Abdominal emergency in elderly: a case of small bowel obstruction and ischemia caused by bulky IA ovarian cancer

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Case report

An 88-year-old woman was admitted to our hospital complaining of one-day history of abdominal pain, constipation and vomiting.

Her blood pressure was of 120/60 mmHg, with a heart rate of 98 beats/min, a body temperature of 98.6 °F and oxygen saturation of 99%.

Laboratory tests showed a raised white cell count of 15.50 x 10³/mmc, raised neutrophil granulocyte count (14.00 x 10³/mmc), a hemoglobin value of 14.0 g/dL with a hematocrit of 41.1%. Physical examination revealed a distended abdomen with distended abdominal veins. Abdominal palpation highlighted diffuse tenderness and a palpable mass filling the entire abdomen, Blumberg’s sign was positive, with no guarding. Peristalsis was present and

The prevalence of bowel obstruction due to ovarian cancer has been reported as varying from 5.5% to 51%; the major causes of this threatening condition are diffuse peritoneal carcinomatosis, bulky masses filling the pelvis and abdomen or postoperative adhesions (5).

The typical symptoms associated with bowel obstruction are continuous abdominal pain, nausea and vomiting, fever (temperature >37.7°C) and tachycardia (>100 beats/min). On physical examination, the most frequent findings are absence of passage of flatus (90%) and/or feces (80.6%), abdominal distension (65.3%), abdominal muscle guarding (37.3%) and rebound tenderness (4.6%) (6).

Computed Tomography (CT) represents a key diagnostic exam, although ischemia can be missed even on CT scans. In the presence of an obvious discrepancy between CT images and clinical findings in patients with bowel obstruction, urgent surgery is mandatory.

Open surgery represents the classic management of bowel obstruction and it is also essential for the EOC staging system. Patients with stage IA and IB Grade 1 cystadenocarcinoma have an extremely good prognosis after surgery and do not seem to provide further benefits from chemotherapy. For stage II-III-IV tumors chemotherapy is required (7).

Introduction

Ovarian cancer accounts for 204,000 new cases per year and 125,000 deaths worldwide (1), representing 4% of all new cancer diagnoses. Most of these lesions are epithelial ovarian carcinomas (EOC), which accounts for 90% to 95% of all ovarian cancers (2). These neoplasms are frequently diagnosed in the sixth decade, and more than 70% of the EOC occur as advanced disease: the delay in diagnosis is typically due to the vague, non-specific nature of presenting symptoms and to the lacking of sufficiently accurate early detection tests; that is why EOC has often been portrayed as a “silent killer” (3).

In recent years Goff et al. pointed out the potential utility of many non-specific symptoms (pelvic/abdominal pain, urinary urgency/frequency, increased abdominal size/bloating, and difficulty eating/feeling full) when present for <1 year and occurring >12 days per month, in alert patients and their physicians to the possible presence of an ovarian malignancy (4).

Five-year survival rates for women diagnosed with advanced disease range from 20% to 30%; on the other hand, cure rates are approximately 70% to 90% for women diagnosed with ovary-confined disease.

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Key words: bowel ischemia, cystadenocarcinoma, epithelial ovarian cancer

Abstract

Bowel obstruction resulting from colorectal and ovarian cancer is a serious and distressing complication of these malignancies. This may be caused by diffuse peritoneal carcinomatosis, bulky masses filling the pelvis and abdomen or postoperative adhesions, and should be carefully worked out by pre-operative imaging. We report the case of a small bowel obstruction and intestinal ischemia caused by a bulky (20x40 cm in diameter) cystic ovarian neoplasm that was found to be a stage IA G2 cystadenocarcinoma, successfully managed by uterus-sparing surgery.


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associated with metallic bowel sound. Rectal exploration detected the presence of a palpable iliac mass on the left side of the rectal ampulla.

An abdominal Ultra Sonography (US) was performed, followed by a CT of the abdomen/pelvis.

The abdominal US detected a large lesion with mixed cystic and solid contents and thickened of the wall (Fig. 1), suggesting an adnexal cancer.

Contrast-enhanced CT scan, performed for a better evaluation of the mass and patient’s symptoms, confirmed the suspicion of left ovarian cancer (Fig. 2).

Moreover, the CT scan showed tight adhesions between the mass and a group of small bowel loops with thickened wall and poorly enhanced.

Because of these radiological findings suggestive for bowel ischemia, the patient underwent emergency surgery: laparotomy revealed a bulky cystic neoplasm of about 40 cm arising from the left adnex presenting macroscopic appearances suggestive for malignancy (Fig. 3).

Intra-operative exploration of the abdomen highlighted a 50 cm small bowel ischemia due to the mesentery compression caused by the neoplasm (Fig. 4). A unilateral left salpingo-oophorectomy (USO) was performed, and the bulky mass was completely removed. The 50 cm ischemic ileum segment was resected, and primary anastomosis performed. After the USO and confection of intestinal anastomoses, the entire abdominal cavity was carefully examined and biopsied looking for tumor deposits within the peritoneum, without detecting any.
Pathology of the surgical specimen revealed an ovarian cystadenocarcinoma of stage IA G2.

Post-operative recovery carried out uneventfully, and the patient was discharged on postoperative day 8.

At outpatient follow up, she had not experienced any further symptoms, with a 5 years lasting disease-free history.

Discussion

Since ovarian cancer incidence increases with age, this condition has always been stated as a disease of the elderly. Moreover, advanced age is an independent adverse prognostic factor (8).

Over 70s patients usually exhibit more aggressive tumors with poor differentiation, later stages, and suboptimal treatments compared with younger patients (9). Later stage is associated with a poor prognosis (10).

Stage III serous adenocarcinoma represents the most common finding in elderly. Our patient presented a bulky mass, filling the entire abdomen and causing bowel obstruction and ischemia. Bulky tumors require a correct radiologic study over against a complicated physical examination. Because of the risk of intestinal ischemia, US and CT represent the gold-standard in Emergency Department.

US may be particularly difficult for those masses embracing pelvic visera, in these cases CT scan can be helpful in diagnostic workout, being also a fast and accurate technique for pre-treatment evaluation of ovarian cancer, predicting also the accuracy of cyto-reduction.

Septated cysts with thick walls and papillary projections that are more clearly seen after contrast administration are the typical pattern seen on CT (11).

In each case US is the most appropriate initial imaging investigation in patients suspected of having adnexal pathology both to determine its topography and to characterize it as benign or malignant. Suggestive features of malignancy comprises irregular thickening of cyst walls or septation (>3mm), vegetations or papillary formations, cystic masses greater than 10 cm diameter, solid components or completely solid lesions (12) and on Doppler low impedance arterial flow (13).

Three-dimensional Power Doppler reconstruction represents an evolution compared to Bi-dimensional Power Doppler in evaluating the tumor vascular tree, improving the sensitivity for detecting malignant lesions: the presence of micro-anerysms, arterial-venous shunts, abnormal vessels branching, tortuosity and vessel caliber changes, characterize the malignant tumors (14).

The optimal US approach in case of adnexal mass is trans-vaginal US, even tough it has limited application in case of huge masses filling the abdomen. Trans-abdominal US has lower specificity than trans-vaginal US, but it can be easy performed and visualize ascites or peritoneal nodules (but limited in assessing upper abdomen implants (15,16)) also suggestive for malignancy. Disease extent and suitability and accuracy for cyto-reduction can also be defined with imaging. Tumor deposits greater than 2 cm in the porta hepatis, diaphragmatic deposits, disease in the inter-segmental fissures of the liver, lesser sac, small bowel mesentery and gastro-splenic ligament as well as pre-sacral extra-peritoneal disease, parenchymal hepatic disease and suprarenal para-aortic lymphadenopathy are predictor of suboptimal surgical outcome (13, 17-19).

Qayyum et al. reported a positive predictive value of 94% and negative predictive value of 96% for the prediction of suboptimal debulking using CT and Magnetic Resonance (20).

Imaging findings in our patient revealed bowel obstruction, a life-threatening condition that was confirmed during surgery: this could be the presenting symptom in 8% to 30% of women with ovarian cancer (21).

Rauh-Hain et al. (22) proved bowel obstruction at presentation to be an independent adverse prognostic factor in women with ovarian cancer, since it leads to micro-metastasis in the bowel mesenteric lymph-nodes which may eventually cause a shorter progression-free survival (PFS) and overall survival (OS). This work considered only FIGO Stage III and IV tumors, and up to now studies evaluating the possible presence of mesenteric nodes micro-metastases in FIGO Stage I tumors causing bowel obstruction are still lacking.

An interesting and not so mentioned subject in literature is the involvement of uterus in EOC. In most autopsy reports from the last 3 decades dealing with metastatic pattern of EOC, the uterus is not listed as a metastatic site (23) probably because of previous hysterectomy before death (24). Uterine serosa, the myometrium and the cervix were involved in 27%, 10%, and 3% respectively in only one work (25).

Up to now, hysterectomy should be performed in FIGO Stage II-IV, while the situation is more complicated for FIGO Stage I EOC.

The European Society of Medical Oncology (ESMO) still recommend this procedure for stage I to II EOC as well, while preservation of uterus and ovaries is currently recommended for borderline ovarian cancer and non-EOC (26).

Shilder et al. (27), consider all stage I ovarian cancer patients in childbearing age women with Early-Stage malignant Epithelial Ovarian Cancer (ES/EOC) as eligible for Fertility-Sparing Surgery (FSS), although there still is general concern about the greater risk of relapse.

According to Fruscio et al. (28), FSS should be offered to all patients with EOC limited to the ovaries regardless of FIGO sub-stage and tumor grade. In our patient, the emergency setting due to mesenteric compression caused by the bulky ovarian mass and consequent bowel ischemia lead us to perform both a oophorectomy and an intestinal resection with primary anastomosis; on the other hand, having performed an intestinal resection in a elderly patient, we choose a less invasive management avoiding the additive major surgical trauma of hysterectomy.

Post-operative follow-up excluded any recurrence, with a disease free interval of more than 5 years.

Conclusions

Our experience highlights how multidisciplinary approach is a crucial point of the diagnostic workout, especially in emergency setting: dealing with abdominal pain in women always drag the challenge of differential diagnosis between abdominal and gynecological conditions.
This article points out how US and CT scan, performed by expert radiologists, represent a key diagnostic resource for a precise diagnostic workout of abdominal pain in the women. Moreover, is crucial to stress how emergency surgery should be closely fitted to the patient: our choice to avoid a hysterectomy, based on the advanced age of our patient, the concurrent surgical trauma due to intestinal resection and to the absence of evident tumor deposits within the peritoneum, allowed us to follow a less invasive management in a fragile patient, with a limited surgical risk and consequently better recovery.

Even though the avoidance of radical surgery with uterine sparing in stage I ovarian cancers was originally designed in order to preserve the fertility in childbearing age patients, we suggest that this approach could bear some benefit for elderly patients because of its minor surgical trauma.

 Consent statement

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

References

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