Location of recurrent asymptomatic ovarian cancer through endoscopic ultrasound

Joaquim Carvalho-Jr[1,2], Beatriz Formighieri[1], Sheila Filippi[1,2], Lucio Rossini[1,2]
[1]Centro Franco-Brasileiro de Ecoendoscopia, [2]Santa Casa de São Paulo, São Paulo, Brazil

ABSTRACT

Ovarian cancer is frequent and recurrence happens in about 75% of patients. As it presents high rates of relapse, the exams for this diagnosis are widely discussed. Beside this, there have been discussions about benefits for early anatomic diagnosis and whether endoscopic ultrasound (EUS) can be used to track the relapse of the disease. We present a case, in which anatomic location and histological definition of an asymptomatic recurrence of the ovarian cancer was misdiagnosed with conventional methods, but was possible through EUS.

Key words: Endoscopic ultrasonography, ovarian neoplasms, recurrence

INTRODUCTION

Ovarian cancer is the fifth largest cause of death related to cancers and it is responsible for more than half of all deaths related to gynecological cancer.[1] The diagnosis is usually carried out in its advanced stage and even though it responds well to primary treatment, achieving clinical remission in 50% of cases, a complete cure is rare and recurrence happens in three out of four patients.[2]

The patients who present complete clinical remission are monitored by physical exams, cancer antigen-125 (CA-125) serum dosage and radiological exams, such as, computed tomography (CT) or tomography associated with positron emissions (PET-CT).[3,4]

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Website: www.eusjournal.com

DOI: 10.4103/2303-9027.151353

CASE REPORT

Sixty-three-year-old nulliparous patient, presenting with second relapse of epithelial ovarian cancer diagnosed by the increasing level of serum tumor markers with negative radiological studies.

The patient was diagnosed with epithelial ovarian cancer 7 years ago, when she underwent surgical resection (Wertheim-Meigs surgery), associated with adjuvant chemotherapy using cisplatin/paclitaxel (CP), presenting complete clinical remission, with the absence of signs and symptoms, normal levels of CA-125 and negative PET-CT.

Five years ago, she developed the peritoneal relapse, and was treated with neoadjuvant chemotherapy with CP, peritonectomy with hyperthermic intraperitoneal chemotherapy, followed by adjuvant chemotherapy with the same drugs, once again, presenting complete clinical remission.

One year ago, she presented with an increase in CA-125 serum level for 3 months. On this occasion, she had a PET-CT, which showed the densification of

Address for correspondence
Dr. Lucio Rossini, Centro Franco-Brasileiro de Ecoendoscopia, São Paulo, Brazil. E-mail: luciorossini@uol.com.br
Received: 2014-05-03; **Accepted:** 2014-07-02

peritoneal fat in the lower abdomen with fibro-cicatricial characteristics, unchanged in comparison to the previous examinations, besides showing heterogeneous parietal gastric thickening associated with the densification of the surrounding fat planes. There was no evidence of abnormal contrast enhancement [Figure 1]. The upper digestive echo-endoscopy showed unspecific parietal gastric thickening, a small slide with perihepatic ascites and three oval-shaped hypo-echogenic and heterogeneous formations with septations and anechoic content, measuring around 10 mm [Figure 2], located between the hepatic hilum and the peripancreatic cephalic region that were punctured with 22-gauge needle.

Histologic study confirmed the diagnosis of metastatic serous cystadenocarcinoma, the immunohistochemical study indicated the gynecological tract as the primary site [Figure 3]. It was not possible to determine accurately whether the injury observed in endoscopic ultrasound (EUS) were tumor implants or lymph node recurrence.

After the diagnosis of a second relapse, the patient underwent chemotherapy with CP, but did not show significant improvement. Due to resistance to platinum-based chemotherapy, she switched to bevacizumab and liposomal doxorubicin therapy, with good response, presenting, once again, complete clinical remission. Nowadays, the patient's clinical exams are normal. CA-125 serum levels been normal and the upper digestive echo-endoscopy confirmed regression of the previously identified lesions.

DISCUSSION

In the English literature, there are seven cases where EUS assisted in the diagnosis of recurrent ovarian tumor. In all cases, the lesions had been detected previously by another method [Table 1]. In the current report, the anatomic diagnosis was exclusively performed by EUS, and all other imaging studies were normal.

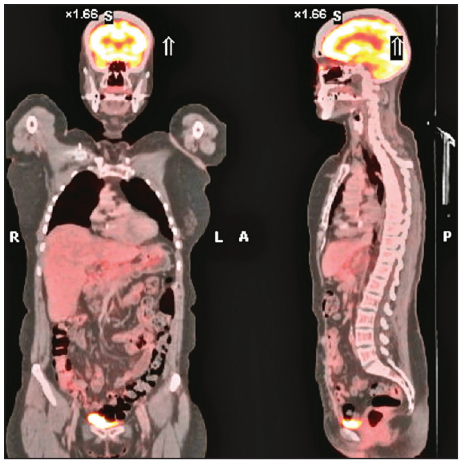

Figure 1. Positron emission tomography-computed tomography aspect

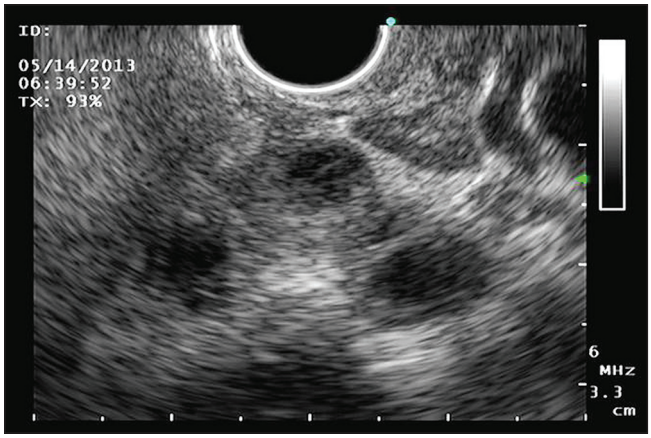

Figure 2. Echo-endoscopic aspect

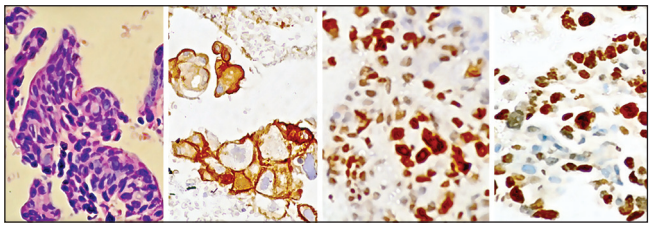

Figure 3. Histologic and immunohistochemical (WT-1, cancer antigen-125 and estrogen receptor antibodies) aspect

Table 1. Case reports with the lesions detected previously by another method

Author	Year	Age	Recurrence site	Size (cm)	Initial diagnosis	Confirmation
Silva *et al.*[5]	2006	60	Pancreatic head	11	CT	EUS-FNA
Hadzri and Rosemi[6]	2012	60	Pancreatic head/body	4.7×3.6	CT	EUS-FNA
Sangha *et al.*[7]	2003	62	Gastric body	4	EGD	EUS-FNA
Kethu *et al.*[8]	2005	35	Gastric antrum	2	EGD	EUS-FNA
Jung *et al.*[9]	2009	49	Gastric antrum	2.5×2.5	PET/EGD	ESD*
Carrara *et al.*[10]	2011	70	Gastric body	4.8×3.8	EGD	EUS-FNA
Akce *et al.*[11]	2012	55	Gastric antrum	3.7×3.4	EGD	EUS-FNA

*ESD with enucleation, CT: computed tomography, PET: Positron emission tomography, EGD: Esophagogastroduodenoscopy, EUS: Endoscopic ultrasound, FNA: Fine needle aspiration, ESD: Endoscopic submucosal dissection

In about 70% of patients, increased serum levels of CA-125 may be the first sign of relapse, preceding clinical relapse with anatomical localization by conventional methods (CT and PET-CT) in an average period of 4 months.[12] In the current report, the recurrence could be diagnosed by EUS in 3 months. The authors believe that the recurrence pattern justifies the fact that the diagnosis was done only through EUS, which presents a higher sensitivity for lesions with minor dimension. Epithelial ovarian cancer, in a significant proportion, shows relapse through nodular and diffuse micro-lesions, in contrast to other solid tumors that present with masses with larger dimensions.[2]

There have been a lot of discussions about the real impact of early anatomic diagnosis of tumor relapse. Cannistra affirm that there is no evidence of benefit for starting early chemotherapy in patients that present only positive tumor markers. For these patients, hormonal therapy, using tamoxifen or aromatase inhibitor, is recommended, while chemotherapy and cytoreductive surgery (CRS) is used as a second plan for patients whose relapses have been confirmed through imaging methods.[3] Fleming *et al*. affirms that the levels of CA-125 can help recruit people to secondary CRS, and a shorter period between the increase in CA-125 level and surgical intervention correlate to a higher occurrence of ideal resection, increasing overall survival from 23 months to 47 months.[13] In more recent study, Wang *et al*. also showed an increase in overall survival with early diagnosis.[2] Even with some divergences between authors, early diagnosis has an impact on how the cases are handled, whether because it influences the type of therapy that will be decided on or because it increases overall survival.

In 2006, Herman published characteristics of a good screening examination: one that can detect a high proportion of disease in its preclinical state, safe to administer, at a reasonable cost, provide improved health results and be widely available.[14] Due to anatomic limitations, the upper digestive EUS does not give access to all possible relapse sites and certainly would not detect, in high proportions, a recurrence of ovarian cancer, rating it as unfit in some of the established criteria.

After treating the case and literature review, we believe that EUS brought benefits to the patient. EUS shouldn't be recommended as a screening procedure for mass in recurrence epithelial ovarian cancer, but maybe it will have a place in the screening for selective cases with increasing CA-125 without the exact anatomic location by current standard methods.

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How to cite this article: Carvalho J, Formighieri B, Filippi S, Rossini L. Location of recurrent asymptomatic ovarian cancer through endoscopic ultrasound. Endosc Ultrasound 2015;4:63-5.

Source of Support: Nil. **Conflict of Interest:** None declared.