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Case Report

Dermatomyositis as a presenting feature of locally advanced breast cancer

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ABSTRACT

Breast cancer is the most common malignancy in women in India. Although it is a common malignancy, it may sometimes present with rare manifestations of idiopathic autoimmune inflammatory myopathy. The diagnosis can be challenging as the skin manifestations may be masked by the advanced nature of the disease. Here, we present a case of a postmenopausal lady who presented with a breast lump with overlying skin rash extending up to the neck. It was initially considered to be a part of locally advanced breast cancer. However, subsequently, she presented with proximal muscle weakness with typical electromyographic features and raised muscle enzymes. Her symptoms started resolving with neoadjuvant chemotherapy and radiotherapy.

Keywords: Dermatomyositis, Paraneoplastic syndromes, Rash, Breast cancer

INTRODUCTION

Breast cancer is the most common malignancy in women in India, with age-adjusted incidence rates of 25.8/100,000 women.[1] It is a heterogeneous disease with varied presentation. It may vary from presenting as a small lump to metastatic diseases. However, rarely, it may present with a paraneoplastic syndrome. Inflammatory myopathy, particularly dermatomyositis (DM), is known to be associated with malignancy,[2,3] with ovarian cancer, breast cancer, melanoma, colon cancer, and non-Hodgkin's lymphoma being most common.[4] It may present before or after the diagnosis of cancer. The typical skin manifestations include heliotrope rash, Gottron's sign, V-sign, or the shawl sign and rough irregular horizontal lines resembling mechanic's hands. There is symmetrical proximal myopathy with other extramuscular features or be an overlap syndrome with other connective tissue disorders.[4] We describe a case here of a patient who was diagnosed as breast cancer and developed muscle weakness in due course of time. She came with some skin manifestations without any muscle weakness which was confused with locally advanced breast cancer with skin involvement.

CASE REPORT

A 62-year-old postmenopausal lady with no medical history presented with a retroareolar breast lump of about 2 cm in size with clinically palpable axillary lymph nodes. She had erythema extending from the skin over the breast to the neck. Ultrasound mammography showed BIRADS 5 lesion. She then had a breast biopsy, which showed a triple-negative

Grade II intraductal carcinoma. A positron emission tomography showed a metabolically active lesion in the breast of size 1.6 cm × 1.6 cm, with the overlying skin being thickened. There were metabolically active axillary lymph nodes. After a multidisciplinary tumor board discussion, she was planned for neoadjuvant chemotherapy with adriamycin and cyclophosphamide followed by paclitaxel. However, during investigations, she started developing mild generalized weakness and generalized myalgia. However, she had a rapid onset of ascending quadriparesis over a week, then admitted with weakness of all four limbs. Later, she progressed to have difficulty in neck holding. Neurological examination revealed decreased power predominantly of the proximal muscles (Grade 3/5) with diminished, but present reflexes with severe pain in the muscles. Plantar reflex had a flexor response. There was no cranial nerve involvement. She had a rash in the periorbital area and around the neck. Further, investigations revealed a normal spine magnetic resonance imaging with myocutaneous edema of the paraspinal muscles. Creatine phosphokinase was raised with normal aldolase. Antibody profile was negative for anti-Jo1 antibodies, ANA, rheumatoid factor, and anti-dsDNA antibodies. A rheumatologist consult was obtained, who opined this as DM in a case of breast cancer. Electromyography was suggestive of myopathy. Muscle biopsy revealed perifascicular atrophy with capillary alterations in non-necrotic muscle fibers. She was then started on prednisolone 40 mg/day. Her weakness improved gradually over a few weeks. She was started on neoadjuvant chemotherapy, and after eight cycles of neoadjuvant chemotherapy, she could not be taken up for surgery. She underwent definitive radical radiotherapy to breast and chest wall with axillary nodal irradiation. After 6 months of completion of therapy, she is in complete remission with a good recovery of neurological function.

DISCUSSION

Breast cancer may present skin involvement in the form of edema, satellite nodules, ulcers, or peau d'orange over the breast. Sometimes, the skin involvement of DM may not remain limited to neck and may involve the skin over the breast. It may be the initial presentation of systemic inflammatory myopathy like DM mimicking skin involvement by the malignancy. Also, the rash may be easily missed in Indian patients typically due to the dark skin color. It may also be confused with other skin conditions such as contact dermatitis, especially in women, and wearing ornaments.

DM is a rare disorder with an incidence of 1/100,000.[2,3] The highest risk of malignancy is in patients aged 45–74 years at the time of diagnosis.[5] It has a known association with multiple cancer, and breast cancer is one of them, though not the most common. The diagnostic criteria[5] for DM are as follows: (1) Symmetric proximal muscle weakness, (2) muscle biopsy evidence of myositis, (3) increase in serum skeletal muscle enzymes, (4) characteristic electromyographic pattern, and (5) typical DM rash. Diagnostic criteria were as follows: Definite: 5 plus any 3 of 1–4 probable: 5 plus any 2 of 1–4 possible: 5 plus any 1 of 1–4. This case met the criteria for definite DM, meeting three of the four criteria with a typical rash.

Skin manifestations are typical but highly variable. Sometimes, it may be confused with the skin involvement of breast cancer and may go unnoticed and considered as part of the primary disease process. However, there was a delay in diagnosis of the DM until the muscular weakness manifested, though skin rash was slowly developing over some months. It must be kept in mind that skin involvement with typical rash in DM is not equivalent to malignant skin involvement of breast cancer, and it resolves as the DM is treated. It is challenging to diagnose DM and requires a multidisciplinary team effort with internists, dermatologists, rheumatologists, and oncologists.

CONCLUSION

The most common malignancy of women may present with rare manifestation like DM. Muscle weakness in the background of malignancy may strongly suggest a diagnosis of DM, especially in the presence of skin manifestation. Skin involvement of breast cancer must not be confused with the rash of DM ,and it should not be considered as malignant skin involvement.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

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