DOI: https://doi.org/10.4038/sljd.v24i1.50

Case report

# Skin as a window to systemic metastases: a rare case of breast angiosarcoma

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*Sri Lanka Journal of Dermatology,* 2024-2025, **24**: 42-44


## Abstract

Angiosarcoma of the breast is a rare and aggressive vascular malignancy with a high metastatic potential. Cutaneous involvement may serve as an early indicator of systemic dissemination. We report a case of a 62-year-old female with primary breast angiosarcoma who presented with multiple erythematous papules on the scalp, face, and chest, including over the mastectomy scar. Biopsy confirmed cutaneous metastases of angiosarcoma. Further investigations revealed widespread metastases to the lungs, gastrointestinal tract, liver, and bones. Given its rarity, breast angiosarcoma poses significant diagnostic and therapeutic challenges. Despite surgical intervention, the prognosis remains poor due to early and extensive haematogenous spread. This case highlights the importance of recognising cutaneous metastases as an early manifestation of systemic disease and underscores the role of dermatologists in the early diagnosis and multidisciplinary management of angiosarcoma. Prompt histopathological confirmation is crucial for guiding treatment decisions and improving patient outcomes.


## Introduction

Breast angiosarcoma is a rare and aggressive vascular malignancy with a high metastatic potential. It may arise de novo (primary angiosarcoma) or secondary to radiation therapy, chronic lymphoedema, or trauma[1]. The prognosis is poor, with frequent metastases to the lungs, bones, liver, and contralateral breast.

Cutaneous metastases, though uncommon, can serve as an early indicator of systemic spread. Recognising these dermatologic manifestations is crucial for timely diagnosis and management. Here, we report a case of metastatic breast angiosarcoma presenting with disseminated skin lesions, bowel involvement, and pulmonary metastases.

## Case presentation

A 62-year-old female, previously diagnosed with primary angiosarcoma of the breast, underwent left-sided mastectomy three months prior. She was referred for dermatological evaluation due to progressively increasing asymptomatic erythematous papules on the face, scalp, and chest over the past six weeks. She had also suffered episodes of melaena and fresh per rectal bleeding over the past few days which had prompted the hospital admission.

Her medical history included a road traffic accident a year earlier, resulting in chest trauma and a persistent left breast haematoma. A core biopsy later confirmed angiosarcoma of the left breast.

Examination revealed numerous discrete, erythematous to violaceous 1-2 mm papules on the scalp, face, and chest, including over the mastectomy scar (Figures 1 & 2). A 5 mm punch biopsy from a chest lesion showed an intraepidermal vascular tumour with irregular vascular channels lined by multilayered endothelial cells exhibiting pleomorphic hyperchromatic nuclei, confirming cutaneous metastatic angiosarcoma (Figure 3).

Further investigations revealed widespread metastases; The upper gastrointestinal endoscopy performed revealed extensive metastases from the oesophagus down to the duodenum with active bleeding (Figure 4); duodenal biopsy confirmed angiosarcoma (Figure 5). Contrast enhanced CT scan of the chest showed numerous bilateral pulmonary nodules, enlarged lymph nodes (paratracheal, paraaortic, intermammary, and axillary), lytic bone lesions (sternum, ribs and spine), with abdominal findings of hepatomegaly, and multiple hepatic metastases.

Given the extensive disease burden, the patient was referred to the National Cancer Institute for palliative chemotherapy.

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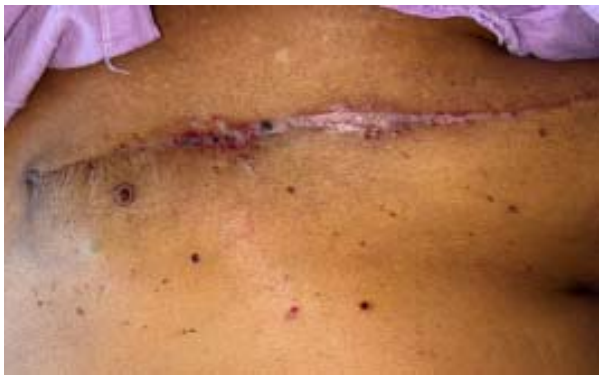

**Figure 1.** *Numerous discrete, erythematous to violaceous 1-2 mm papules overlying the mastectomy scar of the left chest.*

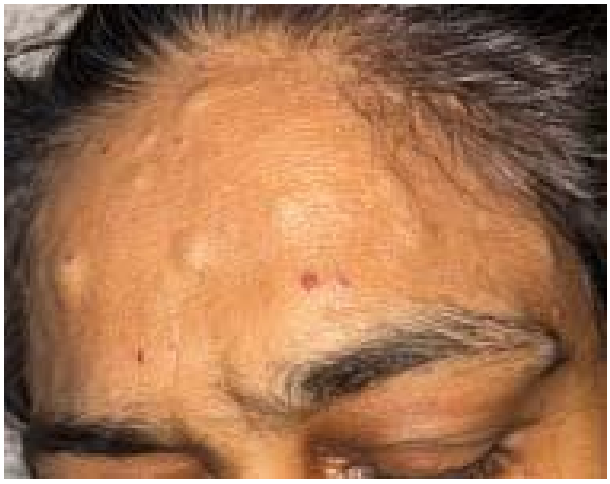

**Figure 2.** *Erythematous papules and multiple subcutaneous nodules over the forehead.*

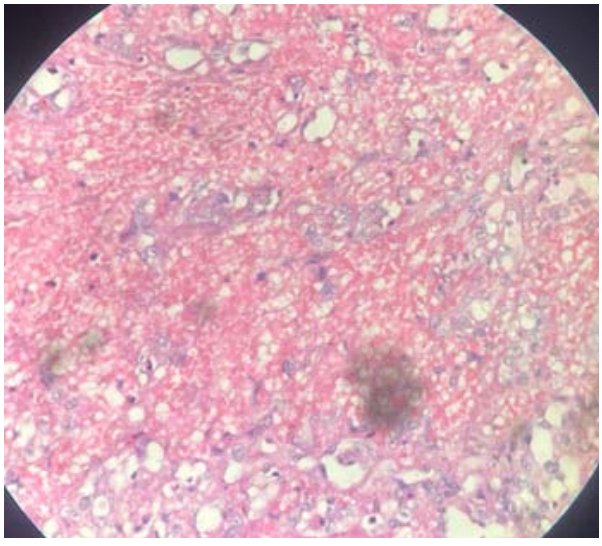

**Figure 3.** *Intraepidermal vascular lesion composed of varying sized vascular channels lined by multilayered endothelial cells with pleomorphic hyperchromatic nuclei (H and E stain, 400×).*

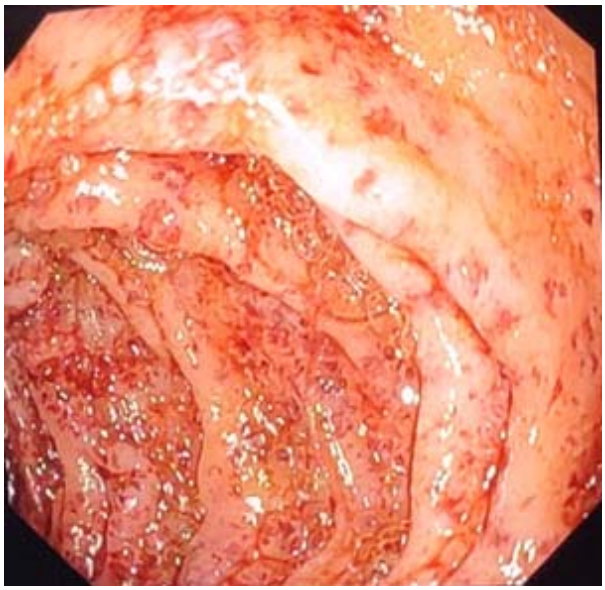

**Figure 4.** *Duodenum with multiple erythematous nodules and bleeding on upper gastrointestinal endoscopy.*

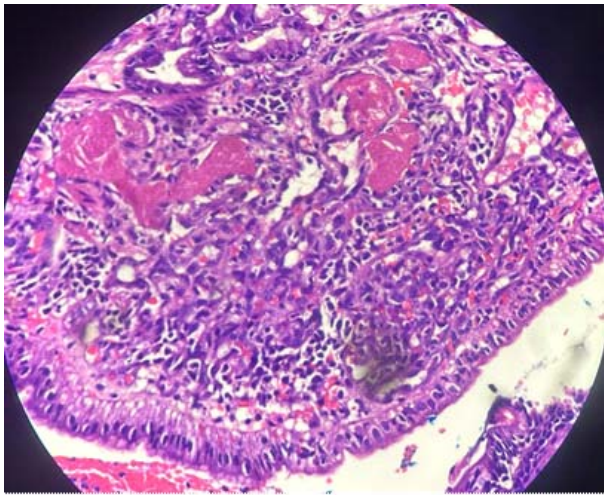

**Figure 5.** *Duodenal tissue with a vascular lesion in the lamina propria, composed of irregular anastomosing vascular channels lined by endothelial cells showing mild to moderate nuclear pleomorphism (haematoxylin and eosin stain, ×400).*

## Discussion

Cutaneous metastases in angiosarcoma, though rare, are clinically significant and may mimic haemangiomas, Kaposi sarcoma, or cutaneous lymphoma[2]. Dermatologists play a crucial role in recognising such lesions, as early skin involvement may be the first sign of systemic disease.

Breast angiosarcoma (BA) accounts for only 0.04-0.1% of all breast malignancies and is classified into[3]:

- **Primary BA,** sporadic and seen in young women (third-fourth decades), presenting as rapidly enlarging painless masses with purplish-blue skin discolouration.
- **Secondary BA,** occurring in older women due to radiation, lymphoedema, or trauma. These lesions often appear as ecchymoses or skin thickening near prior surgical sites[3].

Although trauma is a suggested risk factor, its role in BA development remains inconclusive[2]. In this patient, the longstanding post-traumatic haematoma may have contributed to tumour progression, though definitive causation cannot be established.

Histologically, the appearance of angiosarcoma varies widely and ranges from well-differentiated variants to poorly differentiated variants. In well-differentiated angiosarcoma, numerous irregular vascular channels lined by endothelial cells are demonstrated. Additionally, spindle-shaped, polygonal, epithelioid and primitive round cells, with increased mitotic activity and poorly formed vascular spaces, can be found in tissues of poorly differentiated angiosarcoma[1].

BA carries a poor prognosis, with 5-year survival rates ranging from 28-54%[4]. The median disease-free survival is 2.26 years, and overall survival is 2.96 years[3]. Poor prognostic factors include advanced age, large tumour size, and high histological grade[2]. Local recurrences are common, and haematogenous spread frequently leads to metastases in the contralateral breast, lungs, pleura, bones, liver, and distant skin sites.

Surgical excision remains the primary treatment[2]. Due to the diffuse nature of BA, mastectomy is preferred over breast-conserving surgery to reduce local recurrence[3]. Lymph node dissection is generally unnecessary, as BA primarily spreads via the haematogenous route[3].

## Conclusion

This case highlights the aggressive nature of breast angiosarcoma and its potential for widespread metastasis. The presence of cutaneous lesions in a patient with prior BA should raise suspicion for systemic involvement. Dermatologists play a key role in recognising metastatic angiosarcoma, facilitating early diagnosis and multidisciplinary management. Given the poor prognosis, prompt intervention is essential to optimise patient outcomes.

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