

# Metastatic Skin Cancer

Cutaneous metastasis occurs when malignant cells from primary cancers spread to the skin, either via the bloodstream or lymphatic system. Although cutaneous metastases are uncommon, they are a critical clinical concern because they often indicate advanced systemic disease. The skin is the most common site for metastatic spread of melanoma, breast, lung, colon, and other malignancies. In some cases, skin metastases may even be the first sign of an undiagnosed primary cancer.

## Mechanisms of Cutaneous Metastasis

Metastatic skin lesions occur when cancer cells disseminate from the primary tumor through either hematogenous (bloodstream) or lymphatic routes. Alternatively, cancers may invade the skin directly, particularly when they spread from sites such as a surgical wound or biopsy site. The skin, being the body's largest organ, is capable of harboring metastatic disease from nearly any malignancy. However, certain cancers, including melanoma, breast cancer, lung cancer, and colorectal carcinoma, are more prone to metastatic spread to the skin.

## Clinical Presentation

Cutaneous metastases can present in various forms depending on the primary cancer type, but they typically appear as rapidly growing, firm, mobile, and painless lesions that may ulcerate. These lesions often lack specific clinical features and may be misdiagnosed as benign dermatological conditions such as infections or inflammatory processes.

The following types of metastatic skin lesions are commonly associated with specific cancers:

### ➤ **Breast Cancer**

Metastatic breast cancer is the most frequent cause of cutaneous metastasis in women. The skin lesions typically develop on the chest, particularly over the breast or axillary region.

Characteristic presentations include:

- ***Carcinoma erysipeloides***: Raised, erythematous areas resembling erysipelas (a bacterial infection of the skin).
- ***Carcinoma telangiectoides***: Red-violet skin growths.
- ***Carcinoma en cuirasse***: Hard, indurated areas resembling orange peel skin on the chest.
- ***Paget's disease of the breast***: Eczematous dermatitis-like changes around the nipple and areola.
- ***Alopecia neoplastica***: Scarring alopecia on the scalp.

➤ **Lung Cancer**

Lung cancer is the most common cause of cutaneous metastasis in men. These lesions often appear as firm, red nodules on the chest, abdomen, or back. When the lesions appear on the chest, they may arise directly from a lung biopsy site.

➤ **Colorectal Carcinoma**

Colorectal cancer is the second most common cancer to cause skin metastases. These lesions are most frequently located on the abdomen and pelvis. A characteristic feature is the Sister Mary Joseph nodule, a palpable mass at the umbilicus, which often signifies underlying gastrointestinal malignancy.

➤ **Melanoma**

Melanoma, particularly cutaneous melanoma, can metastasize to the skin and may appear as black or blue nodules that resemble blue nevi. The amelanotic form can present as skin-colored, pink, or red lesions. These metastases are most commonly found on the chest, back, and extremities.

➤ **Other Cancers**

Other malignancies that may cause cutaneous metastasis include kidney, oral cavity, cervical, ovarian, and pancreatic cancers. Metastases from kidney and oral cancers are more common in men and typically affect the head and neck regions.

## Diagnosis

Due to their nonspecific appearance, cutaneous metastases can often be mistaken for other dermatologic conditions, such as fungal or bacterial infections or inflammatory disorders, which require different treatment approaches. Therefore, a high degree of suspicion is needed for timely diagnosis. Thorough history, including pertinent cancer history and age-appropriate screening evaluations, is vital if there is a suspicion of metastatic disease.

A skin biopsy, either punch or excisional, is the gold standard for diagnosing cutaneous metastasis. Histopathologic examination typically reveals small, round cells with features suggestive of the primary cancer's tissue type. To further differentiate the metastatic lesion, immunohistochemical (IHC) staining is often performed to detect markers specific to the primary cancer, such as cytokeratin 7 for breast cancer or S100 and HMB-45 for melanoma.

In cases where the primary tumor is unknown, a thorough diagnostic workup, including imaging studies (e.g., CT scans, PET scans) and additional serologic tests, is essential to identify the primary cancer source.

## Treatment

The treatment of cutaneous metastases is primarily focused on managing the underlying malignancy, as these lesions often represent advanced disease. However, when these skin lesions

cause significant discomfort, ulceration, or disfigurement, local treatments may be used to alleviate symptoms and improve quality of life. Therapeutic options include:

- **Systemic Therapy:** The mainstay of treatment for metastatic cancers is chemotherapy, targeted therapy, and immunotherapy, which aim to treat the primary cancer and prevent further metastasis. For example, immune checkpoint inhibitors (e.g., pembrolizumab for melanoma) have shown efficacy in treating metastatic lesions.
- **Localized Therapies:** Depending on the location and number of metastases, local treatments may include:
  - **Cryotherapy:** Used for small lesions to freeze and destroy abnormal tissue.
  - **Photodynamic therapy:** Utilizes light-sensitive drugs activated by light to destroy cancer cells.
  - **Excision or laser therapy:** Surgical removal or laser ablation to treat single or small lesions.
  - **Intralesional chemotherapy:** Direct injection of chemotherapeutic agents into the skin lesions.
  - **Electrochemotherapy:** Combines chemotherapy with electrical pulses to enhance drug uptake by cancer cells.
  - **Topical treatments:** In some cases, imiquimod cream may be used to stimulate the immune response and treat superficial metastases.

In cases where the cancer is widespread, supportive care focusing on symptom management and wound care is important. Maintaining good hygiene and preventing secondary infections in metastatic lesions is critical, particularly in patients with immunosuppression.

## Prognosis

The prognosis for patients with cutaneous metastases is generally poor, as it typically indicates widespread metastatic disease. The overall survival rate is largely dictated by the type of primary cancer, its stage, and the extent of metastasis. Prognosis tends to be worse when the skin lesions are associated with visceral metastasis, such as metastasis to the liver, lungs, or brain.

## Conclusion

Cutaneous metastases are a significant indicator of advanced malignancy and can be challenging to diagnose due to their nonspecific clinical presentation. Early recognition and biopsy are crucial for identifying the underlying cancer and determining the appropriate treatment. While treatment of cutaneous metastases focuses on managing the primary cancer, local therapies can provide symptomatic relief and improve patient quality of life. Given the poor prognosis associated with widespread metastasis, ongoing monitoring and comprehensive care are essential for improving outcomes.

## References

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