CASE REPORT

Synchronous endometrioid endometrial and ovarian cancer in a 34-year-old woman

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SUMMARY

Ovarian cancer is the leading cause of death from gynaecological malignancy in developed countries. Synchronous endometrioid endometrial and ovarian cancer in patients appears with different clinical characteristics compared to patients with isolated endometrial cancer. A 34-year-old woman with lower abdominal pain of 1 year duration presented at the emergency department. On gynaecological examination, she had a left and midline pelvic mass. A transvaginal ultrasound showed it to be a complex hypervascularised mass, with cystic and solid components on left adnexal region. Ectopic pregnancy and pelvic inflammatory disease were excluded. Serum levels of tumour marker CA125 and ROMA were increased. The MR showed a complex mass, suggestive of primary fallopian tube or ovarian tumour. The patient underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy, pelvic and para-aortic lymph node dissection and subcolonic omentectomy. Histopathology revealed a synchronous endometrioid endometrial and ovarian cancer.

BACKGROUND

Ovarian cancer causes around 15 520 deaths annually in the USA. It is the fifth most lethal malignancy in women and the leading cause of death from gynaecological cancer in developed countries. However, it is still relatively uncommon in developing countries.[1]

More than 70% have a late-stage diagnosis contributing to the high mortality of ovarian cancer.[2]

Regarding histological type, over 90% of all ovarian cancers are epithelial, and among these, 16–25% are endometrioid carcinomas.[3]

The aetiology of synchronous endometrioid endometrial and ovarian cancer has not yet been clarified. Several theories have been proposed. The theory of extended or secondary Müllerian system explains the development of primary carcinomas in multiple sites under the assumption that the ovarian epithelium, fallopian tube, uterine corpus and cervix will behave as a unit.[4 5] Furlan, in 2006, provided a molecular insight and suggested that these tumours "could be the result of either independent molecular events affecting multiple cells separately under the action of a common carcinogenic agent, or one molecular event in a single clonal progenitor that gives rise to multiple foci of tumourigenesis via mechanisms of widespread clonal expansion."[6]

Tobacco use and endometriosis may contribute to its aetiology as opposed to obesity and oestrogen excess.[7] Regarding endometriosis, two theories support this relation: (1) a potential direct malignant transformation on endometriotic implants, and (2) the idea that endometriosis and cancer have many predisposing factors (environmental, immunological, hormonal and genetic) in common.[8]

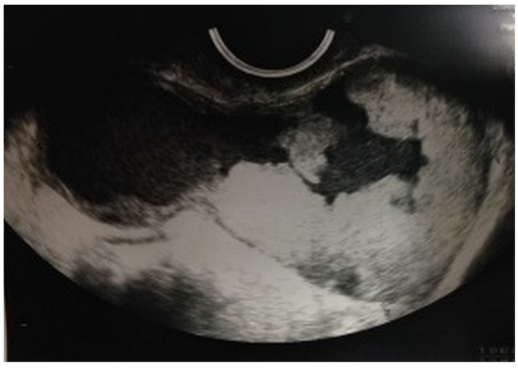

Figure 1 Pelvic ultrasound—cystic and solid components.

CASE PRESENTATION

A 34-year-old woman (gravida 1, para 1) presented to the emergency department with lower abdominal pain for the past year. Her medical and family histories were unremarkable, namely for colon and/or endometrial cancer. On gynaecological examination, the patient appeared with a painful left and midline pelvic mass.

INVESTIGATIONS

Pelvic ultrasound examination identified a complex hypervascularised mass, with cystic and solid

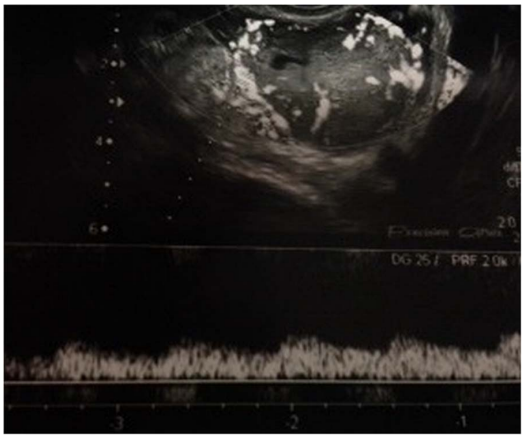

Figure 2 Pelvic ultrasound—complex hypervascularised mass.

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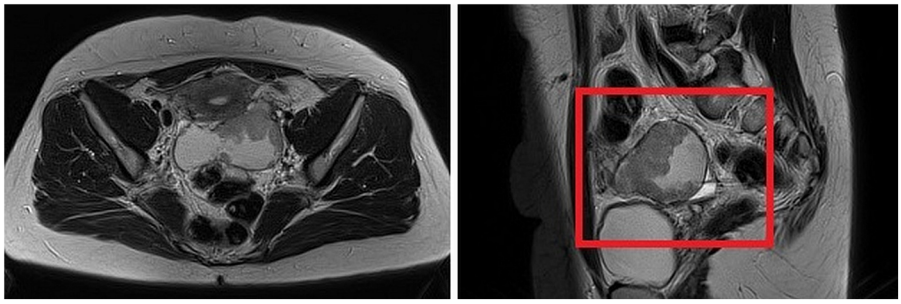

Figure 3 MRI—complex tumoural mass.

components measuring 8×6×4 cm on the left adnexal region (figures 1 and 2).

Pregnancy and pelvic inflammatory disease were excluded by laboratory analysis.

Serum levels of tumour marker CA125 and ROMA were increased (122 U/mL (<35 U/mL) and 66% (<7.5%), respectively). The abdomen and pelvic MRI showed a heterogeneous mass, suggestive of primary fallopian tube or ovarian tumour without evidence of distant involvement (figure 3).

The patient underwent an exploratory laparotomy, which revealed an ovarian tumour. An intraoperative examination was performed, and was highly suggestive of malignancy. A total abdominal hysterectomy, bilateral salpingo-oophorectomy, pelvic and para-aortic lymph node dissection and subcolonic omentectomy were conducted (figure 4).

Histopathology revealed a synchronous endometrioid endometrial and ovarian cancer.

DIFFERENTIAL DIAGNOSIS

Lower abdominal pain and an adnexal mass in a 34-year-old woman are highly suggestive of ectopic pregnancy or pelvic inflammatory disease. In the present case, the former hypothesis was not compatible with the long lasting symptoms. Both hypotheses were ruled out by laboratory tests and transvaginal ultrasound. Ultrasonography findings were in favour of an ovarian/fallopian tumour. Tumour markers (CA125 and ROMA) were requested and their values were increased. MRI reinforced the hypothesis of a tumour deriving from the fallopian tube or an ovarian tumour.

TREATMENT

An exploratory laparotomy was decided on. An approximate 7 cm left ovarian mass was found. As the intraoperative examination was highly suggestive of malignancy, a total abdominal hysterectomy, bilateral salpingo-oophorectomy, pelvic and para-aortic lymph node dissection and subcolonic omentectomy were conducted. The histological examination revealed a gastrointestinal (GI) endometrioid ovarian cancer and a GI endometrioid endometrial cancer. The peritoneal wash cytology showed no tumour cells and no metastases were found.

OUTCOME AND FOLLOW-UP

The patient had an uncomplicated postoperative course. Her case was discussed in a multidisciplinary board meeting and the consensus was for clinical, tumour marker and imaging surveillance. The surgery was performed 5 months ago.

DISCUSSION

A diagnosis of concomitant endometrioid endometrial and ovarian cancer is rare, particularly at the age of 34 years. Exclusion of other more common causes of pelvic/abdominal pain is, therefore, necessary. Ultrasonography was the mainstay of diagnosis, prompting further examinations.

Coexistence of endometrial carcinoma and ovary carcinoma occurs in about 5% of patients with endometrial cancer and 10% of patients with ovarian cancer.[9]

Some authors have suggested that these tumours are more common in younger patients, can be diagnosed at an early stage and are associated with low-grade disease; however, there is some controversy regarding the behaviour of these tumours.[10–12]

A final diagnosis of synchronous ovarian and endometrial cancer requires ruling out two other possible diagnoses: primary endometrial cancer with ovarian metastasis or primary ovarian cancer with endometrial metastasis.[13] Ulbright and Roth, in 1985, proposed histological criteria to distinguish synchronous primary cancers from metastatic lesions.[14] These criteria were revised in 1998 by Scully *et al*.[15] Since then, several authors have proposed methods for molecular analysis, but no consensus has been reached yet.[13]

A subset of endometrioid ovarian cancers in patients under the age of 53 years can be associated with loss of mismatch

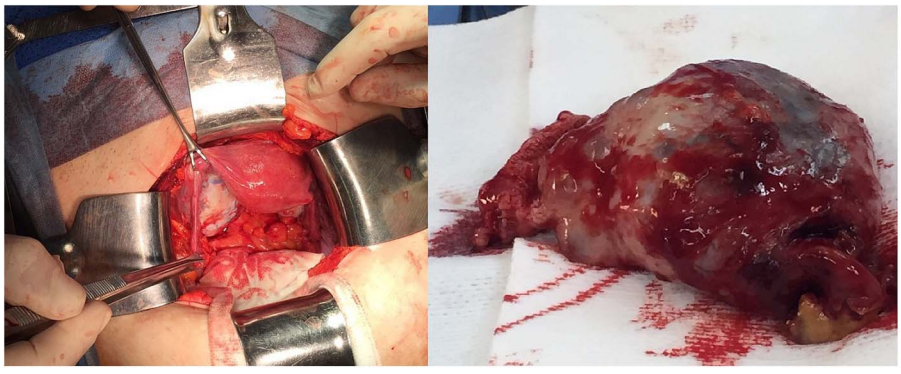

Figure 4 Ovarian tumour.

repair genes expression. In these patients, the risk of a second synchronous or metachronous primary malignancy is higher.[16]

Immunohistochemical staining for mismatch repair genes expression is recommended for all women under 53 years of age with endometrioid or clear cell carcinomas of the ovary. Following recommendations, immunohistochemistry studies are underway in our patient.[16]

At the time of publication results are pending.

Learning points

- Endometrioid and ovarian cancer is rare, particularly in a 34-year-old woman.
- Its diagnosis is difficult and requires a high level of suspicion, after excluding more frequent causes of lower abdominal pain in this age group.
- In this patient, an endometrial cancer diagnosis was unexpected. However, the early diagnosis and treatment led to a better outcome.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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