

Diagnosis and Treatment Difficulties in a Case of Synchronous Colon Cancer with Ovarian Metastasis and Peritoneal Carcinomatosis

Teodor Florin Georgescu¹, Claudiu Turculeț¹, Dragoș Eugen Georgescu^{2*}, Mihai Teodor Georgescu³, Traian Pătrașcu²

¹Department of General Surgery, Clinical Emergency Hospital Bucharest, Romania

²Department of General Surgery, Dr. I. Cantacuzino Clinical Hospital, Bucharest, Romania

³Prof. Dr. Alexandru Trestioreanu Oncological Institute, 022328 Bucharest, Romania

*Corresponding author:

Dragoș Eugen Georgescu, M.D.
Department of General Surgery
Dr. I. Cantacuzino Clinical Hospital
Sr. Ion Movilă, no 5-7
Bucharest, Romania
E-mail: gfdragos@yahoo.com

Rezumat

Dificultăți diagnostice și terapeutice într-un caz de cancer colonic sincron cu metastaze ovariene și carcinomatoză peritoneală

Prezentăm cazul unei paciente în vârstă de 46 de ani cunoscută cu abces mamar și tiroidectomie totală practică pentru multiple chisturi tiroidiene, ce a fost investigată în altă unitate sanitară, unde s-a prezentat pentru inapetență și scădere ponderală. A fost trimisă la spitalul nostru cu suspiciunea de neoplasm ovarian stadiul IIIC, ridicată în urma investigațiilor paraclinice efectuate: imagistica prin rezonanță magnetică (IRM) pelvin și scorul Roma (23,16%). Colonoscopia realizată după internarea în Spitalul Clinic de Urgență București evidențiază în apropierea unghiului splenic colonic o formațiune tumorală circumferențială ce ocupă lumenul colonic în totalitate cu aspect infiltrativ-ulcerativ din care se prelevează biopsii, rezultatul histopatologic fiind de adenocarcinom de tip colorectal bine diferențiat. Se intervine chirurgical practicându-se citoreducție tumorală completă. Rezultatele histopatologic și imunohistochimic ale pieselor rezecate au relevat originea colonică a proliferării tumorale, concluzionând tumora primară ca fiind un adenocarcinom colonic mucinos cu metastaze peritoneale multiple și ovariene bilateral.

Cuvinte cheie: adenocarcinom colo-rectal, neoplasm ovarian, metastaze

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Abstract

We present the case of a 46 year old female patient, with a personal history of breast abscess and total thyroidectomy for multiple thyroid cysts, who was investigated in a different healthcare facility for loss of appetite and weight loss. She was referred to our hospital with a suspicion of stage IIIC ovarian cancer, based on the paraclinical investigations which were made: a pelvic MRI (magnetic resonance imaging) and the ROMA score (23,16%). The colonoscopy done at the Clinical Emergency Hospital of Bucharest after admitting the patient revealed a circumferential tumor with an ulcerative and infiltrative aspect, which occupied in totality the lumen of the colon, near the splenic flexure. Biopsies were taken at this level. The histopathology result describes a well-differentiated colorectal adenocarcinoma. A surgical intervention with complete cytoreduction was performed. Immunohistochemistry and histopathology reports of the tissue provided confirmed the origin of the tumor as being colonic, concluding that the primary tumor was a colonic mucinous adenocarcinoma with multiple peritoneal and bilateral ovarian metastases.

Key words: colorectal adenocarcinoma, ovarian tumor, metastasis

Introduction

Among the most frequent sites for metastases from colon cancer are the liver, lungs, brain, peritoneum and bones (1). The incidence of ovarian metastasis from a primary colo-rectal cancer is reported to be between 1.6 to 7.4% (2,3). Primary ovarian cancers and metastatic ovarian tumors are difficult to distinguish clinically. Up to 45% of metastatic ovarian tumors are clinically considered as primary malignant tumors. The best first-line treatment for colo-rectal cancers with ovarian and peritoneal metastasis is controversial (4,5).

Case Report

We present the case of a 46 year-old female known with an operated breast abscess and a total thyroidectomy for multiple thyroid cysts, who was referred to our hospital from another medical center for a high suspicion of ovarian cancer staged IIIC after paraclinical investigations. The first symptoms of the patient were represented by loss of appetite and weight loss. The MRI done prior to her admission in our hospital revealed a multiloculated left adnexal cyst, suggestive of a malignant tumor and a biloculated right adnexal cyst, also

suggestive of malignancy. Moreover, it revealed multiple tumor nodules at the level of the greater omentum with the aspect of omental cake, with nodules at the level of the parietal peritoneum, with relations to the parietal surface of the liver and spleen at the subdiaphragmatic level, bilaterally, in the pelvic region. Also, tumor nodules were present at the level of the visceral peritoneum of the stomach and the small intestine. The presence of ascites was also noted in medium quantity. The ROMA score was 23.16%. When she was admitted to our hospital the patient complained of mild digestive symptoms such as constipation and epigastric pain. We decided to do a superior digestive endoscopy which showed grade B reflux esophagitis and a colonoscopy which diagnosed a circumferential tumor at the level of the splenic flexure of the colon, which occupied in totality the colonic lumen, with an infiltrative and ulcerative aspect. Biopsies were taken at this level. The histopathology exam concluded the biopsy specimens to be well differentiated colon adenocarcinoma. The blood tests done at admission were in normal ranges. Intra-operatively, we diagnosed two synchronous colon tumors, one localized in the splenic flexure, and the other in the hepatic flexure,

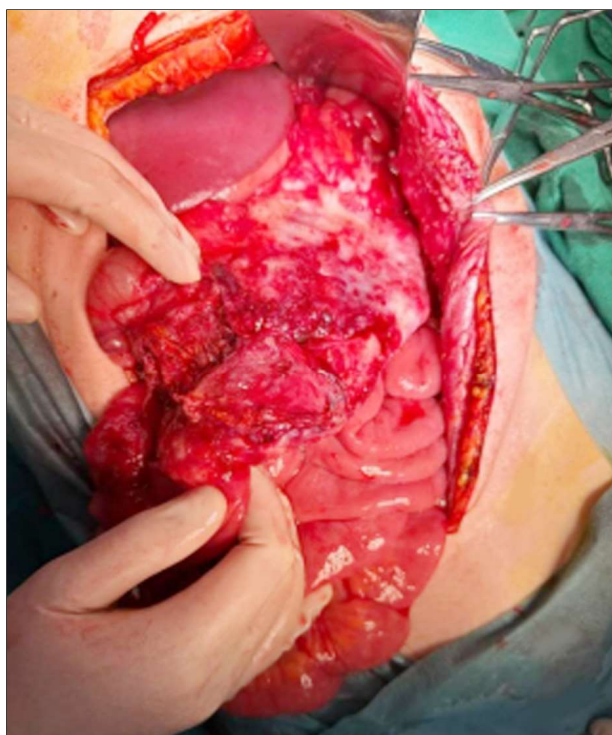


Figure 1. Intraoperatively aspect of synchronous colon cancer, “omental cake” and peritoneal carcinomatosis



Figure 2. Specimen of resected colon containing the primary malignant tumor

tumors of both ovaries as described in the MRI, multiple peritoneal and greater omentum tumor nodules with a peritoneal index of approximately 25 (*Fig. 1*). A large volume of ascites was also found. We decided to perform an extensive complete cytoreductive surgery which consisted of: total hysterectomy with bilateral adnexectomy, subtotal colectomy with total omentectomy and splenectomy, terminal ileostomy and radical peritonectomy with left phrenoraphy, gastroraphy and enteroraphy.

Postoperatively, the patient was admitted to the ICU (intensive care unit) where the evolution was slowly favorable with no major complications. The cytology exam of the ascites fluid showed malignant cells. The histopathology exam performed on the resected specimens (*Fig. 2*) concluded the primary malignant tumor to be a mucinous colonic adenocarcinoma with multiple bilateral ovarian and peritoneal metastases. The immunohistochemistry tests: CK 20, CEA,

DOG positive in tumor cells and CK7, WT1 negative in tumor cells revealed the colonic origin of the malignant tumor. The staging of the tumor was pT4M1c (stage IVC). The patient was discharged 12 days after surgery. Approximately 4 months after surgery the patient underwent 5 sessions of oncological adjuvant treatment with FOLFOX/Bevacizumab and has a good quality of life with no late postoperative complications.

Discussion

Clinically, differential diagnosis between primary and metastatic ovarian cancer is, in some cases, difficult for clinicians and radiologists. Some authors recommend that, when a mixed solid and cystic ovarian mass is diagnosed by the computer tomography (CT), it should be considered as a metastatic tumor from another primary cancer in patients with a medical history of gastric or colonic carcinoma (6).

In these complex cases of neoplasia, the multidisciplinary team (MDT) formed by the surgeon, medical oncologist, radiologist, radiation oncologist, gastroenterologist and pathologist, is crucial throughout the entirety of the treatment of the patient. The MDT must establish, firstly, whether the metastatic disease is resectable and, then, guide the entire management of these patients (7,8). In selected patients with colorectal cancers and limited peritoneal metastasis, radical cytoreductive surgery associated with hypertermic intraperitoneal chemotherapy (HIPEC) can prolong survival if the procedure is performed in experienced centers, but this treatment is not yet a standard of care, because of lack of randomized, phase III trials (9,10). On the other hand, a recent trial could not demonstrate a survival benefit of adding HIPEC to radical surgery. Moreover, when HIPEC is associated with cytoreductive surgery, more post-operative late complications were registered (11). In other studies, lymphadenectomy, ovariectomy as well as resection of single metastases, showed a better overall survival in patient series (8). According to the Japanese guidelines, surgery is recommended for metastatic colo-rectal cancer, if the metastasis and the primary colo-rectal tumor are resectable (1). The immuno- histochemical analysis of the specimens resected is very useful, in some selected cases, to establish the primary malignant tumor. Most of primary ovarian cancers have a positive expression of CK7 and a negative one for CK20. In contrast, the primary colo-rectal carcinoma exhibit positive staining for CK20 and negative staining for CK7 (12,13). Another useful marker to differentiate a primary gastrointestinal carcinoma from other primary malignant tumors is represented by CDX2, which is positive in primary tumors of the gastrointestinal tract (14,15).

Pressurized intraperitoneal aerosol chemotherapy (PIPAC) is an intraperitoneal treatment method of low-dose chemotherapy administered as a pressurized aerosol in selected patients with peritoneal metastases. In patients with unresectable peritoneal

metastases from colon cancer, PIPAC may be a useful treatment option for converting these cases to resectability, increasing overall survival with acceptable grade 3 and 4 toxicity (16).

Many studies from the literature show that PIPAC should be a part of the multimodal treatment in patients with peritoneal metastases from gastrointestinal cancers, especially in patients with unresectable disease, when PIPAC can convert these cases to resectable stages. Some of the advantages of using PIPAC are: increased regression of the pathology and low morbidity associated with this treatment (17).

Conclusion

In some cases, ovarian metastases from colorectal cancer can mimic a primary malignant tumor, making it very challenging for a specialist to put a correct diagnosis. Pre-operative investigations of the gastro-intestinal tract with consecutive biopsies and pathological exam, if any tumor is diagnosed, should be considered in every patient with a high suspicion of digestive tract carcinoma. The best first-line treatment for primary colorectal tumor with ovarian metastasis and peritoneal carcinomatosis remains controversial. Even though the role of cytoreductive surgery is not standardized in these cases, it should always be considered, in some selected patients, if complete resection is feasible. The immuno-histochemical tests are very important to determine the primary carcinoma, as well as, in some cases, to determine the prognosis of the neoplasia.

Author's Contributions

All authors contributed equally to this work.

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Conflict of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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Ethical Statement

All procedures performed were in accordance with the ethical standards of the 1964 Helsinki Declaration and its later amendments. Informed consent was obtained.

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