

CYTODIAGNOSIS OF AN UNUSUAL CAUSE OF CHEST WALL LUMP***¹Behera Pushpanjali, ²Jain Swasti, ³Kumar Vijay, ⁴Pramanik Anup Kumar and ⁵Kaushal Manju**^{1,2}M.D. Pathology, Senior Resident, Dept. of Pathology, PGIMER, Dr RML Hospital, New Delhi.^{3,5}M.D. Pathology, Professor, Dept. of Pathology, PGIMER, Dr. RML Hospital, New Delhi.⁴M.D. Radiodiagnosis, Consultant Radiologist, Dr. Lal Path Labs, Preet Vihar, Delhi.***Corresponding Author: Behera Pushpanjali**

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ABSTRACT

Metastasis to the breast from an extramammary site is very rare. Breast metastasis is most commonly seen in association with contralateral breast carcinoma while colorectal carcinoma metastases forms a smaller part. Only handful of cases, of metastatic colorectal carcinoma in breast has been reported in the literature. Hereby we present a rare case of breast metastasis from colorectal adenocarcinoma, in a 35-year-old female. Post mastectomy, recurrence was noted near scar site. Breast metastasis is rare and chest wall metastasis is even rarer. So, our patient showed metastasis at two uncommon sites, which are seen quite infrequently.

KEYWORDS: breast metastasis, chest wall metastasis, colorectal adenocarcinoma.**INTRODUCTION**

Colorectal cancer is the third most common type of cancer world wide, and most frequently it spreads to the loco regional lymph nodes.^[1] Liver is the most common site of distant metastasis followed by lungs, peritoneal cavity and bone.^[2] However, breast is an extremely uncommon site of metastasis of colorectal carcinoma and may mimic primary breast cancer. In such cases, it becomes very important to distinguish metastatic tumor from primary breast cancer. In this present paper, we describe an interesting case of breast metastasis, which recurred at a different location.

CASE REPORT

In November 2018, a 35-year-old female presented to us with a lump in right chest wall, [figure 1] which was located 1.5 cm above the scar mark of modified radical mastectomy (MRM), which she noticed 3 months ago. On examination, the lump was firm, mobile and non tender with ill defined borders. Contralateral breast and bilateral axilla were free. FNAC from the chest wall lump revealed high cellularity comprising of malignant epithelial cells in discohesive clusters, loose groups, focal acinar pattern as well as singly scattered. [figure 2] Based on these features it was diagnosed as a case of recurrence of infiltrating ductal carcinoma breast. Interestingly, when the history of the patient was traced back, it was found that she had undergone mastectomy because of secondary deposits in the breast.

In May 2014, she had presented to a local hospital with chief complaints of bleeding per rectum since 2 years. CT scan of abdomen showed a diffuse irregular

circumferential thickening in colorectal wall. Colonic mass biopsy was then performed and histopathological diagnosis of mucinous adenocarcinoma of colorectal origin was made in conjunction with immunohistochemical (IHC) findings. She underwent low anterior resection. 12 out of 12 lymph nodes resected showed tumor deposits. So, the tumor was labeled as stage III (pT₃N_{2b}M₀). And she was given adjuvant chemoradiotherapy. In June 2017, she noticed a lump in right breast, for which underwent MRM, histopathology report of which was consistent with metastatic adenocarcinoma with mucinous features. The tumor was negative for estrogen (ER), progesterone (PR) and HER2/neu receptors, Gross cystic disease fluid protein-15 (GCDFFP-15), mammaglobin and cytokeratin7 (CK7). However it was positive for CDX2 and CK 20, indicating its colorectal origin. November 2018 she presented to us with a lump in right chest wall, which on FNAC showed malignant features. So, a cell block was prepared from aspiration material. A panel of IHC markers were applied. The malignant cells were shown to be positive for CDX2 and CK20, [figure2] while being negative for CK 7, ER, PR, Her2-neu, Mammaglobin, and GCDFFP-15. Overall, the tumor was morphologically and immunophenotypically consistent with a metastatic colorectal adenocarcinoma. Unfortunately, on repeat PET- CT scan, the patient had developed a metastatic nodule in right lung and metabolically active lesions in sub pectoral and mediastinal lymph nodes.[figure 3] Also, focal increased uptake was noted in D12 and L4 vertebrae- likely suggesting early marrow metastasis. The patient then received 3 cycles of chemotherapy (FOLFOX) and the chest wall lump has subsided.

However, her general examination revealed multiple subcentimetric nodules over scalp, suggesting a wide spread metastasis.

Legends

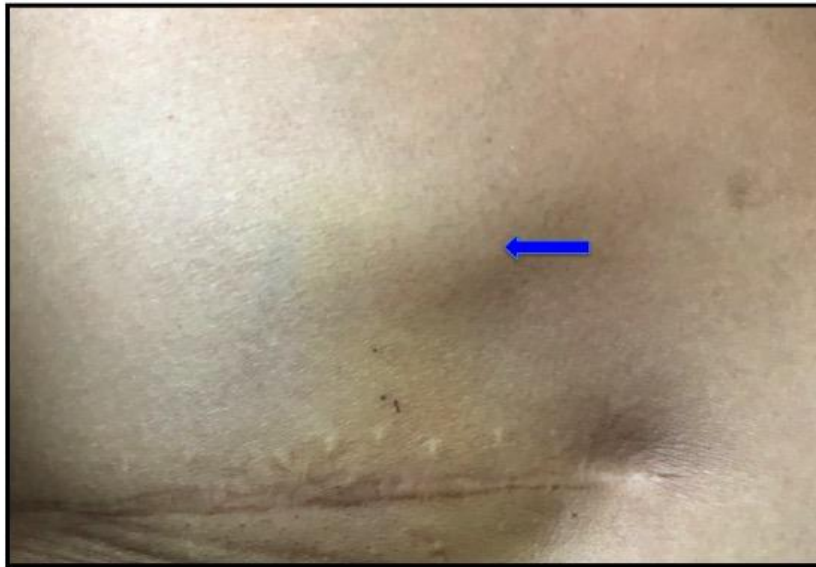


Figure 1: Illdefined lump in the right chest wall.

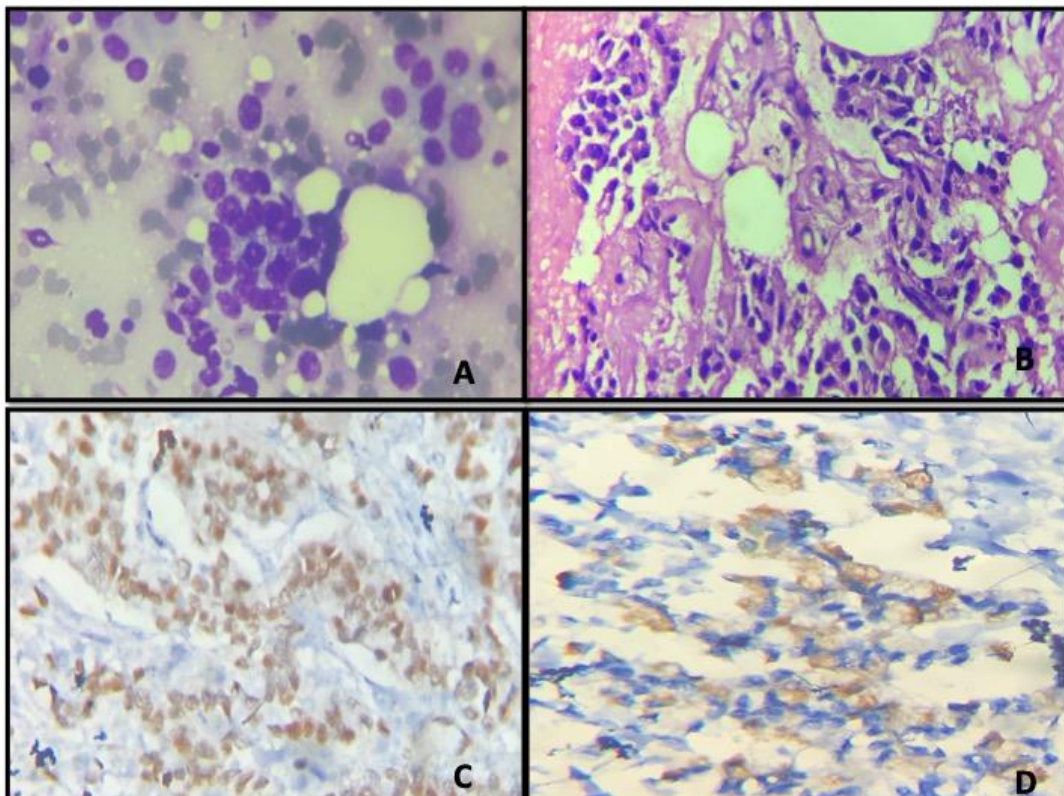


Figure 2-A- Malignant epithelial cells in vague adenomatous pattern, MGG, 400X.

B- Cell block showing malignant cells in glandular pattern, MGG, 400X.

C- CDX2 positive tumor cells, 400X.

D- CD 20 positive, 400X.

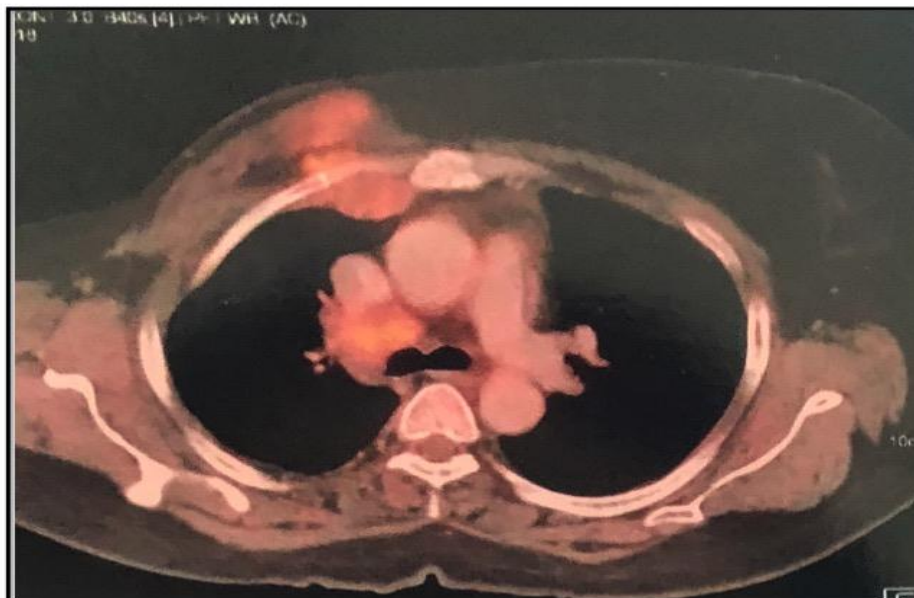


Figure 3: PET CT –showing metabolically avid lesion in right chest wall, right lung and mediastinal lymph nodes.

DISCUSSION

Primary breast cancers are one of the most common malignancies in women and are one of the leading cause of mortality and morbidity in female population. So, it's imperative to differentiate between primary breast cancer and metastatic deposit in breast as the treatment modalities for both differs. In the published literatures, there are very few reported cases of colorectal cancer that metastasized to the breast, and these are mainly seen in the settings of concomitant liver and lung metastasis.^[3] Likewise in our patient, lung metastasis was found on follow-up PET CT. On extensive search of literature, we found a total of 33 cases of primary colorectal cancer metastasizing to breast, including ours, out of which only three were males.^[4] The median age at which breast metastasis seen is 54 years.⁵ In contrast to this, our patient was little younger as she was only 35 years old when she was first diagnosed with primary colorectal carcinoma. The average time interval to develop metastatic lesions in the breast from a primary source is about two years.^[5] This finding is consistent with the present case. Sironi et al reported a case of metastatic deposit in breast, after a long breach of ten years.^[6] Metastasis to breast most commonly presents as a mobile lump, which doesn't cause nipple retraction or bloody nipple discharge.^[7] While primary breast cancers most commonly presents as a rapidly growing hard, fixed mass with nipple retraction. FNAC often play a vital role in early diagnosis of extra-mammary malignancy metastatic to the breast. It can identify upto 0.5–5% of such cases.^[8] However, the diagnosis needs to be confirmed by histopathological and IHC findings. CK 20 and CDX2 immunostaining are highly specific and sensitive for colorectal adenocarcinoma.^[9] Primary breast tumors stain positive for GCDFP-15 and

almost half of the cases will exhibit ER and PR positivity.^[7]

CONCLUSION

Metastasis to breast from colorectal carcinoma is rare and recurrence of such metastasis at a different location is rarer. Due to rarity of such incidence, physicians lack the knowledge and vigilance towards colorectal breast metastases. Detailed past medical history, appropriate radiologic workup, accompanied by FNAC and IHC are extremely helpful in determining primary versus metastatic tumor of breast. So, every pathologist should keep this in mind while dealing with breast lumps as not all breast tumors are of primary breast origin.

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