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CASE REPORT

An Unusual Case of Metastatic Lobular Breast Carcinoma to the Uterine Cervix

Juhi Deshpande

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ABSTRACT

Introduction: Metastatic breast cancer to the uterine cervix is a rare and unusual occurrence. Here, we present a case of metastatic lobular breast carcinoma to the uterine cervix in a 51-year-old postmenopausal woman.

Objectives: The objectives of this case report are to highlight the importance of comprehensive diagnostic workup in identifying rare and atypical metastatic patterns and to emphasize the need for clinicians to consider uncommon sources of metastasis in the evaluation of postmenopausal women.

Materials & Methods: A 51-year-old postmenopausal woman presented with postmenopausal white discharge per vaginum. A cervical biopsy was performed, and histopathological examination was conducted. Immunohistochemical analysis was subsequently performed to confirm the diagnosis.

Results: Histopathological examination of the cervical biopsy revealed a discordant morphology. Immunohistochemical analysis confirmed the presence of metastatic lobular breast carcinoma cells in the uterine cervix.

Conclusion: This case highlights the importance of comprehensive diagnostic workup, including histopathological and immunohistochemical evaluation, in identifying rare and atypical metastatic patterns. Accurate diagnosis is crucial, as primary genital tract carcinoma and metastatic lobular carcinoma require distinct management strategies. Clinicians should consider uncommon sources of metastasis in the evaluation of postmenopausal women presenting with unusual symptoms.

KEYWORDS

• Cervical cancer • Lobular breast cancer • Postmenopausal discharge

AUTHOR'S AFFILIATION

Associate Professor, Department of Obstetrics and Gynecology, Baba Kinaram Autonomous State Medical College, Chandauli, Uttar Pradesh 232110, India.

CORRESPONDING AUTHOR

Juhi Deshpande, Associate Professor, Department of Obstetrics and Gynecology, Baba Kinaram Autonomous State Medical College, Chandauli, Uttar Pradesh 232110, India.
E-mail: juhidesh@yahoo.com

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Capsule: Rare case of metastatic lobular breast carcinoma to uterine cervix in 51-year-old postmenopausal woman highlights importance of comprehensive diagnostic workup for accurate diagnosis.

INTRODUCTION

Metastasis to the uterine cervix from a distant primary tumor is a rare occurrence, and even more so when the primary tumor is breast carcinoma in a patient undergoing treatment.[1] We report a unique case of a 51-year-old woman on tamoxifen treatment for breast carcinoma, presenting with postmenopausal discharge, initially suspected to be cervical carcinoma. Accurate diagnosis is crucial, as the treatment approaches for primary genital tract carcinoma and metastatic breast carcinoma differ significantly.[2]

CASE REPORT

A 51-year-old woman presented to our hospital with a triad of symptoms, including lower limb edema, low back pain, and postmenopausal white discharge per vaginum. Her medical history was significant for a left breast lump excision six years prior, which was diagnosed as invasive lobular carcinoma of the breast. The tumor was hormone receptor-positive, expressing estrogen receptor (ER) and progesterone receptor (PR), and human epidermal growth factor receptor 2 (Her2)-negative.[3]

Following the initial diagnosis, the patient underwent a modified radical mastectomy with axillary lymph node dissection. Histopathological examination of the surgical specimen revealed no evidence of residual tumor in the breast or axillary lymph nodes. However, seven out of 14 dissected lymph nodes were found to be positive for metastatic disease.

The patient subsequently received adjuvant chemotherapy, consisting of three cycles of Adriamycin and cyclophosphamide, followed by three cycles of paclitaxel. She also underwent adjuvant radiotherapy to the chest wall and axilla. Additionally, she was started on tamoxifen therapy and was under regular follow-up without any evidence of recurrence.

Notably, the patient had a significant family history of breast and endometrial cancer, with first-degree relatives affected by these malignancies.

Physical examination at presentation revealed bilateral pedal edema, but no pallor, lymphadenopathy, or local recurrence in the breast or axilla. Pelvic examination showed a hard, fixed mass in the cervix, extending to the anterior vaginal wall, which raised suspicion for a primary cervical carcinoma.

Computed Tomography (CT) examination of the abdomen and pelvis revealed a bulky uterus and cervix, with heterogeneous enhancement and serosal irregularity. The parametrial fat showed stranding, suggesting infiltration by the tumor. However, no other metastatic foci were identified in the abdomen or pelvis.

1a 1b

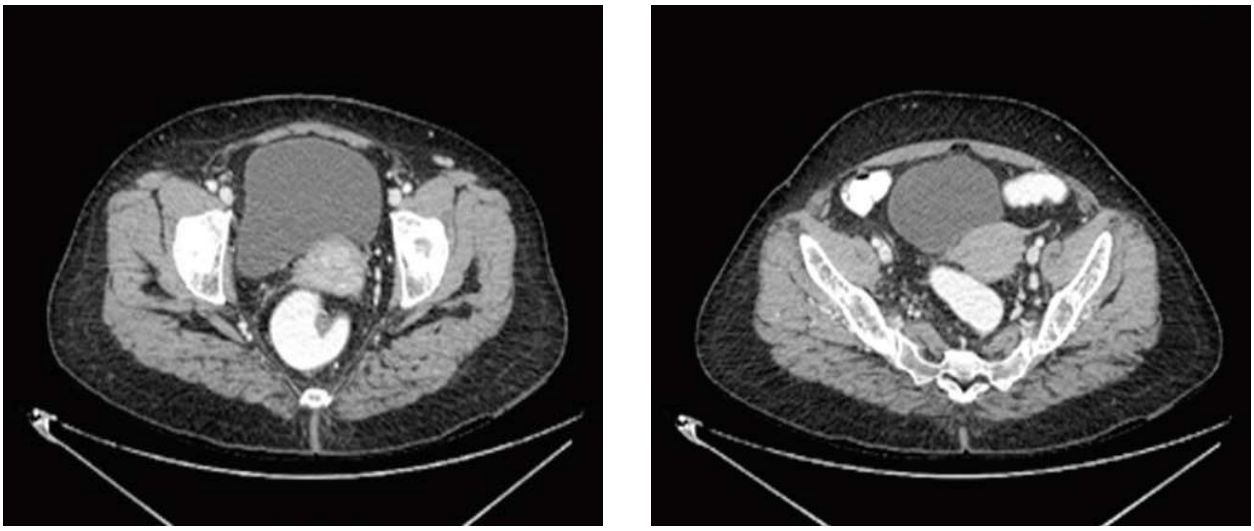

Fig. 1: CT scan showed a bulky uterus and cervix with heterogeneous enhancement, serosal irregularity, and parametrial fat stranding (Fig. 1a and 1b)

A biopsy was performed from the cervical lesion, and histopathological examination revealed malignant cells arranged in an Indian file pattern, characteristic of lobular carcinoma. Immunohistochemical studies were performed, which showed positivity for GATA-3, ER, and PR, and negativity for Her2/neu and E-cadherin. The tumor cells were also negative for PAX8, which ruled out a primary malignancy of the female genital tract.

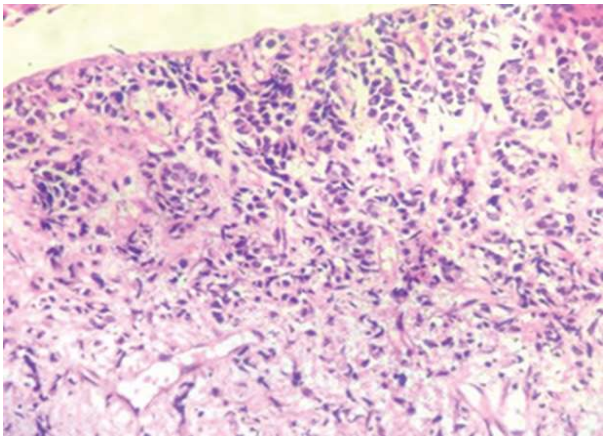

Fig. 2: Biopsy from cervix showing malignant cell infiltration arranged in Indian file pattern and focalalveolar pattern

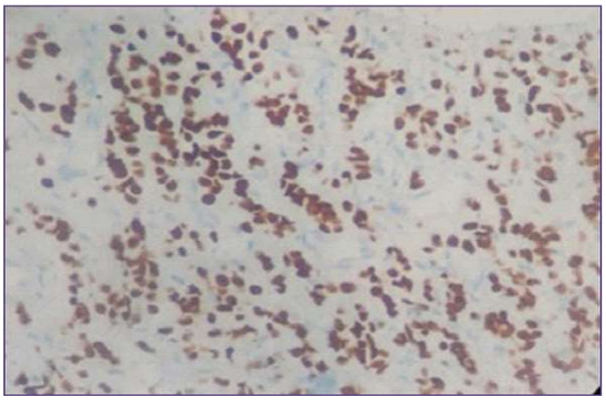

Fig. 3: GATA 3-positive in tumor cells

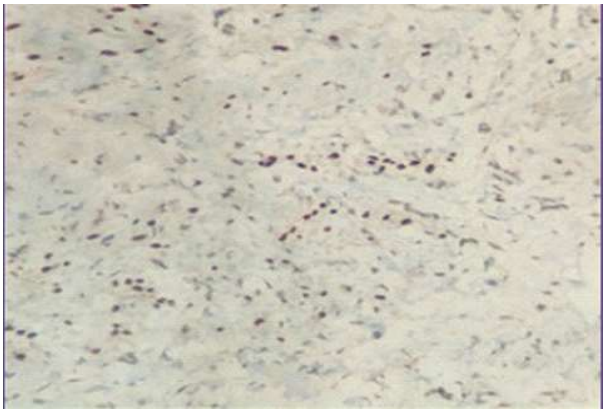

Fig. 4: ER positive in tumor

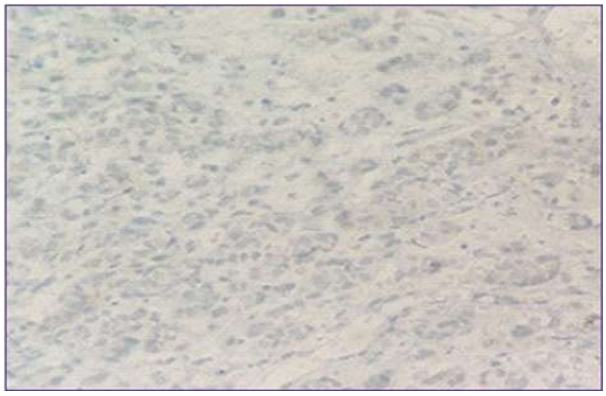

Fig. 5: E-cadherin negative in tumor cells

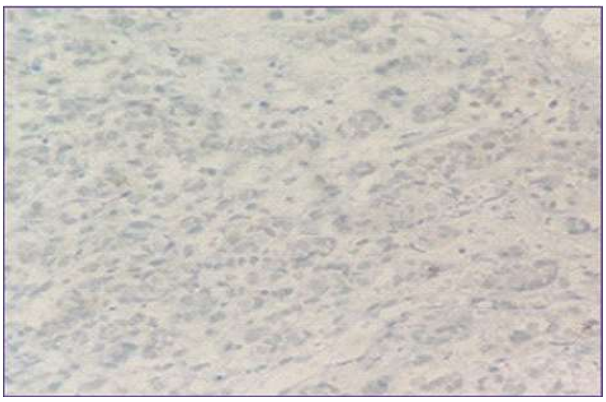

Fig. 6: PAX8 negative in tumor cells

Based on these findings, a diagnosis of metastatic lobular carcinoma of the breast to the cervix was established. The patient was initiated on palliative chemotherapy with paclitaxel and carboplatin.

DISCUSSION

Metastatic disease to the female genital tract from an extragenital primary tumor is uncommon, but can occur in the ovaries and vagina.[4] Uterine cervix involvement is extremely rare, largely due to its limited blood supply and afferent lymphatic drainage.[5] When metastasis to the cervix does occur, it most commonly originates from gastrointestinal tract and ovarian cancers.[6]

Breast cancer metastasis to the cervix is a rare phenomenon, with lobular carcinoma being the most common subtype to metastasize to the genital tract. Lobular carcinoma's unique ability to metastasize to distant organs, including bones, peritoneum, retroperitoneum, and gastrointestinal tract, can be attributed to the inactivation of the Cadherin 1 (CDH1) gene, leading to loss of E-cadherin expression and subsequent abnormalities in cell-to-cell adhesion and signaling.

Radiologically, lobular carcinomas can be challenging to detect in both the breast and metastatic sites, as they tend to grow in sheets rather than discrete masses and induce minimal desmoplastic reaction. Microscopically, metastases from lobular carcinoma are characterized by tumor cells arranged in an Indian file pattern. Immunohistochemical markers, such as GCDFP-15, loss of E-cadherin, and positivity for ER and PR, can aid in diagnosis. Additional markers, including GATA3 and mammaglobin, can also suggest metastasis.Accurate diagnosis is crucial, as the management strategies for primary genital tract carcinoma and metastatic lobular carcinoma differ significantly.

CONCLUSION

This rare case of metastatic lobular carcinoma of the breast to the uterine cervix highlights the importance of vigilance and a high index of suspicion in patients with a history of breast cancer.[7] The unique clinical and pathological features of this case underscore the need for accurate diagnosis and tailored management strategies to optimize patient outcomes. Furthermore, this case serves as a reminder of the complex and heterogeneous nature of breast cancer and the importance of ongoing research and education to improve our understanding and management of this disease.

Conflict of Interest: None declared.

Funding: None.

Ethics Declaration: The author declares that this research was conducted with informed consent, confidentiality, and respect for participants' autonomy and dignity, in accordance with relevant ethical standards.

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