Human Pathology: Case Reports 11 (2018) 79–82

Contents lists available at ScienceDirect

Human Pathology: Case Reports

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

Case Report

Uterine carcinosarcoma-induced pulmonary tumor thrombotic microangiopathy: A case report

Takashi Hibiya[a,*], Shigeaki Umeda[b], Koji Okudela[b], Mitsuko Furuya[c], Shoji Yamanaka[a], Kenichi Ohashi[a,b]

[a] Department of Pathology, Yokohama City University Hospital, 3-9 Fukuura, Kanazawa-ku, Yokohama 236-0004, Japan
[b] Department of Pathology, Yokohama City University Graduate School of Medicine, 3-9 Fukuura, Kanazawa-ku, Yokohama 236-0004, Japan
[c] Department of Molecular Pathology, Yokohama City University Graduate School of Medicine, 3-9 Fukuura, Kanazawa-ku, Yokohama 236-0004, Japan

ARTICLE INFO

Keywords:
Pulmonary tumor thrombotic microangiopathy
Pulmonary tumor embolism
Vascular endothelial growth factor
Tissue factor
Uterine carcinosarcoma

ABSTRACT

Pulmonary tumor thrombotic microangiopathy (PTTM) is a rare complication of cancer. It is histologically characterized by fibrocellular intimal proliferation in small pulmonary arteries and arterioles in patients with metastatic carcinoma. It is most frequently caused by adenocarcinoma. We report a case of PTTM caused by uterine carcinosarcoma in a 62-year-old female, who exhibited reductions in blood pressure and oxygen saturation. This is the first case report about uterine carcinosarcoma-induced PTTM. Histologically, the primary uterine carcinosarcoma included serous carcinoma and homologous sarcoma components. Many tumor emboli were observed across large regions of both lungs. PTTM was found in the lower lobes. Interestingly, the embolized tumor cells were all derived from the adenocarcinoma component. Immunohistologically, the primary carcinosarcomaexhibited weak positivity for tissue factor (TF), but was negativefor vascular endothelial growth factor-A (VEGF-A). The PTTM tumor cells were positive for TF and weakly positive for VEGF-A. This case suggests that any tumor containing adenocarcinoma can cause PTTM, and immunostaining of the primary tumor might be worthless for determining whether PTTM will develop. PTTM should always be considered during the differential diagnosis of dyspnea in patients with adenocarcinoma.

1. Introduction

Pulmonary tumor thrombotic microangiopathy (PTTM) was first identified by von Herbay et al. in 1990 [1]. It is a rare complication of cancer (in Japan it exhibited a prevalence of 1.4% among autopsy cases involving patients who died of cancer) [2]. Clinically, it is associated with the development of clinical signs of pulmonary hypertension and can cause acute or subacute cor pulmonale and respiratory failure [1]. PTTM patients have a very poor prognosis, and adequate treatment is required to improve their prognosis, although it is extremely difficult to diagnose PTTM before death [2].

PTTM is histologically characterized by fibrocellular intimal proliferation in small pulmonary arteries and arterioles among patients with metastatic carcinoma [1] and is most frequently caused by adenocarcinoma (93.3%) [2]. PTTM can also be caused by adenosquamous carcinoma (3.3%) or salivary duct carcinoma ex pleomorphic adenoma (3.3%), but no cases of sarcoma- or carcinosarcoma-induced PTTM have been reported [2]. The most common primary site is the stomach (60.0%), followed by the lungs (16.7%) [2]. Histologically, poorly differentiated adenocarcinoma is most commonly associated with PTTM (57.7%), followed by moderately differentiated adenocarcinoma (34.6%) and well-differentiated adenocarcinoma (7.7%) [2]. The pathogenic events associated with PTTM start with a microscopic tumor cell embolism and induce the local activation of coagulation factors and fibrocellular intimal proliferation [1]. The embolized tumor cells do not occlude the affected vessels; however, coagulation and intimal proliferation can lead to stenosis or occlusion [1].

The pathogenic mechanism underlying PTTM is still unknown, but previous studies have suggested that tumor cells in pulmonary arteries produce cytokines, such as vascular endothelial growth factor-A (VEGF-A) [3–9], tissue factor (TF) [3–5,7,8], platelet-derived growth factor (PDGF) [6,10,11], and osteopontin (OPN) [6,8]. TF is required for the activation of the coagulation system and upregulates VEGF-A expression [12], and both molecules have been implicated in pulmonary hypertension [13]. PDGF and OPN have been suggested to be involved in the pathogenesis of PTTM [6,8].

Herein, we report a case of PTTM caused by uterine carcinosarcoma. PTTM caused by carcinosarcoma is extremely rare. In fact, no cases of

* Corresponding author.
E-mail address: hibiya-cib@umin.ac.jp (T. Hibiya).

https://doi.org/10.1016/j.ehpc.2017.11.003
Received 17 September 2017; Received in revised form 17 November 2017; Accepted 28 November 2017
2214-3300/ © 2017 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/BY-NC-ND/4.0/).

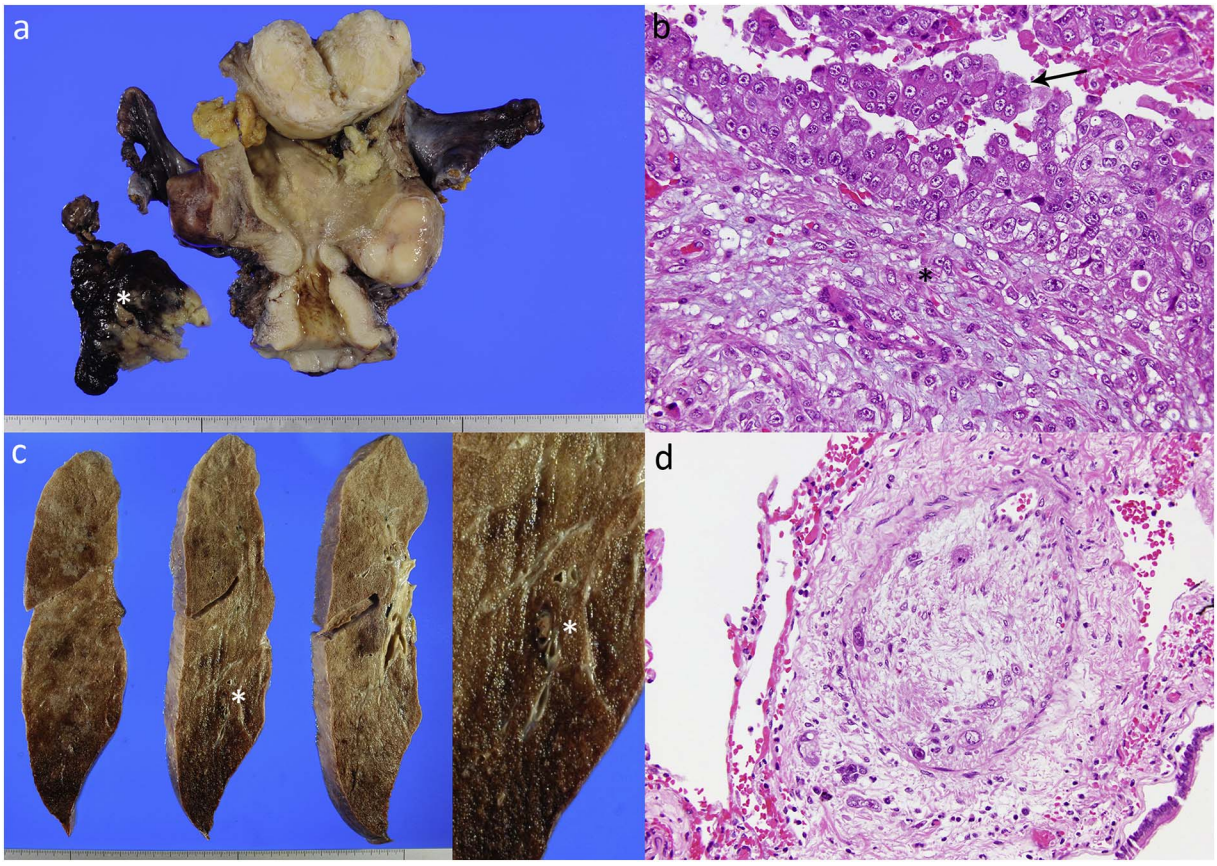

Fig. 1. (a, b) Surgically resected uterus.
The asterisk shows the broken polypoid component of the tumor, which bulged out into the intrauterine cavity (a). Histologically, the tumor had two components. The arrow shows the adenocarcinoma component. The asterisk indicates the sarcoma component (b).
(c, d) The resected right lung at autopsy.
The asterisk shows the embolized fibrin thrombus (left: whole picture, right: enlarged picture). No tumor nodules were found macroscopically (c). Histologically, intimal thickening of the tumor-embolized arteries was observed (d).

PTTM caused by carcinosarcoma or uterine adenocarcinoma have been reported in the English literature, making this the first case report about uterine carcinosarcoma-induced PTTM.

2. Clinical summary

A 62-year-old Japanese female presented with abnormal vaginal bleeding at the age of 61. An endometrial biopsy revealed carcinosarcoma, and the patient underwent modified radical hysterectomy. Histologically, she was diagnosed with uterine carcinosarcoma (adenocarcinoma (90%), and sarcoma (10%)) (Fig. 1a and b). Morphologically, the adenocarcinoma was poorly differentiated, being composed of papillary and solid regions. The sarcoma component displayed homologous features. Immunohistochemically, the epithelial component was strongly positive for p53 and p16INK4a, whereas only a limited part of it was positive for the estrogen receptor. These findings indicated that the carcinoma belonged to the serous type. The tumor had invaded less than half of the myometrium, and no cervical involvement was seen. However, it had metastasized to the right ovary and disseminated to the serous surface of the Douglas' pouch and the colon surface. The tumor stage was determined to be pT3bN0M1 (UICC-TNM, 7th edition). Venous invasion was noted, but lymphatic invasion was not. The patient was treated with postoperative chemotherapy. Eight months after the operation, peritoneal dissemination was detected. Additional chemotherapy was administered, but it failed, and the tumor progressed. Further chemotherapy was administered as a palliative treatment. The patient's condition was serious, but remained stable. At 14 months after the operation, she suddenly lost consciousness, exhibited reductions in blood pressure and oxygen saturation, and died 1 h later. An autopsy was performed to determine the patient's cause of death.

3. Autopsy findings

Disseminated tumor nodules were found in the peritoneum, gastric wall, left diaphragm, and left pleura. Peripancreatic, paraaortic, and perigastric lymph node metastases were also detected. The disseminated/metastatic tumors were histologically classified as serous carcinomas. A small sarcoma was found in the peritoneum. Massive ascites (2900 ml) was noted, which reflected the presence of peritonitis carcinomatosa. The weight of the right lung had increased (left: 170 g, right: 390 g). Many tumor emboli were observed across large parts of both lungs. In both lower lobes, intimal thickening of the tumor-embolized arteries was seen, and we considered that this histological change represented PTTM. In the pulmonary artery of the right lower lobe (S9), a massive embolized fibrin thrombus (10 mm in size) was found, and it was associated with alveolar hemorrhaging (Fig. 1c and d). Bronchopneumonia was also noted in the right lobe.

We determined that the direct cause of death was sudden respiratory failure caused by a fibrin clot occluding the pulmonary artery in the right S9 section. In addition, the bilateral tumor emboli and right bronchopneumonia appeared to have further aggravated the patient's respiratory dysfunction.

We performed immunohistochemical staining of the primary uterine carcinosarcoma tissue and the metastatic cells in the PTTM lesions using antibodies against VEGF-A, TF, PDGF-A, pan-cytokeratin, and

Download English Version:

https://daneshyari.com/en/article/8807921

Download Persian Version:

https://daneshyari.com/article/8807921

Daneshyari.com