CASE REPORT

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Breast Cancer Associated with Dermatomyositis

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Abstract

Dermatomyositis (DM) is a rare idiopathic inflammatory myopathy with characteristic skin lesions. Case series have shown an association between dermatomyositis and malignancy. Malignancy has been found in 15-25% of the adult patients with dermatomyositis.

A 50-year-old new case of breast cancer, was admitted with muscle weakness and inability to walk. Physical examination revealed fever, periorbital edema, a heliotrope rash on the upper eyelids, a large right-sided breast mass and erythematous plaques on the upper chest, abdomen and legs. During hospitalization, she developed a nasal speech, dysphasia, and nasal regurgitation of food and water.

A clinical diagnosis of dermatomyositis secondary to breast adenocarcinoma was made according to the skin lesions, muscle weakness, elevated ESR, and increased CPK and LDH levels. Wide spectrum antibiotics and Dexamethasone were administered but fever persisted. Although chemotherapy was recommended, she developed respiratory failure and aspiration pneumonia and died.

Dermatomyositis is one of the paraneoplastic syndromes which are associated with breast cancer. Although treatment of dermatomyositis generally includes corticosteroids with or without immunosuppressants, cancer-directed specific therapy including surgery and/or chemotherapy would be more effective. Dermatomyositis should be considered in breast cancer patients with skin lesions and muscle weakness and cancer-specific therapy should be started as soon as possible.

Keywords: dermatomyositis, breast neoplasm, drug therapy, exanthema

Introduction

Dermatomyositis (DM) is a rare inflammatory myopathy with typical skin lesions including heliotrope rash, Gottron's papules, and cuticular changes. Etiology of dermatomyositis is not clear. It is a systemic disease in which articular, gastrointestinal, pulmonary and cardiac involvement may occur.

In most large population-based cohorts, malignant lesions have been found in 20-25% of the adult patients with dermatomyositis.[1] Dermatomyositis associated with ovarian cancer has also been reported.[2-5] Cancer-associated dermatomyositis is more commonly found in older patients and is associated with a poor prognosis.[5] The types of cancers which are found in patients with dermatomyositis are similar to those occuring in general population.[6] Love et al. studied 212 patients with dermatomyositis and polymyositis and found that only 1 out of every 12 patients with an underlying malignancy had antisynthetase autoantibodies, including Jo-1, PL-7, PL-12, OJ, and, EJ which are common in dermatomyositis and polymyosits patients.[7] This report suggests that unknown substances are released by cancer cells which have toxic effects on skin and muscles. It might be the reason why cancer-directed therapy improves the symptoms of the patients.[8]

Although treatment of dermatomyositis generally includes corticosteroids with or without immunosuppressants, it has been reported that treatment of the underlying malignancy could be more effective.[3,4,8] The clinical course of paraneoplastic dermatomyositis may precede, present simultaneously, or follow that of malignancy. Resection of the malignancy improves the symptoms of dermatomyositis[9-11] but they are not improved with systemic steroid therapy when underlying cancer remains untreated.[12] Overall, mortality in patients with cancer and concurrent

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DM is reported to be as high as 65.5%.[11] Sigurgeirsson et al. reported a high mortality rate in patients with DM, because of the deaths caused by underlying cancers.[13]

Here, we present a case of dermatomyositis associated with breast cancer.

Case Report

A 50-year-old female, who was a new case of breast adenocarcinoma, was admitted with muscle weakness and inability to walk. Physical examination revealed fever, periorbital edema, heliotrope rash on the upper eyelids, skin erythema and a large breast mass (6x10 cm) in her right breast, and erythematous plaques with scaling on the upper chest, abdomen and legs. She had reduced muscle force (2/5) and deep tendon reflexes in lower extremities. Related laboratory findings included elevated ESR and increased levels of LDH and CPK.

Abdominal ultrasound revealed a 1.5-cm hypoechoic nodule in the liver suggestive of a metastatic lesion. Thoraco-Lumbar and brain MRI were normal.

During hospitalization, she developed a nasal speech, dysphasia, and nasal regurgitation of food and water.

The clinical diagnosis of dermatomyositis secondary to breast adenocarcinoma was made due to the cutaneous lesions, muscle weakness, elevated ESR, and increased LDH and CPK levels. However, fever persisted despite the administration of wide spectrum antibiotics and Dexamethasone. Although chemotherapy was recommended, she rapidly developed respiratory failure and aspiration pneumonia and died.

Discussion

The association between dermatomyositis and malignancy has been well documented. The reported rate of malignant diseases in dermatomyositis is approximately 20-25%.[1] Different types of cancers have been reported in patients with dermatomyositis including gynecologic malignancies, lung, nasopharyngeal, colorectal, stomach, and breast cancers and non-Hodgkin's lymphoma.

Malignancy is more common in elderly patients (age>50) with dermatomyositis,[13] but it has also been rarely reported in young adults and even in children.[1] Hence, careful physical examination to detect the malignancy is necessary.

Dermatomyositis may precede the development of some malignancies such as lung, breast, or ovarian cancer by several months.[13] Although, dermatomyositis often precedes the diagnosis of breast cancer, they may manifest simultaneously. This case report showed that dermatomyositis might develop in association with breast cancer. Our patient had an unresectable large tumor with liver metastasis. Despite steroid and antibiotic therapy; she rapidly developed respiratory failure and aspiration pneumonia before chemotherapy.

Dermatomyositis may be the only manifestastion of a cancer; therefore, a careful physical examination and extensive evaluation for a suspected underlying malignancy should be undertaken. Dermatomyositis should be considered in breast cancer patients with skin lesions and muscle weakness.

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