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An unusual cause of dyspnea

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Abstract

A 41 year-old woman case with nonproductive cough, dyspnea, weight loss and fever is described. Laboratories were remarkable for hypoxemia, leukocytosis, anemia and elevated hepatic enzymes. Chest X-ray demonstrated bilateral interstitial opacities. She was hospitalized with diagnosis of suspected pneumonia. Patient's condition progressed to multiple organ failure and unfortunately, death. The diagnostic of gastric adenocarcinoma with lymphangitic spread was established at autopsy. Lymphangitic carcinomatosis can be easily confused with other interstitial lung diseases especially when primary malignancy is unknown. Physicians must be aware of nonspecific findings of this disease in order to obtain a diagnosis and institute adequate therapy.

Key words: Dyspnea, pulmonary metastasis, gastric adenocarcinoma, lymphangitis carcinomatosa.

Introduction

Pulmonary metastatic disease is a very common presentation in multiple primary malignancies, often as high as 30-40%, according to numerous reports. However, only 7% of these malignancies are related to lymphangitis carcinomatosa. (1) This pathologic entity is characterized by a diffuse and deleterious permeation of the lungs' lymphatic system with metastatic malignant cells, generally with terminal consequences. These primary tumors are usually found in the breast, stomach, lung, pancreas, prostate, cervix and colon; being adenocarcinoma the most common histological type. (1)

We present a rare case of a young woman with pulmonary lymphangitic spread from gastric adenocarcinoma.

Case report

A 41 year-old woman without history of systemic illness came to our institution with nonproductive cough, dyspnea, night sweats and fever of two weeks' duration. In addition, she suffered with anorexia for two months' duration and 20 pounds weight loss. There was no history of smoking, illicit drugs use or exposure to environmental toxins. Physical examination revealed mild respiratory difficulty with bilateral palpable cervical nodes and crackles at the lungs' bases. The remains of the physical exam was unremarkable. Laboratories were significant for leukocytosis (WBC=17.2x10^3/µl), anemia (hemoglobin=9.6 g/dl), hypoxemia at room air (pO2=64.8 mmHg, oxygen saturation=93.7%) and increased hepatic enzymes. Chest X-ray showed bilateral interstitial infiltrates. The chest computed tomography (CT) showed bilateral pulmonary infiltrates and pleural effusion without masses (**Figure 1**). Abdominal pelvic CT demonstrated liver and bone lesions suggestive of a metastatic disease. Bronchoalveolar lavage

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and thoracentesis results were unremarkable. Cervical lymph node biopsy identified a metastatic carcinoma. Patient was unresponsive to intravenous antibiotics for suspected pneumonia having a drastic clinical deterioration eventually requiring mechanical ventilation. The patient's condition progressed to multiple organ failure, and unfortunately she died within two weeks of her admission. The autopsy revealed a stage T4N2M1 gastric adenocarcinoma with diffuse infiltration known as linitis plastica (**Figure 2**). Metastasis to the lung, liver, spleen, pancreas, adrenal glands, omentum, ovaries (Krukenberg tumor), bone and lymph nodes was found.

Discussion

The gastric carcinoma incidence is decreasing in many industrialized nations including Japan, which has the highest one. The patient we presented had atypical features of this disease since it is an uncommon malignancy in Hispanics, it occurs more frequent in men and rarely before the age of 40 years. (2) She also had respiratory manifestations at the time of presentation instead of the classic gastrointestinal symptoms. The usual clinical presentation includes weight loss, abdominal pain, nausea, anorexia, dysphagia, melena and early satiety. (2)

Gastric adenocarcinomas can be subdivided into two categories: an intestinal type characterized by neoplastic cells forming glandlike tubular structures, and a diffuse type which is undifferentiated giving rise to gastric wall infiltration, resulting in tissue thickening known as linitis plastica. The disease, as seen in our patient, is often advanced at the time of presentation and currently there is no specific screening test available. Gastroscopic examination has been contemplated but no change in mortality has been reported. (2) Gastrectomy is the standard treatment option that has curative intent. Survival benefits have been demonstrated in patients receiving chemotherapy before gastrectomy and chemoradiation therapy after surgery. However, this is under clinical evaluation. (3,4)

Lymphangitic carcinomatosis can be easily confused with other interstitial lung diseases, especially when primary malignancy is unknown. The radiographic manifestations include reticular densities, Kerly B lines, and subpleural edema. These findings are nonspecific, and many symptomatic patients have negative results. Nodular thickening of the bronchovascular bundles, reticular densities, and polygonal lines are highly characteristic findings on chest CT scan. (5) Another useful diagnostic tool is a bronchoalveolar lavage (BAL), where adenocarcinoma and tumors with lymphangitic growth patterns had a diagnostic yield higher than 80%. (6) That was not the case in our patient since the BAL failed to identify any neoplastic cells. The definitive diagnosis usually requires an open lung biopsy, but this is an invasive procedure in already respiratory compromised patients. Other diagnostic option is a transbronchial biopsy via the fiberoptic bronchoscope, a relatively less invasive technique with great efficacy and low morbidity and mortality. (7)

Pulmonary lymphangic carcinomatosis in a previously healthy patient is very unusual. As in our patient, the clinical presentation and laboratories are usually nonspecific, which makes the diagnosis a medical challenge. Although the usual outcome of this condition is almost catastrophic, we consider that any young patient with a nonspecific interstitial pattern on chest images should aware physicians to be very aggressive in getting an early tissue diagnosis in order to institute adequate therapy.

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Figure 1. Chest computed tomography showing bilateral interstitial infiltrates and pleural effusion

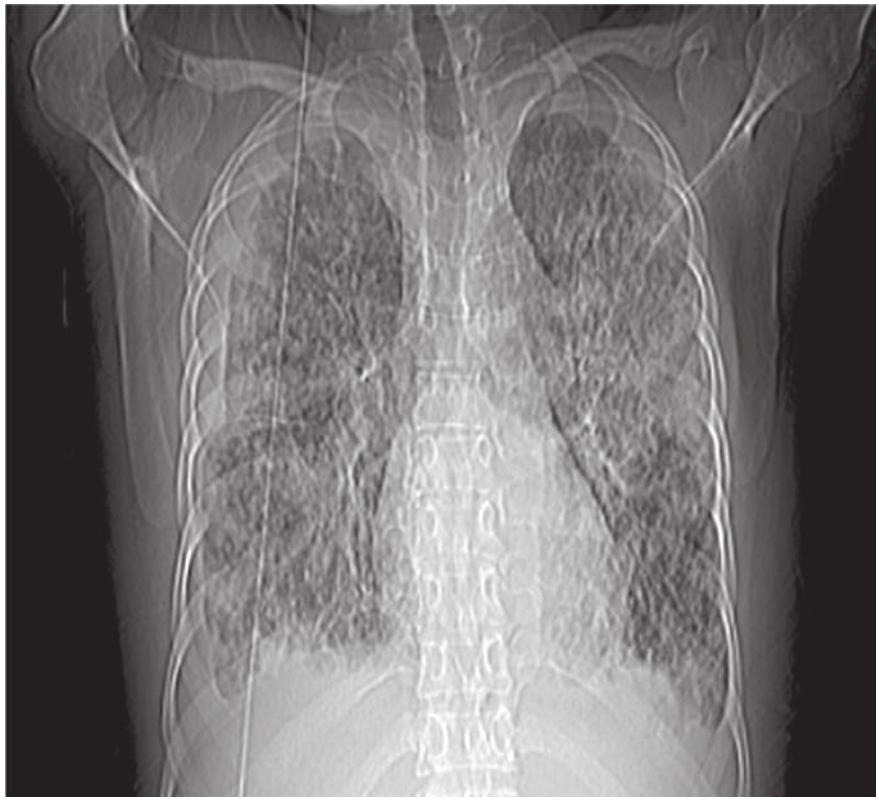

Figure 2. Adenocarcinoma of the stomach, diffuse type known as linitis plastica

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