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The Efficacy of Chemotherapy against Metastatic Malignant Phyllodes Tumors of the Breast

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Abstract

Phyllodes tumours are rare neoplasms of the female breast. Ten-year survival of 42% is reported after surgical treatment of malignant phyllodes tumours. Metastatic tumours have a poor prognosis with no long-term survival. We present the case history of a 43 year old woman with a pulmonary metastasis from a malignant phyllodes tumour of the breast treated with chemotherapy. The role of radiation therapy and chemotherapy is not established and has not been studied in randomized trials due to the rarity of the tumor. At present, there is no consensus that patients with high-grade phyllodes tumors of the breast will benefit from either of these modalities.

Keywords: Malignant phyllodes tumors; Lung; Metastasis; Chemotherapy

Introduction

Malignant Phyllodes Tumors (MPT) of the breast are associated with a 25% incidence of distant metastasis, which is invariably fatal with very few reports of long-term survival.

Case Report

A 43 year old woman has been followed since 2007 for a phyllode tumor grade 3 of the right breast, and underwent a mastectomy. The resection margins were reported to be clear. One year later, a rapidly growing local recurrence appeared, surgical excision was done by radical mastectomy removes part of the pectoral muscle with negative margins. Results of a histologic examination showed MPT. In January 2009, a second recurrence occurred, which was excised and treated with local radiation therapy (42 Gy). Results of chest radiography, bone scan, and liver ultrasonography were all normal. By October 2009, the patient had pain and tenderness over the midsternum. Chest radiography and computed tomographic examination of the chest showed a destructive lesion in the anterior cortex of the midsternum and multiple small pulmonary metastases. Figure 1A Cytologic examination of a needle aspiration biopsy specimen from the sternal lesion confirmed metastatic cystosarcoma (Figure 2 and 3). Treatment with doxorubicin 60 mg/m^2 and ifosfamide 3 g/m^2 was begun. After three cycles of treatment, a partial remission of the pulmonary metastases was achieved Figure 1B. An additional three courses of treatment were given. This was completed without adverse effects. Treatment was stopped in April 2010, and the patient was well with stabilization of disease when last seen at follow-up in August 2011.

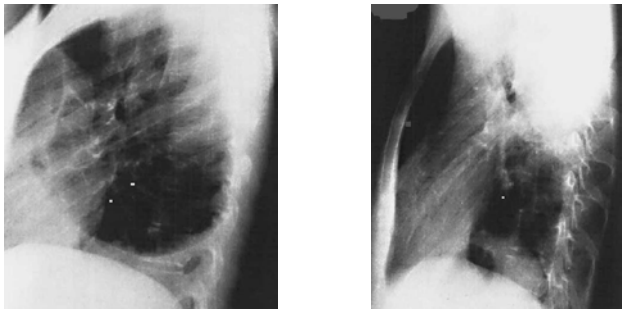

Figure 1: Lateral chest radiograph showing destructive lesion in the anterior cortex of the midsternum and multiple small pulmonary metastases before (A) and after three cycles of treatment (B).

Discussion

Malignant Phyllodes Tumors (MPT) and stromal sarcoma of the breast are rare tumors, accounting for less than 1% of all breast tumors [1]. It continues to present problems to both histopathologists and surgeons alike because of its atypical and unpredictable behavior. MPT are histopathologically distinguished from true sarcomas by the presence of epithelial elements within the cellular connective tissue stroma [2].

Metastases from cystosarcoma phyllodes are rare, and treatment generally is ineffective. The rarity of metastatic cystosarcoma phyllodes makes it difficult to do systematic trials [1-3].

The efficacy of systemic chemotherapy against metastatic MPT remains unknown. It is based on the principles of sarcoma rather than carcinoma treatment [4,5]. There are relatively few case reports of single

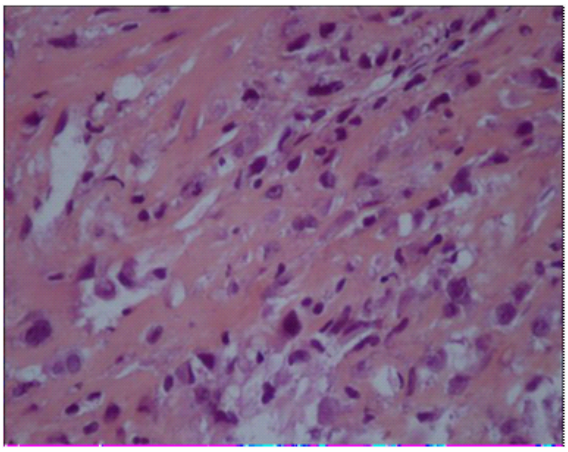

Figure 2: Malignant phyllodes tumors: histopathology.

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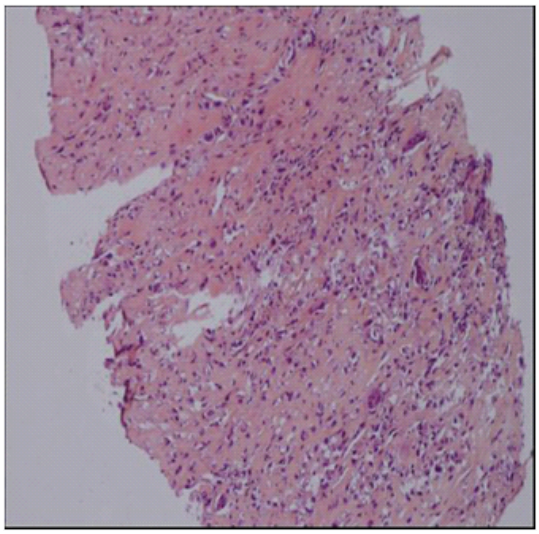

Figures 3: Malignant phyllodes tumors: histopathology.

agent chemotherapy. Doxorubicin and Dacarbazine [6] used as single agents have yielded no satisfactory response, but their administration in combination with cisplatin or ifosfamide has been reported to be effective [7].

Burton et al. [8] described chemotherapy with cisplatin and etoposide, and reported partial response in 2 of 3 patients.

MAID (Doxorubicine, Dacarbazine, Ifosfamide, Mesna) therapy yielded a favorable response, but it appears to be more toxic than single-agent or double-agent therapies with doxorubicin and ifosfamide [7]. Kan Yonemoria et al. [9] retrospectively analyzed 8 patients with metastatic malignant phyllodes tumors or stromal sarcoma, who were treated with MAID (Mesna, Doxorubicin, Ifosfamide, Dacarbazine) chemotherapy. The MAID therapy was administered intravenously every 4 weeks as follows: mesna 1,500 mg/m^2/day, days 1–4; doxorubicin 20 mg/m^2/day, days 1–3; dacarbazine 300 mg/m^2/day, days 1–3; ifosfamide 2,500 mg/m^2/day, days 1–3. Complete response was not achieved in any of the patients, 4 of the 8 patients showed partial response. The median time to disease progression was 74 days, and the overall median survival was 148 days. Grade 3 or more severe hematological toxicity was encountered in all patients.

The use of tamoxifen in MPT has not been fully investigated. However, oestrogen and progesterone receptors have been documented in these tumours and future studies with hormonal manipulation in MPT may be warranted [10-12]

Therefore, more systemic chemotherapy must be explored for patients with metastatic MPT, and the biology of the tumors needs to be clarified in further detail to develop strategies to improve the clinical benefits of treatment, including prolongation of survival in patients with metastatic MPT of the breast.

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