Gynecologic Oncology Reports 6 (2013) 22–24

Contents lists available at ScienceDirect

Gynecologic Oncology Reports

journal homepage: www.elsevier.com/locate/gynor

Case Report

Papillary serous carcinoma of the cervix mixed with squamous cells: A report of the first case ☆

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ARTICLE INFO

Article history:
Received 24 March 2013
Accepted 15 July 2013
Available online 25 July 2013

Keywords:
Papillary serous carcinoma of the cervix
Adenosquamous carcinoma
Therapy

ABSTRACT

Objective: Primary papillary serous carcinoma (PPSC) of the cervix is rarely recognized, with the aggressive and unpredictable course. Here we report a case of primary adenosquamous papillary serous carcinoma of the cervix in a woman who underwent comprehensive treatment.
Case: A 53-year-old woman presented with irregular vaginal bleeding in hospital. The patient with a diagnosis of PPSC by an intracolposcopic biopsy received radical hysterectomy with bilateral salpingo-oophorectomy, right pelvic lymphadenectomy, left pelvic lymph node dissection, and postoperative concurrent chemoradiotherapy. Postoperative immunohistochemistry showed that CK5/6, CK7, P16, CEA, CA12-5 and P53 were positive. During 17 months after operation, the patient demonstrated distant metastases of lymph nodes and finally died of brain metastasis.
Conclusions: Papillary serous adenocarcinoma of the cervix mixed with squamous cell carcinoma has not been reported since now, and here, this is the first documented case. Despite surgery and concurrent chemoradiotherapy, which were reported as effective therapeutic strategies for papillary serous adenocarcinoma of the cervix, the patient showed a poorer prognosis. Taken together, papillary serous adenosquamous carcinoma of the cervix could be more malignant than pure papillary serous adenocarcinoma.

Introduction

Papillary serous carcinomas (PSCs), which are frequently found in the ovarian, fallopian tube, endometrium and peritoneum, rarely arise in the cervix. To our knowledge, there have been no more than 50 cases since now (Lurie et al., 1991; Power et al., 2008; Ueda et al., 2012). Carcinomas with a mixture of malignant glandular and squamous cell components are known as adenosquamous carcinomas that are uncommon in the cervix. Although adenosquamous carcinomas do not grossly differ from adenocarcinomas, this is the first documented case of papillary serous adenocarcinoma mixed with squamous cells in the endocervix and the optimal treatment is still unknown. We reported herein a rare case of papillary serous adenosquamous carcinoma of the uterine cervix.

Case report

A 53-year-old G2P1 woman with a history of irregular vaginal bleeding for 6 months, presented to our hospital. Ultrasonography and colposcopy revealed a 2.6 × 2.1 cm in diameter lesion with the obscure boundary in the cervix. A biopsy of the cervical mass identified a diagnosis of squamous cell carcinoma (SCC). The cancer antigen (CA) 12-5 was 3460 U/ml (normal <35 U/ml) and the carcinoembryonic antigen (CEA) 75.23 ng/ml (normal < 5 ng/ml). Magnetic resonance imaging (MRI) showed an enlarged uterine cervical mass and the swelling of multiple lymph nodes in her retroperitoneum and pelvis. Further metastatic examination including computed tomography (CT) scan of head and chest, electronic colonoscopy, and epigastrium ultrasonography did not show any metastases in other organs. The tumor was classified as International Federation of Gynecology and Obstetrics (FIGO) stage IIa SCC.

Radical hysterectomy with bilateral salpingo-oophorectomy and left pelvic node dissection and right pelvic lymphadenectomy was performed. Intraoperatively, the uterus was a little hypertrophy and several swelling lymph nodes were observed inside the pelvis, and a rapid biopsy of which

Abbreviations: PPSC, Primary papillary serous carcinoma; CEA, carcinoembryonic antigen; SCC, squamous cell carcinoma; CA, cancer antigen; MRI, magnetic resonance imaging; CT, computed tomography; AC, adenocarcinoma.

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http://dx.doi.org/10.1016/j.gynor.2013.07.003

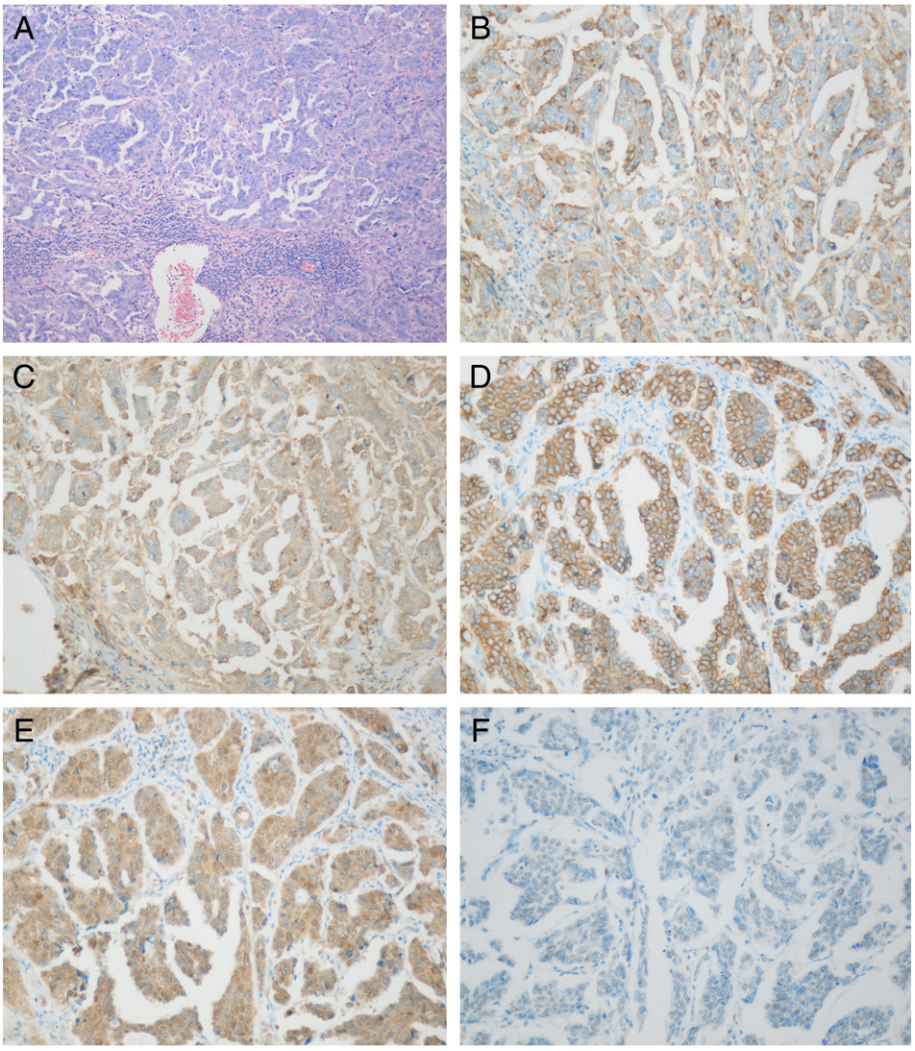

Fig. 1. Papillary serous adenosquamous carcinoma of the cervix. A) Histological section demonstrates the nuclear pleomorphism (H&E × 100). B) Atypical pleomorphic nuclei are positive for CA12-5 (original × 200). C) Atypical cells are positive for CEA (original × 200). D) Atypical pleomorphic nuclei are positive for CK7 (original × 200). E) Malignant cells are positive for P16 (original × 200). F) Atypical cells are positive for P53 (original × 200).

demonstrated metastases. Other organs did not show any abnormal appearance. The resected mass was a hard and swollen tumor on the posterior wall of the cervix, which was 4 × 3 cm in diameter. All the specimens were used for histopathological examination. The tumor was defined as adenosquamous carcinoma (ASC) and most part of it was papillary serous carcinoma (PSC). In addition, the tumor had involved itself in right fallopian tube, bilateral ovary, pelvic lymph nodes, and the full thickness of the cervix without involvement of the outer membrane, but not in the inferior vagina. Immunohistochemistry (IHC) showed strong positivity for CK5/6, CK7, P16, CEA and CA12-5, intermediate for P53 but negativity for CK20.

In view of the intraoperative observation indicating that the tumor was in late stage, the patient was determined to receive concurrent chemoradiotherapy with paclitaxel and carboplatin. Due to severe myelosuppression, the patient received only four cycles of chemotherapy and one time of radiation, after which CA12-5 fell to 682.30 U/ml and CEA 12.14 ng/ml as described previously (Zhou et al., 1998). Two months later, a 1.4 cm enlarged lymph node was observed in the left posterior triangle of the neck by CT scan. Furthermore, a biopsy of this lymph node showed metastatic squamous cell carcinoma. The second radiotherapy was performed on her left neck at 54 Gy. After that, the lymph node diminished. The patient also received five cycles of cisplatin and three additional cycles of gemcitabine/cisplatin. However, the patient's condition deteriorated with the observation of intracranial metastasis and she died in October 2012.

Discussion

Adenosquamous carcinoma (ASC) of the cervix is a relatively uncommon histological subtype of cervical cancer. The squamous cell component is poorly differentiated and shows little keratinization. Histologically, the tumor is characterized by nests and cords of small oval cells with a peripheral palisading arrangement. It has been reported that adenosquamous carcinoma of the cervix has a poorer prognosis than pure adenocarcinoma or squamous cell carcinoma (Longatto-Filho et al., 2009; Huang et al., 2012).

Primary serous carcinoma of the cervix (PSCC) is uncommon, recently described as one subtype of cervical adenocarcinoma (Young and Scully, 1990; Gilks and Clement, 1992). Only approximately 47 cases have been reported, many of which had pelvic and retroperitoneal lymph node metastases on diagnosis regardless of the clinical stage (Lurie et al., 1991; Power et al., 2008; Ueda et al., 2012). A few studies reported mixed papillary serous carcinoma containing endometrioid adenocarcinoma, clear cell adenocarcinoma or well-differentiated villoglandular adenocarcinoma, but not with squamous cell carcinoma (Zhou et al., 1998). Here we reported a case with regard to PSCC mixed with SCC.

The therapeutic strategies for both the primary lesion and potential metastatic sites include surgery, postoperative chemotherapy and radiotherapy, or concurrent chemoradiotherapy (Cherry and Glucksmann, 1956). Radical hysterectomy has long been performed to the patients with the tumors from FIGO stages I to IIa in our hospital, whereas radiation treatment can be used for all stages. Papillary serous carcinomas can also arise in ovary, fallopian tube, endometrium and peritoneum. It is noteworthy that the cervical PSC was histologically similar to the peritoneal and ovarian carcinomas (Ueda et al., 2012). In this case, using ultrasonography, CT and MRI scans, we did not find ovarian lesions, omental cakes or tubal masses; this tumor was finally diagnosed to have originated from the cervix and classified as FIGO stage IIa. However, during the operation, abnormal mass was also observed in fallopian tube and ovary, postoperative biopsy of which demonstrated adenosquamous carcinoma that could not preclude a diagnosis of original cancer of fallopian tube or ovary (Terada, 2009). In view of intraoperative observation, radical hysterectomy with bilateral salpingo-oophorectomy and removal of right pelvic lymph nodes was performed in this case. In order to improve survival, postoperative chemoradiotherapy was performed even though there was still a controversy on the benefit of chemotherapy or pelvic radiation therapy to improve survival of patients with different stages of ASC (Huang et al., 2012; Peters et al., 2000; Monk et al., 2005; Sedlis et al., 1999). Here, primary radiotherapy showed some effect on reduction of lymph node metastasis in the left posterior triangle of neck.

The typical cytological features of PSCC were monolayered sheets of mildly atypical glandular cells with papillary branches. We studied their immunohistochemical profile, using a panel of antibodies against CK5/6 for squamous cell carcinoma, CK7, CEA, CA12-5, P16 and P53 for adenocarcinoma, all of which were immunopositive and indicated as mixed adenosquamous carcinoma (Fig. 1.). The result is consistent with a previous report that P53 and CEA immunostaining significantly correlated with the PSCC morphology (Nofech-Mozes et al., 2006).

PSCCs are aggressive and are usually found with lymph node metastases. Whereas, Ueda et al. reported that advanced PSCC showed a remarkable response to paclitaxel and carboplatin combination chemotherapy (Ueda et al., 2012), however, postoperative concurrent chemoradiotherapy did not work well with our patient, only alive for 17 months after surgery. This may be due to that mixed AC/ASC behaves more aggressively than pure PSCC, which was consistent with some reports that AC/ASC is an independent prognostic factor for cervical cancer patients (Huang et al., 2012).

Conflict of interest statement

The authors declare no conflict of interest.

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