## Acral Metastasis: An Uncommon Site of Cancer Spread

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### Learning Objectives
- Recognize that metastases to the distal phalanges are rare.
- Recognize that new hand and foot lesions may represent acral metastases in patients with a history of malignancy.
- Recognize the poor prognosis of acral metastases and understand the role of palliative treatments to reduce symptoms.

### Introduction and Background
- Bone metastases are common, but metastases to the hands and feet (acrometastases) are rare, comprising 0.1% of all cases (1).
- The scarcity of distal metastasis is likely due to undesirable microenvironmental factors in the acral skeleton including brisk venous blood flow and paucity of red marrow (1, 4).
- In a new soft tissue lesion of the hand or foot, acrometastases should be considered in the differential diagnosis in addition to:
  - osteomyelitis
  - gout / pseudogout
  - tuberculous dactylitis
  - pyogenic granuloma
  - primary skin or bone tumor
- Prognosis is grim, with median survival of 6-8 months from the time of diagnosis (2).
- We present a case of a 70-year-old female with a history of metastatic breast carcinoma (Figure 1), an aggressive and rare subtype of breast cancer defined by presence of both carcinomatous and sarcomatous elements, who presented with a left thumb mass (5, 6).

### Case Presentation

A 70-year-old female presented with pain and swelling of the left distal thumb (Figure 2). She had a history of metaplastic breast carcinoma (MBC) with neuroendocrine features and chondroid differentiation, managed with mastectomy 5 years prior with follow-up complicated by non-adherence to adjuvant chemotherapy. She was then found to have lung metastases but declined therapy. Five months later she presented with the aforementioned thumb symptoms. Plain hand radiographs showed a lytic lesion of the first distal phalanx with cortical erosion and associated soft tissue mass (Figure 3). Her condition did not improve with Clindamycin and NSAIDS, and the lesion was deemed likely to represent a metastasis. She received 3000 cGy palliative radiation to the thumb and started systemic chemotherapy with liposomal doxorubicin. Six weeks later she reported significant improvement in pain and swelling of the distal thumb.

### Discussion

- Bone metastases are present in 70 percent of metastatic breast cancer cases, but an overwhelming small minority involve the hand, resulting in frequent initial misdiagnosis of these lesions. This nebulous presentation is well represented here, with the initial assumption being of an infectious etiology rather than metastasis.
- Bone metastases have a propensity for the dominant hand, theorized to be due to increased blood flow and higher incidence of microtrauma in the dominant hand; in addition, males are disproportionately affected (2).
- Almost 50 percent of described acrometastasis involve lung cancer, with breast cancer accounting for nearly 20 percent of cases (3, 4). There are few, if any, studies that report the breast cancer subtype responsible for hand metastases. We could not find any reports of MBC (a rare breast cancer subtype) acrometastasis in the literature.
- Once identified, treatment is variable and depends on primary cancer type, symptomatology, and patient preference. Options include radiation, curettage, amputation, percutaneous ablation, and observation with chemotherapy.
- Our patient was treated with palliative radiation, as she had additional metastatic disease in the lungs and brain. She experienced a significant reduction in pain and improvement in functionality.

### Conclusion

This case highlights the scarcity of distal metastases as presenting signs of primary tumors and provides an impetus to clinicians to consider malignancy in patients with any such acral lesions, particularly if the patient has a history of cancer. Increasing awareness of such unique presentations may limit delays in diagnosis and facilitate prompt treatment.

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### References