Advanced Breast Angiosarcoma Completely Responding to Gemcitabine-Containing Chemotherapy

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Keywords
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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 chemoregimen.

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 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 HYPERCHROMATIC NUCLEI LINING THE VASCULAR STRUCTURES (H&E ×400). 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, indicating an endothelial nature. A bilateral simple mastectomy was performed on 28 July 2009. Postmastectomy pathology confirmed a poorly differentiated 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 subcutaneous tissue were focally involved. The tumor was close to the inferior margin with only 0.2 cm clearance.

On 8 November 2009, 3 months after surgery, a computed tomography (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 over to the GVP chemoregimen (gemcitabine, vincristine, cisplatin) as a salvage therapy. Doses and administration schedule were as follows: gemcitabine (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.
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**