1] R. Cirocchi, E. Farinella, S. Trastulli, J. Desiderio, C. Listorti, C. Boselli, A. Parisi, G. Noya, J. Sagar, Safety and efficacy of endoscopic colonic stenting as a bridge to surgery in the management of intestinal obstruction due to left colon and rectal cancer: a systematic review and meta-analysis, *Surg. Oncol.* 22 (March (1)) (2013) 14–21, <http://dx.doi.org/10.1016/j.suronc.2012.10.003>.
- [2] T. Salika, G. Lyratzopoulos, K.L. Whitaker, J. Waller, C. Renzi, Do comorbidities influence help-seeking for cancer alarm symptoms? A population-based survey in England, *J. Public Health (United Kingdom)* 40 (June (2)) (2018) 340–349, <http://dx.doi.org/10.1093/pubmed/idx072>.
- [3] C. Renzi, G. Lyratzopoulos, W. Hamilton, C. Maringe, B. Rachet, Contrasting effects of comorbidities on emergency colon cancer diagnosis: a longitudinal data-linkage study in England, *BMC Health Serv. Res.* 311 (2019) 311–319, <http://dx.doi.org/10.1186/s12913-019-4075-4>.
- [4] D. Ion, R.V. Stoian, A. Bolocan, A. Cucu, M.B. Serban, D.N. Paduraru, Is prosthetic repair of the abdominal wall in clean-contaminated surgical interventions possible? *Chirurgia* 108 (6) (2013) 855–858.
- [5] R.A. Agha, M.R. Borrelli, R. Farwana, K. Koshy, A.J. Fowler, D.P. Orgill, H. Zhu, A. Alsawadi, A. Nouredin, A. Rao, A. Enam, A. Thoma, M. Bashashati, B. Vasudevan, A. Beamish, B. Challacombe, R.L. De Wilde, D. Machado-Aranda, D. Laskin, D. Muzumdar, A. D'cruz, T. Manning, D. Healy, D. Pagano, P. Goel, P. Ranganathan, P.S. Pai, S. Raja, M.H. Ather, H. kadioažlu, I. Nixon, I. Mukherjee, J. Gómez Rivas, K. Raveendran, L. Derbyshire, M. Valmasoni, M. Chalkoo, N. Raison, O. Muensterer, P. Bradley, C. Roberto, R. Affii, D. Rosin, R. Klappenbach, R. Wynn, S. Giordano, S. Basu, S. Surani, P. Suman, M. Thorat, V. Kasi, The SCARE 2018 statement: updating consensus Surgical CAse REport (SCARE) guidelines, *Int. J. Surg.* 60 (2018) 132–136, <http://dx.doi.org/10.1016/j.ijisu.2018.10.028>.
- [6] J. Regula, Diverticular disease and colorectal cancer incidental diagnosis or real association? *J. Clin. Gastroenterol.* 50 (2016) 39–40, <http://dx.doi.org/10.1097/MCG.0000000000000643>.
- [7] D. Kokotovic, H. Sjölander, I. Gögenur, F. Helgstrand, Watchful waiting as a treatment strategy for patients with a ventral hernia appears to be safe, *Hernia* 20 (2) (2016) 281–287, <http://dx.doi.org/10.1007/s10029-016-1464-z>.
- [8] C.F. Bellows, C. Robinson, R.J. Fitzgibbons, L.S. Webber, D.H. Berger, Watchful waiting for ventral hernias: a longitudinal study, *Am. Surg.* 80 (3) (2014) 245–252, <http://dx.doi.org/10.1177/000313481408000319>.
- [9] K.M. Mueck, J.L. Holihan, J. Mo, J.R. Flores-Gonzales, T.C. Ko, L.S. Kao, M.K. Liang, Computed tomography findings associated with the risk for emergency ventral hernia repair, *Am. J. Surg.* 214 (1) (2017) 42–46, <http://dx.doi.org/10.1016/j.amjsurg.2016.09.035>.
- [10] J.L. Holihan, B. Karanjawala, A. Ko, E.P. Askenasy, E.J. Matta, L. Gharbaoui, J.P. Hasapes, V.S. Tammisetti, C.R. Thupili, Z.M. Alawadi, I. Bondre, J.R. Flores-Gonzalez, L.S. Kao, M.K. Liang, Use of computed tomography in diagnosing ventral hernia recurrence: a blinded, prospective, multispecialty evaluation, *JAMA Surg.* 151 (1) (2016) 7–13, <http://dx.doi.org/10.1001/jamasurg.2015.2580>.
- [11] T.C. Hsu, Comparison of one-stage resection and anastomosis of acute complete obstruction of left and right colon, *Am. J. Surg.* 189 (4) (2005) 384–387, <http://dx.doi.org/10.1016/j.amjsurg.2004.06.046>.
- [12] O.H. Sjo, S. Larsen, O.C. Lunde, A. Nesbakken, Short term outcome after emergency and elective surgery for colon cancer, *Colorectal Dis.* 1 (7) (2009) 733–739, <http://dx.doi.org/10.1111/j.1463-1318.2008.01613.x>.
- [13] G.K. Awotar, G. Guan, W. Sun, H. Yu, M. Zhu, X. Cui, J. Liu, J. Chen, B. Yang, J. Lin, Z. Deng, J. Luo, C. Wang, O.A. Nur, P. Dhiman, P. Liu, F. Luo, Reviewing the management of obstructive left colon cancer: assessing the feasibility of the one-stage resection and anastomosis after intraoperative colonic irrigation, *Clin. Colorectal Cancer* 16 (2) (2017) 89–103, <http://dx.doi.org/10.1016/j.clcc.2016.12.001>.
- [14] M.E. Kelly, S.W. Behrman, The safety and efficacy of prosthetic hernia repair in clean-contaminated and contaminated wounds, *Am. Surg.* 68 (6) (2002) 524–528.
- [15] A.M. Carbonell, W.S. Cobb, Safety of prosthetic mesh hernia repair in contaminated fields, *Surg. Clin. North Am.* 93 (5) (2013) 1227–1239, <http://dx.doi.org/10.1016/j.suc.2013.06.012>.
- [16] D.I. Alaadeen, J. Lipman, D. Medalie, M.J. Rosen, The single-staged approach to the surgical management of abdominal wall hernias in contaminated fields, *Hernia* 11 (1) (2007) 41–45.

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