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Three synchronous primary pelvic cancers – a case report

M.E. Căpîlna[1], S.C. Rusu[1], C. Laczko[1], B. Szabo[1], C. Marian[2]

[1] First Clinic of Obstetrics and Gynecology, University of Medicine and Pharmacy, Târgu-Mureş
[2] Department of Pathology, University of Medicine and Pharmacy, Târgu-Mureş (Romania)

Summary

The occurrence of synchronous primary gynaecologic malignancies is a relatively common event. However, the occurrence of three different pelvic cancers is very rare. In this report, the authors describe the clinical, surgical, and pathological findings of a patient with synchronous primary malignancies of the fallopian tube, endometrium, and sigmoid colon. To the authors' knowledge, it is the first case described in the literature with such an association of primary synchronous cancers.

Key words: Synchronous cancer; Fallopian tube cancer; Endometrial cancer; Sigmoid colon cancer.

Introduction

Synchronous occurrence of endometrial and adnexal (ovarian or tubal) cancer in female genital tract is a well known event in gynecological oncology. They may indicate either metastatic or independent neoplasms and the clinical or therapeutic implications and prognosis are very different in each occasion. Compared to metastatic dual cancer, two simultaneous primary cancers are relatively rare and can be easily recognized if the histologic types of each cancer are different. Furthermore, the occurrence of a pelvic third cancer is an extremely rare event.

The aetiology of synchronous malignancy is uncertain but it has been postulated that embryologically similar tissues of the female genital tract may develop synchronous neoplasms when simultaneously subjected to carcinogens [1, 2].

Recently, the authors experienced three primary cancers occurring in both tubes, endometrium, and sigmoid colon with three different histologic patterns. This case, along with the diagnosis and the treatment of synchronous female genital malignancy, will be briefly reviewed.

Case Report

In April 2013, a 61-year-old white female, gravida 1, para 0, was referred to the present clinic with the diagnosis of endometrial cancer and a possible synchronous ovarian cancer. She was menopausal since age of 50 and she described a vaginal bleeding that had begun three months prior. Her past medical and surgical histories were relatively unremarkable, but her family history revealed a duodenum cancer of her mother, a colon cancer of her father, and a stomach cancer of her grand-father. A clinical and ultrasound examination in March 2013 revealed the uterine origin of bleeding, a normal volume uterus, but with a 18-mm thick endometrium with a polyp-like image without apparently myometrial invasion and multiseptated, 111 x 97 x 90-mm mass having both solid and cystic components in the right ovary, suggesting malignancy; the left ovary appeared normally. A pelvic computed tomographic scan confirmed the existence of the previously mentioned multiseptated cystic right ovarian mass and minimal ascites in the pelvic cavity. In addition, there were no abnormal findings in the abdominal cavity and thorax, with no extraperitoneal enlarged lymph nodes. She underwent in April 2013 a diagnostic uterine curettage under anesthesia in a private hospital, revealing a grade 3 endometriod adenocarcinoma of the endometrium. The CA-125 was elevated 141.8 U/ml. Routine blood test investigations were normal. The clinical diagnosis was Stage IA, grade 3 endometrial carcinoma and a synchronous (primary or metastatic) ovarian cancer.

At laparotomy, a right adnexal tumour involving both tube and ovary, of 11 x 10 x 9 cm, but mobile, with smooth surface and both solid and cystic parts was discovered. The frozen section revealed malignant tissue. There was a small amount of ascites in the abdomen. The left ovary and the uterus appeared normal. On the sigmoid colon, a tumour producing bowel stenosis and a retraction of the serosa, very suggestive for malignancy, was discovered. The authors performed a total abdominal hysterectomy with bilateral adnexectomy, pelvic, and para-aortal lymphadenectomy, total omentectomy, appendectomy, recto-sigmoid colon resection (about 20 cm), and peritoneal biopsies. The whole procedure lasted 275 minutes. There were no intraoperative complications. The postoperative recovery was uneventful and she was discharged home after hospitalisation for nine days.

The final pathology report described a high-grade (MD Anderson grading system) serous adenocarcinoma of right adnexa, involving both tube and ovary; its origin could not be detected, but contained different microscopic patterns: solid, papillary, cystic, micropapillary, and glands (Figure 1). In the left tube, a high-grade serous adenocarcinoma involving the mucosal and muscular layer, but without serosal involvement was found. The left ovary was microscopically normal. For these reasons, the authors considered also the right adnexal tumour of tubal origin. The cytology of the ascites revealed malignant cells. There were no metastases into the appendix, peritoneum, omentum, and in the 25 from the right and 35 from the left side pelvic and from the

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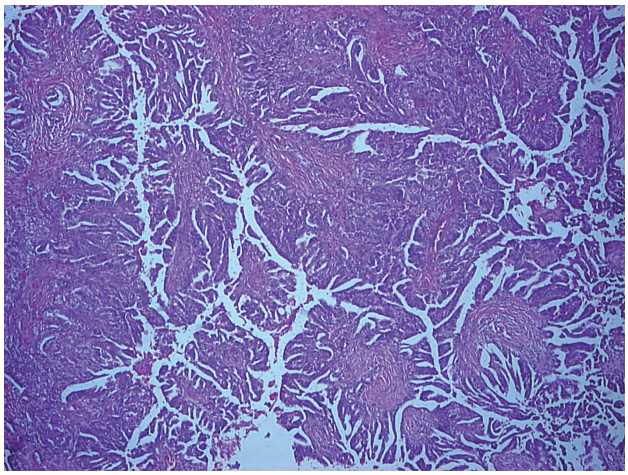

Figure 1. — High-grade (MD Anderson grading system) serous adenocarcinoma of right adnexa, involving both tube and ovary (Hematoxylin and eosin staining).

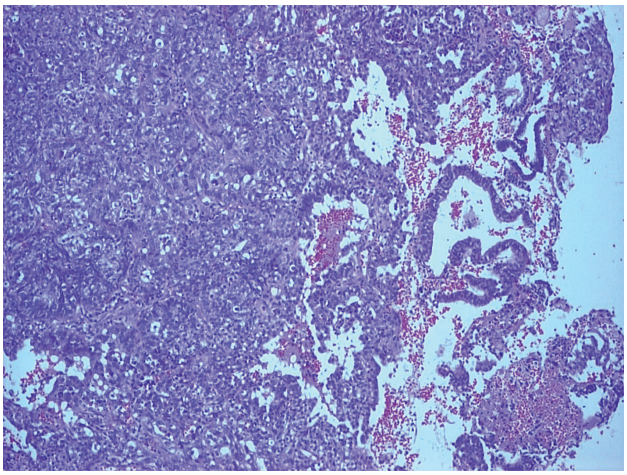

Figure 2. — Endometrioid type adenocarcinoma grade 3 (Hematoxylin and eosin staining).

55 para-aortal lymph nodes. Final pathological staging was a high-grade tubal cancer stage pT1cN0.

In the endometrium, an endometrioid type adenocarcinoma grade 3 with mucosal invasion only was found (pT1a grade 3N0) (Figure 2).

The third synchronous cancer was a moderate differentiated adenocarcinoma of the recto-sigmoid junction with subserosal invasion without metastases in the 17 regional lymph nodes (pT3N0 Dukes-MACB2) (Figure 3).

The oncology commission in the present hospital decided to begin adjuvant treatment focusing on the tubal cancer. The patient underwent carboplatin/paclitaxel chemotherapy and she is doing well after four courses.

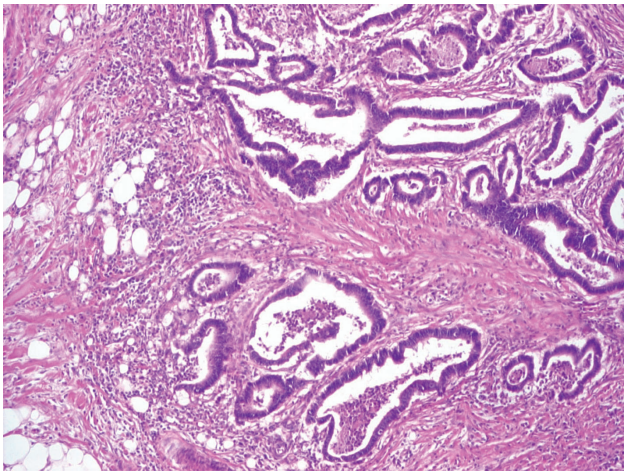

Figure 3. — Moderate differentiated adenocarcinoma of the recto-sigmoid junction with subserosal invasion (Hematoxylin-eosine).

Discussion

The most commonly reported synchronous malignancies are the coexistence of ovarian and endometrial cancers, but genital tract malignancies can arise from more than two anatomical sites, as primary neoplasia. Although the aetiology of synchronous malignancies remains unclear, it has been postulated that the extended Müllerian system, comprising ovarian epithelium, fallopian tube, uterus, and cervix respond as a single morphological unit to produce primary cancers in different sites. Another theory, which could explain even other sites, suggests that these neoplasm originate in metaplasia occurring in different tissues [4]. Until now, limited cases of synchronous primary genital cancers have been reported in the literature, and even less for a third pelvic cancer with an extra-genital origin.

Taking into considerations only two cancers out of three of the present patient (fallopian tube and endometrium), Eisner *et al.* [1] described also two synchronous primary cancers of fallopian tube and endometrium, and Atasaver *et al.* [3] another five sites synchronous cancers involving ovary, both tubes, endometrium, and cervix. The present search did not find a similar case in the literature, comprising three synchronous malignancies involving two genital sites (tube and endometrium), and another pelvic extra-genital one with different embryologic origin (sigmoid colon).

The present pathologic findings fulfilled the conditions described previously for identification of primary synchronous cancers, such as different histologic types (major criterion) or all the following minor criteria: [1] both tumours confined to primary sites; [2] no direct extension between tumours; [3] no lymphovascular tumour emboli; [4] no or only superficial myometrial invasion; and [5] distant metastases [5-7].

Simultaneous detection of malignancy in different organs challenges the clinicians and pathologists to make correct diagnosis and arrange proper management [8]. Appropriate therapy for synchronous cancers must be planned indi-

vidually. Different parameters such stage, grade, extension, tumour resection margins, etc, should be taken into consideration. As a consequence, the present oncology staff decided for this special case that most aggressive tumour necessitating first line adjuvant treatment is the high-grade serous adnexal adenocarcinoma.

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Address reprint requests to:
M.E. CAPILNA, M.D.
First Clinic of Obstetrics and Gynecology,
University of Medicine and Pharmacy,
str. Gheorghe Marinescu no. 50,
540136, Târgu-Mureş (Romania)
e-mail: mcapilna@gmail.com