



# A Rare Case of Cervix Metastasis from a Breast Primary



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## Abstract

The patients presenting with metastasis to cervix are handful. Breast is one of the common extragenital site that can metastasize to cervix. Early diagnosis and treatment are the keys to right management. We hereby report an advanced case of breast cancer that was found to have an incidental synchronous lesion in cervix on a PET Scan. She showed limited response to systemic treatment. The overall survival was 8.5 months.

**Keywords:** Metastasis to cervix; Incidental; Synchronous; Breast cancer

## Key-Messages

Breast cancer can metastasize to unusual sites. Infiltrating ductal carcinoma metastasizing to cervix is rare and few cases have been reported till now. A thorough gynecological examination is often recommended. Immunohistochemistry can differentiate between a primary and metastatic cervical lesion and should be done wherever feasible.

## Introduction

Breast cancer is a renowned systemic disease that metastasizes by lymphatic and hematogenous routes although the preferable route of spread is lymphatic [1]. Breast cancer commonly metastasizes to bones, lungs, lymph nodes, liver, and brain [2,3]. Breast cancer metastasizing to cervix is rare. To the best of our knowledge, only 43 cases have been reported in literature till now [4-25]. In majority of patients, breast cancer precedes the diagnosis of metastasis. Of the total reported cases of cervical metastasis, only nine presented with a synchronous lesion in breast [24]. The histology that most often migrates to cervix is infiltrating lobular breast cancer (ILC) [25,26]. The case reported here highlights the importance of unusual site of metastasis of breast cancer; need for a thorough gynecological examination in a case of breast cancer; unusual presentation for an infiltrating ductal carcinoma (IDC); synchronous presentation of breast cancer with cervical metastasis and use of immunohistochemistry for diagnosis if possible.

## Case History

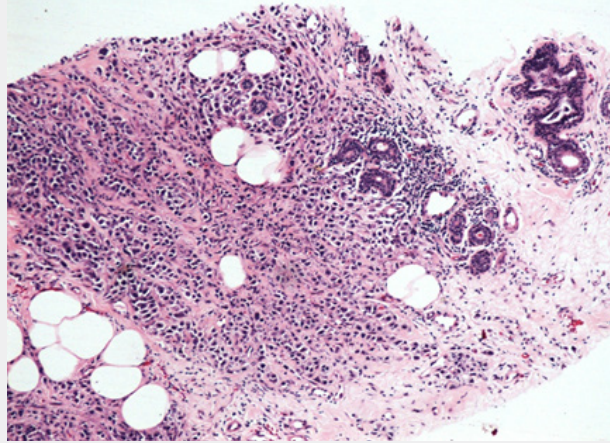
A 45 years old married premenopausal female with two live children presented with a lump in left breast of three months

duration. There was no past history of usage of oral contraceptive pills or hormones in her life. On local examination, she had a single 12 x 10 cm hard lump in central quadrant of left breast free from overlying skin and underlying chest-wall with associated nipple retraction. Ipsilateral supraclavicular fossa was full. Contralateral breast, supraclavicular fossa and bilateral axillae appear normal. Bilateral breast mammography showed architectural distortion in upper and middle quadrants of left breast and lymph nodes in both axillae. Fine Needle Aspiration Cytology from lump proved it Duct Carcinoma. Trucut biopsy (Figures 1 & 2) proved it Infiltrating Duct Carcinoma Grade III with lobular pattern of infiltration; DCIS, LVSI and focal necrosis present; MBR Score 3+3+2=8/9. Ultrasound Whole Abdomen and Pelvis showed bulky cervix and enlarged pelvic lymph nodes. Chest X Ray (PA view) was normal. Whole body PET Scan showed active hypermetabolic lesions in upper inner and outer quadrants of left breast with bilateral axillary, left internal mammary, mediastinal and left supraclavicular lymph nodes. Another hyper-metabolic soft tissue mass in cervix with bilateral inguinal and pelvic lymph nodes was incidentally noted.

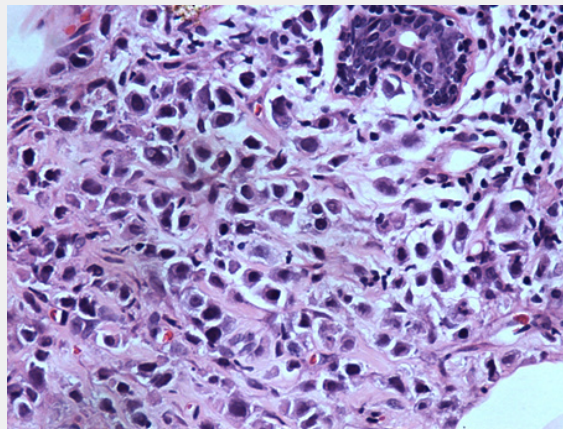
On gynecological examination, cervix was hard and irregular, left parametrium and fornix were thickened and shortened,

bleeding was present. Uterus was anteverted, mobile and non-tender; uterocervical length = 4 inches. Endometrial and endocervical curettage (Figures 3 & 4) proved it a carcinoma metastatic to the cervix. She was finally diagnosed as a case

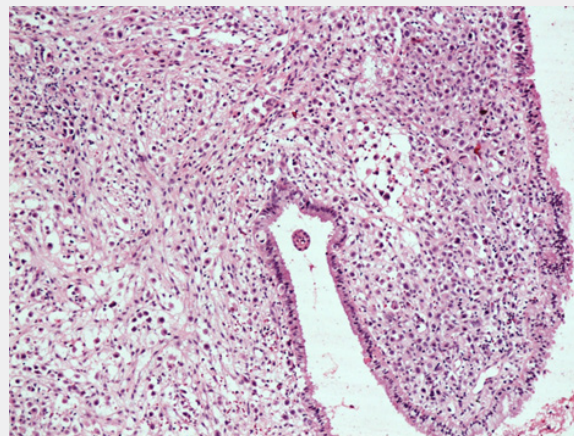
of Carcinoma Breast cT4cN1cM1 with Cervix Metastasis. She received six cycles of intravenous chemotherapy with Inj. Cyclophosphamide (1200 mg), Adriamycin (80 mg) and 5-Fluorouracil (1250 mg) based regimen every 22 days.



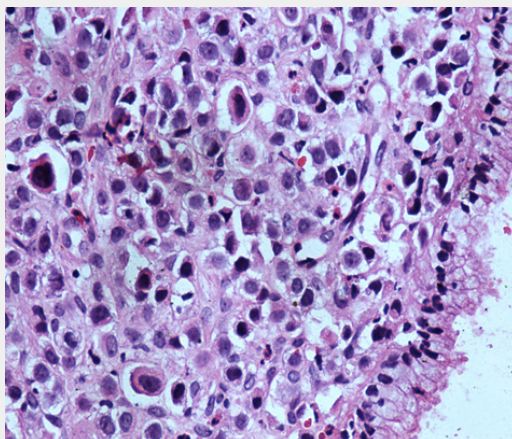
**Figure 1:** Trucut biopsy breast (10x) showing infiltrating duct carcinoma exhibiting lobular pattern (IDC-L).



**Figure 2:** Trucut biopsy breast (40x) shows sheets of pleomorphic tumor cells with cohesive cellular arrangement along with lobular type of infiltration.



**Figure 3:** Cervix biopsy (10x) showing endocervical lining with subepithelial tumor infiltration.



**Figure 4:** Cervix biopsy (40x) showing endocervical lining with subepithelial tumor infiltrates having similar morphology as of breast malignancy.

Whole Body PET scan done after chemotherapy showed a residual soft tissue density of 1.8x1.5 cm size in upper inner quadrant of left breast. Cervical lesion, pelvic and inguinal lymph nodes were persistent with no significant response. She had disease progression with new lesions in various bones like manubrium sternum, right ilium, SI joint, body of D7, D8, D12, L1, L3 and L4 vertebrae. The patient was advised second line intravenous chemotherapy with Inj. Docetaxel (140 mg D1), Carboplatin (200 mg D1-D3), Ifosfamide (2 gm D1-D3) every 22 days. She did not turn up to hospital again and found to die a natural death on telephonic interrogation. The overall survival of patient was 8.5 months.

## Discussion

Metastasis to cervix from extra-pelvic sites is rare as it is of small size, has less blood flow, distal circulation and abundant fibrous tissue [25]. In a review of 149 metastatic tumors to the female genital tract: the ovary, vagina and endometrium were the most frequent locations of metastases [27-29]. Only 3.4% cases had metastases to cervix [29]. Extra-genital sites metastasizing to cervix include breast, stomach, lung, bowel, pancreas, bladder, liver, kidney and gallbladder [29]. A review by Lemoine et al found 33 cases with disease metastatic to cervix; four (12%) of them were from a breast primary [12].

Gynecological examination is often not done in a case of breast cancer. Cervical lesions miss on routine clinical examination and it is less likely to be examined for metastases even during routine postmortem examination. The incidence is 0.3% in a review of 1000 autopsies [30]. In majority of cases, metastases are diagnosed later than primary although in some, presenting symptoms due to metastatic cervical tumor precede diagnosis of the primary tumor in the breast. The longest reported interval was 15 years between breast primary and cervix metastasis [21]. In the case

reported here, the metastatic site was diagnosed incidentally with the primary disease in the same Whole-Body PET-CT Scan. Patient was although asymptomatic for this metastatic lesion in cervix. The suspicion raised by PET CT Scan got confirmed on gynecological examination. The presence of local bleeding was not a symptom and noticed only on gynecological examination. This case highlights the importance of thorough clinical examination of two sites. It simultaneously makes us think whether we should adopt gynecological examination as a routine when we examine a case of breast cancer and vice versa too.

Histological examination has its own importance in diagnosing cervix metastasis. Histologically, adenocarcinomas of cervix are rare in comparison to squamous cell carcinomas. Approximately 50% of them are secondary with their primary site of origin being breast [31,32]. ILC spreads more commonly to gynecological organs in comparison to IDC in the ratio 4:1 [25,26]. On a closer look, it was IDC exhibiting lobular pattern (IDC-L) metastasizing to cervix is being reported in this case. The patient was offered immunohistochemical (IHC) analysis (hormonal studies) as other patients but a clue to why it was not done was not available. The following markers may prove helpful in differentiating primary cervical lesion from metastasis: CK7/CK20, gross cystic disease fluid protein-15, p53, p16, vimentin, BCL2, p63, and napsin A [33].

As per evidence-based management and scientific logic, this patient should have received chemotherapy for her metastatic disease. She was offered palliative chemotherapy with CAF based regimen. Patient had good subjective response with partial reduction in the primary lesion. But the disease kept on progressing and involved multiple bones. She later succumbed and died a natural death at her home. Hence, we can conclude that cervix can be incidentally involved simultaneously in a case of breast cancer; thorough gynecological examination is useful in a case of breast cancer; early diagnosis and treatment are the

keys to right management. This case left us introspecting whether immunohistochemistry could have altered the course of disease and its management.

Taking positive cues, authors would recommend thorough gynecological examination in a case of carcinoma breast; breast examination in a case of carcinoma cervix and immunohistochemistry is mandatory if patient agrees for it. Screening for breast and cervical cancers could prove useful to the society where we are living. The limitation of the study is that the reporting authors were not the ones who encountered the patient on her first visit and subsequently. However, this case generated enough academic interest that later on proved a stimulus for its documentation as a case report. Further clinical information and radiology imaging could not be provided due to non-availability.

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