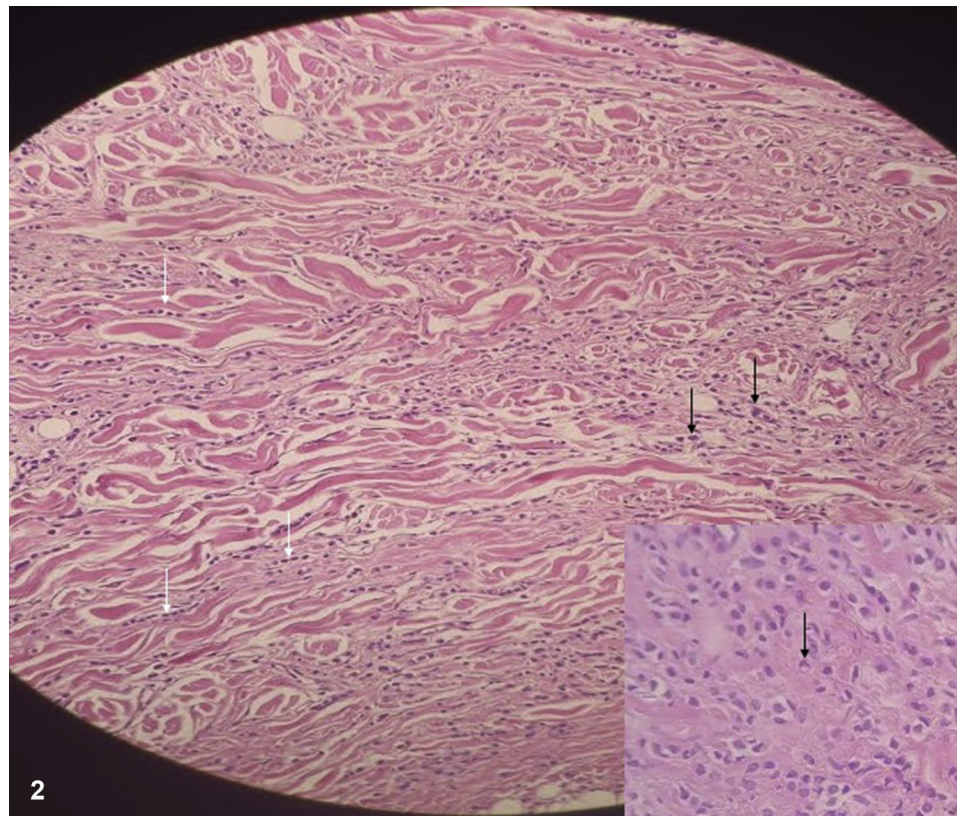


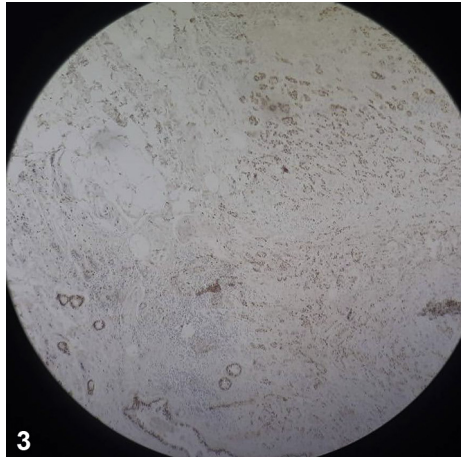
Hyperpigmented shiny sclerotic plaque over the chest of adult women



Meshal M. Alhameedy, MD, and Sarah K. Alkhezzi, MBBS
Buraydah, Saudi Arabia

Key words: breast cancer; cutaneous metastasis; carcinoma en cuirasse.





A 50-year-old woman presented with a progressive, hyperpigmented plaque over the chest and upper portion of the abdomen developing over the past 6 months. She also complained of weight loss, anorexia, restricted movement of the chest, and dysphagia. Physical examination showed a hyperpigmented shiny sclerotic plaque involving the chest, extending to the bilateral axillary vault and upper abdomen and forming a circumferential sclerotic band (Fig 1). Laboratory test results were normal, including those pertaining to complete blood count and antinuclear, anti-centromere, anti-topoisomerase-1, and anti-RNA polymerase III antibodies. Histologically, an atypical hyperchromic pleomorphic cellular infiltrate was observed, dissecting between collagen bundles (Fig 2, black arrow). Immunohistochemically, staining of the cellular infiltrate was highlighted using CK7 and ER stain (Fig 3).

Question 1: Which of the following is the most likely diagnosis?

- A. Morphea.
- B. Scleromyxedema.
- C. Lipodermatosclerosis.
- D. *Carcinoma en cuirasse*.
- E. Systemic sclerosis.

Answers:

A. Morphea – Incorrect. Clinically, morphea presents with a similar sclerotic hyperpigmented plaque, as seen in our patient. However, pathologically, it will show homogenous collagen bundles with reduced spaces between them, involving most of the dermis with entrapped and atrophic adnexal structures (eg, eccrine glands).¹

B. Scleromyxedema – Incorrect. Scleromyxedema usually presents with 2-3-mm firm, waxy,

closely aligned papules in a widespread symmetrical pattern, mainly on the head, neck, forearms, hands, and thighs. Moreover, it exhibits the histopathological triad of diffuse deposition of mucin, an increase in collagen deposition, and proliferation of fibroblasts.¹

C. Lipodermatosclerosis – Incorrect. In the acute phase, lipodermatosclerosis presents with a pseudo-cellulitis appearance.; in the chronic phase, it presents with sclerosis, induration, and hyperpigmentation, which is sharply demarcated from the adjacent normal skin, giving the appearance of an “inverted wine bottle,” especially over the medial lower portion of the leg.¹

D. *Carcinoma en cuirasse* – Correct. *Carcinoma en cuirasse* is a clinical presentation of skin metastasis in the chest, named for its clinical resemblance to the leather armor of a soldier (cuirassier); it is most likely seen due to breast cancer metastasis to the skin, which presents as woody indurated plaques with peau d’orange appearance over the chest.¹⁻³

From the Department of Dermatology, King Fahad Specialist Hospital in Buraydah - Ministry of Health.

Funding sources: None.

Correspondence to: Dr. Meshal M. Albameedy, Ar Rawdah Dist, King Abdulaziz Road, Buraydah 52377, Qassim, Saudi Arabia.
E-mail: Meshal.albameedy@gmail.com.

JAAD Case Reports 2021;10:53-6.

2352-5126

© 2021 by the American Academy of Dermatology, Inc. Published by Elsevier, Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<https://doi.org/10.1016/j.jidcr.2021.02.007>

E. Systemic sclerosis – Incorrect. Systemic sclerosis usually presents with an early edematous phase followed by an indurated phase, which eventually becomes atrophic with a predilection for the extremities. Moreover, besides cutaneous involvement, systemic manifestations are also usually seen, such as Raynaud’s phenomenon, arthralgia, esophageal dysmotility, interstitial lung disease, or pulmonary hypertension.¹

Question 2: What are the characteristic histopathologic findings in this condition?

A. Lipocyte necrosis, septal sclerosis, and membranocystic change with overlying stasis changes in the dermis.

B. Large collagen bundles separated from one another by clear spaces filled with mucin without an increase in fibroblasts, resulting in dermal thickening.

C. Atypical cells dissecting between collagen bundles arranged in lines within the dermis with or without signet ring cells.

D. Cords, alveoli, and tubular structures consisting of uniform clear cells containing both lipid and glycogen with delicate and highly vascular stroma, resulting in conspicuous areas of hemorrhage.

E. Columnar cells with basally oriented nuclei and intracytoplasmic mucin deposition, gland formation, and dirty necrosis.

Answers:

A. Lipocyte necrosis, septal sclerosis, and membranocystic change with overlying stasis changes in the dermis – Incorrect. These are the characteristic histopathological features of lipodermatosclerosis.¹

B. Large collagen bundles separated from one another by clear spaces filled with mucin without an increase in fibroblasts, resulting in dermal thickening – Incorrect. These are the characteristic histopathological features of scleredema.^{1,3}

C. Atypical cells dissecting between collagen bundles arranged in lines within the dermis with or without signet ring cells – Correct. Atypical cells dissecting between collagen bundles arranged in lines within the dermis, “Indian files” (Fig 2, white arrow), signet ring cells (Fig 2, insert black arrow), and tumor cells trying to form glandular structures are the characteristic histopathological features usually seen in metastatic breast cancer.^{1,3,4} Our patient was found to have lobular breast cancer

with distant metastasis to the stomach, colon, and skin, which was one of the presenting manifestations leading to the detection of occult invasive breast cancer.

D. Cords, alveoli, and tubular structures consisting of uniform clear cells containing both lipid and glycogen with delicate and highly vascular stroma, resulting in conspicuous areas of hemorrhage – Incorrect. These are the characteristic histopathological features of metastatic clear cell carcinoma of the kidney.^{1,3}

E. Columnar cells with basally oriented nuclei and intracytoplasmic mucin deposition, gland formation, and dirty necrosis – Incorrect. These are the characteristic histopathological features of metastatic colon cancer.^{1,3,4}

Question 3: Which of the following is the least likely cutaneous presentation of metastatic breast cancer?

A. Pruritic patches extending from the nipple and areola that resemble dermatitis.

B. Nodules or plaques on the scalp in association with alopecia.

C. Rapidly growing nodule resembling pyogenic granuloma.

D. Morpheaform or sclerodermoid indurated plaque with *peau d’orange* appearance.

E. Erythematous patch with spreading well-defined borders.

Answers:

A. Pruritic patches extending from the nipple and areola that resemble dermatitis – Incorrect. Pruritic patches extending from the nipple and areola that resemble dermatitis describe the classic presentation of Paget disease of the breast.^{1,5}

B. Nodules or plaques on the scalp in association with alopecia – Incorrect. Nodules or plaques on the scalp in association with alopecia describe the clinical presentation of alopecia neoplastica, which is most commonly due to breast or lung cancer.^{1,3,5}

C. Rapidly growing nodule resembling pyogenic granuloma – Correct. Rapidly growing nodules resembling a vascular tumor (particularly a pyogenic granuloma) are usually due to metastatic renal clear cell carcinoma or metastatic hepatocellular carcinoma rather than other causes, including breast cancer.^{1,3}

D. Morpheaform or sclerodermoid indurated plaque with *peau d'orange* appearance — Incorrect. Morpheaform or sclerodermoid indurated plaques with *peau d'orange* appearance describe the clinical presentation of *carcinoma en cuirasse*, which is most commonly due to metastatic breast cancer as seen in our patient with metastatic lobular breast cancer to the skin.^{1,3,5}

E. Erythematous patch with spreading well-defined borders — Incorrect. Erythematous patches with spreading well-defined borders describe the clinical presentation of carcinoma erysipeloides, which is most commonly due to metastatic breast cancer.^{1,3,5}

Conflicts of interest

None declared.

REFERENCES

1. Bologna J, Schaffer J, Cerroni L. *Dermatology*. 4th ed. Elsevier; 2017:2160-2167.
2. Lookingbill DP, Spangler N, Helm KF. Cutaneous metastases in patients with metastatic carcinoma: a retrospective study of 4020 patients. *J Am Acad Dermatol*. 1993;29(2 Pt 1):228-236.
3. Calonje E, Brenn T, Lazer A, Billings S. *McKee's Pathology of the Skin*. 5th ed. Elsevier; 2020:1520-1544.
4. Saeed S, Keehn CA, Morgan MB. Cutaneous metastasis: a clinical, pathological, and immunohistochemical appraisal. *J Cutan Pathol*. 2004;31(6):419-430.
5. De Giorgi V, Grazzini M, Alfaioli B, et al. Cutaneous manifestations of breast carcinoma. *Dermatol Ther*. 2010;23(6):581-589.