Advanced Breast Angiosarcoma Completely Responding to Gemcitabine-Containing Chemotherapy

Zhi-Guo Luoa,b* Qian Wanga,b* Wei Penga,b Xi-Chun Ha,b Xiao-Nan Honga,b

aDepartment of Medical Oncology, Fudan University Shanghai Cancer Center, bDepartment of Oncology, Shanghai Medical College, Fudan University, Shanghai, China

Keywords
Breast neoplasm · Angiosarcoma · Lung metastases · Gemcitabine · Vincristine · Cisplatin · Chemotherapy

Summary
Background: For patients with anthracycline-resistant metastatic angiosarcoma, there is currently no available standard for second-line therapy, and a need exists for novel effective regimens to improve response rates.

Case Report: We report here on a case of a primary angiosarcoma of both breasts in a 34-year-old woman presenting with lung metastases. Upon completion of 3 cycles of the MAID regimen (mesna, adriamycin, ifosfamide, dacarbazine), computed tomography showed disease progression. Subsequently, a second-line chemotherapy was started using the GVP regimen (gemcitabine, vincristine, cisplatin). Complete response of the lung metastases was achieved after 6 cycles of treatment.

Conclusion: In the absence of an effective therapy among patients with anthracycline-resistant metastatic breast angiosarcoma, a GVP chemotherapy regimen can be performed as a selective option.

Introduction
Primary angiosarcoma of the breast is a rare and highly aggressive malignancy which accounts for about 0.05% of malignant breast neoplasms [1, 2]. The 3-year disease-free survival and overall survival are 14 and 38%, respectively [3]. Bilateral primary breast angiosarcoma is even more infrequent. Only 1 case of metachronous bilateral angiosarcoma of the breast has been reported thus far [4]. We herein report a case of complete remission of anthracycline-resistant lung metastases of a bilateral primary angiosarcoma of the breast after treatment with the GVP chemorenogram.

Case Report
A 34-year-old female patient had noticed diffuse enlargement of both breasts by more than one-third over a 1-year period, accompanied by nipple retraction, occasional galactorrhea, local skin thickening, and
Chemotherapy
Responding to Gemcitabine-Containing Advanced Breast Angiosarcoma Completely
vincristine (1.4 mg/m² BSA, maximum 2 mg) day 1, and cisplatin (25 mg/treatment (fig. 4). During subsequent follow-up, the patient developed a
March 2010, clinical complete remission was evident after 6 cycles of
be gradually decreasing in size, to the point of partial remission. By
2 and 4 cycles, CT showed the metastatic lesions in the right lung field to
subcutaneous nodules on the waist and back have since emerged.
which was treated by local surgical excision and radiotherapy. Multiple
1
were diffusely swollen with cutaneous hypertonicity and nipple retrac-
tion. There were no associated ulcerated lesions or nipple suffusions. On
palpation, the breasts were solid with large lumps occupying almost the
whole breast and adherent to the skin with limited mobility. The patient
had previously refused surgical treatment and radiation exposure to the
breast.
A core needle biopsy was taken from the right breast, and a possible
angiosarcoma was diagnosed. On immunostaining (2009–09148), the
tumor cells were positive for factor VIII, CD31, vimentin, and Ki-67
(+= 30%), and negative for SMA, CD68, AE1/AE3, and CAM5.2, indicat-
ing an endothelial nature. A bilateral simple mastectomy was performed
on 28 July 2009. Postmastectomy pathology confirmed a poorly differenti-
ated bilateral breast angiosarcoma (figs. 1 and 2). Tumor dimensions on
macroscopic examination were 10.0 × 6.0 × 3.0 cm for the left breast and
14.0 × 9.0 × 4.0 cm for the right breast. The nipple dermis and subcutane-
tous tissue were focally involved. The tumor was close to the inferior mar-
gin with only 0.2 cm clearance.
On 8 November 2009, 3 months after surgery, a computed tomogra-
phy (CT) scan with contrast enhancement revealed a high-density
mass in the right lung field (fig. 3). For palliative therapy, a combination
chemotherapy with the MAID regimen (mesna, adriamycin, ifosfamide,
dacarbazine) was initiated. After 3 cycles, a CT scan for reevaluation
showed progression of the disease. Subsequently, the patient was changed
to the GVP chemoregimen (gemcitabine, vincristine, cisplatin) as a
salvage therapy. Doses and administration schedule were as follows: gem-
citabine (1,000 mg/m² body surface area (BSA)) over 30 min days 1 and 8,
vincristine (1.4 mg/m² BSA, maximum 2 mg) day 1, and cisplatin (25 mg/
m² BSA) days 1–3. The protocol was repeated in 3-week intervals. After
2 and 4 cycles, CT showed the metastatic lesions in the right lung field to
be gradually decreasing in size, to the point of partial remission. By
March 2010, clinical complete remission was evident after 6 cycles of
treatment (fig. 4). During subsequent follow-up, the patient developed a
1 × 0.6 cm discolored skin nodule on the right chest wall (June 2010),
which was treated by local surgical excision and radiotherapy. Multiple
subcutaneous nodules on the waist and back have since emerged.

Fig. 1. Atypical endothelial cells with numerous mitotic figures and
hyperchromatic nuclei lining the vascular structures (H&E ×400).

Fig. 2. Poorly differentiated tumor with area of necrosis and massive
hemorrhage (H&E ×200).

Discussion
Breast angiosarcomas are very rare and tend to affect women
in their 3rd or 4th decade of life (mean age 38 years). Half of
the patients may be misdiagnosed due to the scarcity of the
disease and clinical similarity with benign lesions. A typical
clinical manifestation is a rapidly enlarging painless mass
deply embedded in the breast tissue. 12% of patients present
with initial diffuse enlargement and blocks of caelence of the
affected breast. Some cases with persistent subcutaneous
bleeding tend to be ignored as the tumor may be masked.
A purple discoloration of the overlying skin due to tumor
infiltration is a frequent symptom; however involvement of
the underlying muscles is rare [1, 3, 5]. Breast angiosarcomas
are aggressive and tend to recur locally and metastasize
widely. They mainly spread hematogenously while lymphatic
metastasis is generally absent. The most frequent sites of dis-
tant metastasis are lung, liver, bone, and skin [3]. The progno-
sis is generally poor and based primarily on tumor size, tumor
grade, completeness of surgery, and performance status. An-
giosarcomas secondary to irradiation, local relapses, and dis-
tant metastases are adverse prognostic indicators [4, 6–8].
Surgical resection is recommended as the primary treat-
ment. Adjuvant radiotherapy and chemotherapy are consid-
ered helpful to reduce the local recurrence rate in poorly
differentiated tumors [9], but a real effect on survival is not
proven. Palliative chemotherapy is the basic concept of treat-
ment in advanced disease. Anthracycline-based regimens
have emerged, by consensus, as the standard first-line therapy
for angiosarcomas as well as most other subtypes of soft tissue
sarcomas [6]. Paclitaxel and liposomal doxorubicin have
also shown some activity [10]. However there is still no
general agreement about a standardized therapy in patients
progressing on anthracycline. It has been reported that tro-
fosfamide plus gemcitabine are feasible and can be safely

Advanced Breast Angiosarcoma Completely
Responding to Gemcitabine-Containing
Chemotherapy

Breast Care 2012;7:414–416
Downloaded by: 54.70.40.11 - 11/24/2017 3:41:04 PM
administered [11]. Furthermore, docetaxel has demonstrated a certain efficacy [12], and capecitabine alone or combined with docetaxel have also shown some effect [13–16]. However the efficacy of these regimens is limited, and only a few patients can benefit from second-line treatment [17]. In the case reported here, we used a GVP regimen after failure of 3 cycles of MAID chemotherapy and achieved complete remission of the lung metastases upon completion of 6 treatment cycles. Hence, the GVP regimen seems to be an option as a second-line treatment modality for anthracycline-resistant breast angiosarcomas. More trials are needed to confirm its clinical value.

Disclosure Statement

The authors confirm that there was no conflict of interest.

References