CASE REPORT PEER REVIEWED | OPEN ACCESS

Giant malignant melanoma of the anterior chest wall with widespread metastasis

Narjust Duma, Abdullah M. Khan, Basil Kasimis, Victor Chang

ABSTRACT

Introduction: Giant melanomas are defined as lesions greater than 10 cm; independent of their depth of invasion; these entities are rarely encountered in clinical practice and they represent a real treatment challenge as many patients are diagnosed with advanced disease. Herein, we document our experience with the first reported giant melanoma of the anterior chest wall and the 5th largest melanoma of any anatomic site. Case Report: A 63-year-old Caucasian male presented with an irregular, pigmented, non-healing ulcer, measuring 1.5x1.5 cm on his chest. He was referred for a skin biopsy but was lost to follow-up. He returned one year later complaining of fatigue, night sweats, and unintentional weight loss in addition to further growth of the skin lesion. His skin lesion was now a large, fungating mass, fixed to the chest wall and measuring 15x13x2.5 cm. There were multiple satellite lesions on the chest wall and palpable left axillary lymphadenopathy. Skin biopsy confirmed the diagnosis of malignant melanoma. Computed tomography scan demonstrated innumerable pulmonary nodules, retroperitoneal and peri-splenic lymphadenopathy with hepatic and bone metastasis. The patient's clinical course was later complicated by lower extremities arterial and venous thrombosis. Patient expired 15 months after the initial visit. Conclusion: Metastatic melanoma portends a long-term survival of less than 10%. Treatment depends on whether the disease is limited or disseminated; the latter is generally managed by systemic therapy or supportive care. Given the rarity of giant melanomas there is not a general consensus regarding the management of this subgroup of patients.

Keywords: Chest wall tumor, Giant melanoma, Metastatic melanoma, Skin cancer

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INTRODUCTION

The incidence of cutaneous melanoma is increasing faster than any other potentially preventable cancer in the United States [1]. In 2015, it is estimated that there will be 73,870 new cases of melanoma in the United States and 9,940 deaths from the disease [2]. Melanoma is the fifth most common cancer in men and seventh in women in the United States. Survival rates tend to decline as the

tumor depth of invasion increases. Patients with thin stage I lesions can expect prolonged disease-free survival and even cure, while those with thicker, later stage lesions (e.g. Breslow thickness >2.0 mm) are more likely to die from metastatic disease [3–4].

Giant melanomas are defined as lesions greater than 10 centimeters; independent of their depth of invasion [5]. These lesions are mostly seen in adults with an average age of 57 years (range: 29–88 years) [5]. The most common locations for giant melanomas are the scalp, upper extremities, abdomen and back [6–8]. Herein, we present the first reported giant melanoma of the anterior chest wall.

CASE REPORT

A 63-year-old Caucasian male with past medical history of hypertension, diabetes mellitus type 2, chronic obstructive pulmonary disease (COPD) and post-traumatic stress disorder, presented to our internal medicine clinic complaining of a left sided anterior chest wall wound "that would not heal". On examination, he had an irregular, pigmented and non-healing ulcer, measuring 1.5x1.5 cm. He was referred to the dermatology clinic but was lost to follow-up despite multiple attempts to contact him. He returned to the hospital one year later complaining of fatigue, night sweats, lower extremities pain and an unintentional 25 pound weight loss. His skin lesion was now a large, fungating mass, fixed to the left anterior chest wall and measuring 15x13x2.5 cm (Figure 1). The mass was malodorous, necrotic and with evidence of recent bleeding. The surrounding skin was erythematous with multiple satellite lesions on the chest wall and palpable left axillary lymphadenopathy (Figure 2). A punch biopsy from the lesion revealed a metastatic malignant melanoma, with perineural and lymphovascular invasion, a mitotic index of 10/mm^2, and negative staining for BRAF v600e mutation. Histological sections showed large polygonal cells with pleomorphic nuclei that contained prominent nucleoli and deposits of brown melanin pigment (Figure 3).

Computed tomography (CT) revealed disseminated disease, with brain metastasis, multiple metastatic foci throughout the subcutaneous tissue, innumerable pulmonary nodules (Figure 4), retroperitoneal and perisplenic lymphadenopathy, hepatic metastases, and a solitary lytic lesion at the L4 vertebral body (Figure 5). The patient was informed of the poor prognosis of the disease and several treatment options were discussed, including: cytotoxic therapy with cisplatin or inclusion to clinical trials. The patient's clinical course was complicated by arterial and venous thrombosis in the lower extremities leading to severe ischemic pain. After careful consideration the patient and family decided for a more conservative management and he was referred to hospice care. He expired 15 months after the initial visit to the internal medicine clinic.

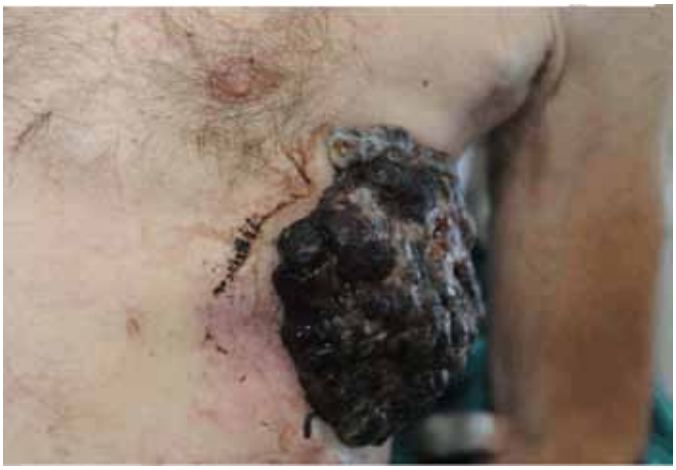

Figure 1: Physical examination revealed a giant, fungating mass on the anterior chest wall.

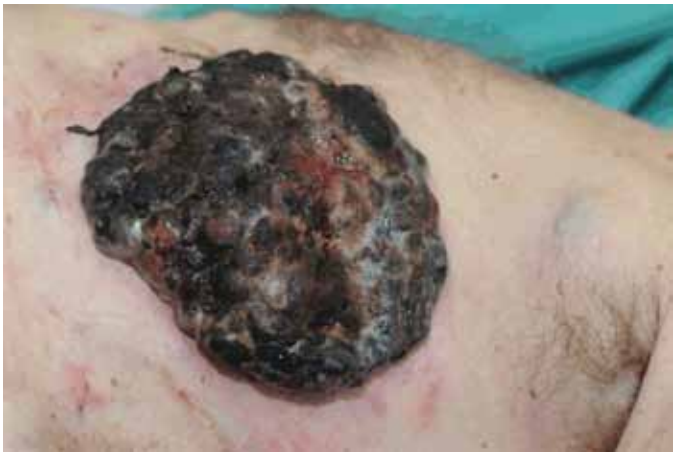

Figure 2: Multiple satellite lesions and axillary lymphadenopathy.

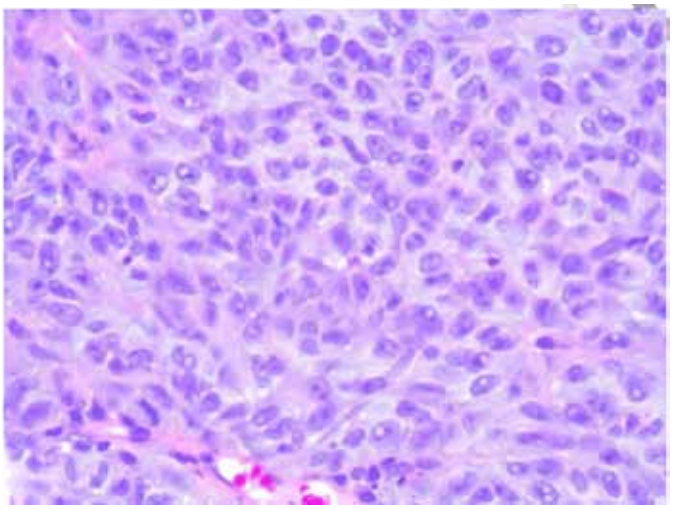

Figure 3: Hematoxylin and Eosin staining (x400) demonstrated sheets of cohesive epithelioid malignant cells with abundant cytoplasm and prominent nuclei at a mitotic index of 10/MM^2.

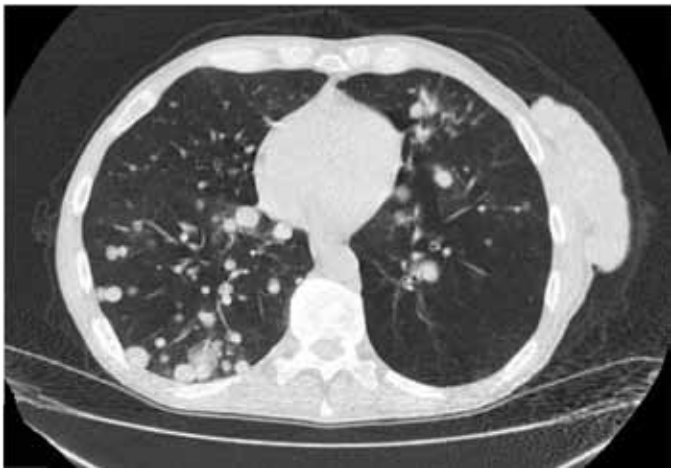

Figure 4: Computed tomography scan of the chest demonstrated multiple pulmonary nodules up to 2.5 cm in size.

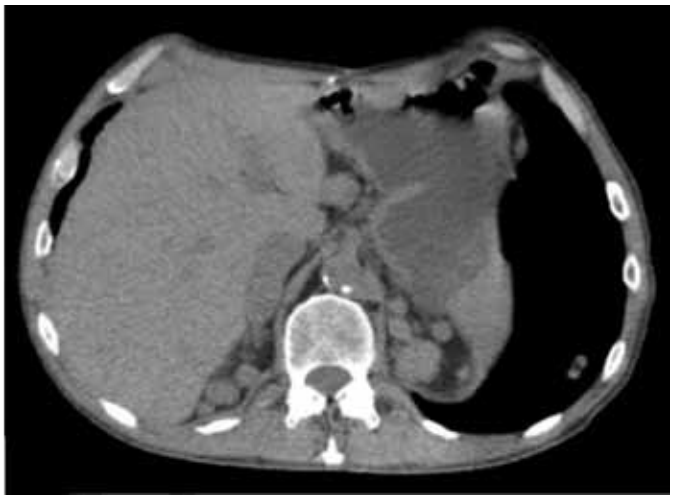

Figure 5: Abdominal and pelvic computed tomography scan revealed diffuse lymphadenopathy in addition to hepatic and vertebral metastases.

DISCUSSION

The term "giant melanoma" is used to describe cases of melanomas with a very large diameter independent of their depth [6–9]. While no diameter is specified, 10 cm is the usual cutoff. This is in contrast to thick melanomas, which have a Breslow's depth greater than 4 mm. A total of 16 cases of giant melanomas have been reported in English literature in the last 30 years, most of them located on the lower back and scalp [6, 9]. To our knowledge, our case is the first reported giant melanoma of the anterior chest wall and the fifth largest melanoma reported of any anatomic site.

Giant cutaneous melanomas tend to be large fungating lesions, with areas of necrosis and history of bleeding. Satellite lesions around the tumors are frequently seen with great percentage of patients having palpable regional lymphadenopathy at the time of diagnosis. The time of growth of the lesions prior to diagnosis can range from 6 months to 15 years [9]. The average age at the time of diagnosis is 57 years (range: 29–88 years). Having an equal distribution between genders, these tumors are more frequently seen in the scalp, upper extremities, back and abdomen. Their diameter can range from 4 to 25 cm with most cases having extensive lymphadenopathy at the time of diagnosis [7].

As part of the initial evaluation most patients undergo a non-invasive staging process, including full body computed tomography scan, positron emission tomography (PET) scans and brain magnetic resonance imaging (MRI) scan. In our patient, the staging process revealed stage IV disease with extensive pulmonary, liver and brain metastasis. In cases where local lymphadenopathy is the only finding of systemic involvement, fine needle aspiration is recommended to confirm the presence of melanocytic cells in the lymph nodes.

Metastatic melanoma portends a long-term survival of less than 10% [4]. Treatment depends on whether the disease is limited or disseminated; the latter is generally managed by systemic therapy and supportive care. Novel systemic therapies include drugs that inhibit CTLA4-mediated signaling (ipilimumab), BRAF mutants (vemurafenib, dabrafenib), and MEK1/MEK 2 inhibitors (trametinib). Promising results have also been demonstrated with the immune-checkpoint inhibitors targeting PD-1 receptors (nivolumab, MK-2475) and cytotoxic therapy with dacarbazine or carboplatin based regimens [10]. In our patient, due to his extensive disease and comorbidities, treatment options were limited.

Malignant melanoma has a good prognosis when diagnosed at an early stage. Most patients presenting with giant melanomas encountered a delay in diagnosis. Factors leading to delayed diagnosis in these patients are not clear but could include: pursuit of alternative medicine, socioeconomic factors or other underlying diseases, including psychiatric conditions [8].

CONCLUSION

Giant malignant melanomas are very rare tumors, usually described as large fungating, vegetative masses with areas of necrosis and bleeding. Their most common anatomic locations include: scalp, upper extremities and abdomen. Given the rarity of giant melanomas, it is difficult to draw any conclusion regarding staging and management strategies. Therefore, we do not have a validated therapeutic approach. As most patients present with disseminated disease, systemic therapy is the cornerstone in the treatment of these patients. Given the rapid development of novel, highly-efficacious therapeutic agents, participation in clinical trials should be encouraged as these new therapies could improve survival in patients with giant melanomas.

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Author Contributions
Narjust Duma – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Abdullah M. Khan – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Basil Kasimis – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Victor Chang – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor
The corresponding author is the guarantor of submission.

Conflict of Interest
Authors declare no conflict of interest.

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