Pleural Effusion Resulting from Metastatic Papillary Carcinoma of the Thyroid*

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We present a patient with a symptomatic pleural effusion resulting from papillary carcinoma of the thyroid metastatic to the pleura. Distinctive features include clinically evident pleural metastasis and the presence of psammoma bodies in the pleural fluid, which are characteristic (albeit not pathognomonic) of papillary carcinoma of the thyroid.

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Although papillary carcinoma of the thyroid generally follows an indolent course characterized by slow growth and the absence of distant metastases, several available reports suggest that metastasis to bone and/or lung parenchyma may occur infrequently. While pleural metastases have been reported in necropsy series, the clinical occurrence during life of pleural effusions due to metastatic papillary carcinoma of the thyroid has not been recognized.

To extend the clinical and pathologic spectrum of metastatic papillary carcinoma of the thyroid, the present case report is of a patient with dyspnea due to a massive pleural effusion caused by metastatic papillary carcinoma of the thyroid. A distinctive cytologic feature of the pleural fluid is the presence of psammoma bodies, which, to our knowledge, has not been described previously.

CASE REPORT

A 50-year-old woman presented to her local physician with a one-week history of increasing shortness of breath. Associated symptoms included thick yellow sputum, occasional wheezing, paroxysmal nocturnal dyspnea, and two-pillow orthopnea. A chest roentgenogram revealed a large free-flowing right-sided pleural effusion, and the patient was referred to the Cleveland Clinic Department of Pulmonary Disease for further examination.

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**Figure 1. The papillae are lined by tall columnar cells with faintly staining cytoplasm and predominantly basal large nuclei (hematoxylin-eosin, original magnification ×129).
Three years earlier, the patient had undergone biopsy of a left-sided neck mass that revealed papillary carcinoma of the thyroid, metastatic to a cervical lymph node. She subsequently underwent a left partial thyroidectomy and isthmusectomy (Fig 1). No further lymph node involvement was discovered at that time, but six months later, further cervical lymphadenopathy was noted and a biopsy specimen revealed recurrent papillary carcinoma.

Seventeen months before the current presentation, a right hemithyroidectomy and left-sided neck dissection were performed, revealing a metastatic focus on the left but no evidence of papillary carcinoma in the right thyroid lobe. One year before the present hospital admission, an $^{131}I$ body scan revealed evidence of residual metastatic disease in the neck, multiple bilateral pulmonary metastases, and a left iliac crest metastasis. Chest roentgenograms showed no parenchymal lesions or pleural effusions at that time.

Currently, physical examination showed that she was afebrile and had poor dentition. Neck examination showed well-healed cervical scars without adenopathy and chest examination showed dullness on the right side occupying two thirds of the chest.

A thoracentesis was performed, revealing exudative fluid (pleural fluid total protein, 4.5 mg/dl; pleural fluid lactate dehydrogenase [LDH], 179 mg/dl; serum LDH, 150 mg/dl). Cytologic examination showed papillary adenocarcinoma cells surrounding psammoma bodies (Fig 2).

**DISCUSSION**

Novel features of the presently reported case include the following: (1) clinical presentation of metastatic papillary carcinoma of the thyroid as a large pleural effusion; and (2) cytologic demonstration of psammoma bodies, considered characteristic of papillary carcinoma of the thyroid, in the pleural fluid.

Although relatively uncommon, the metastatic potential of papillary carcinoma of the thyroid is widely recognized, with common metastatic sites including the bones and lung parenchyma (Table 1). However, as reviewed in Table 1, pleural metastasis from papillary carcinoma is rare, having been reported in only one series. No clinical data are provided to elucidate the clinical features associated with metastases recorded at necropsy. The current case extends available experience with metastatic papillary carcinoma and emphasizes this tumor's potential to metastasize to the pleura and to cause large, symptomatic effusions.

Histologically, the current tumor is a tall cell variant of papillary carcinoma of the thyroid based on the cells' being at least twice as high as wide. Tall cell variants may demonstrate unusually aggressive clinical behavior (ie, frequent metastases), but previously they have not been reported to cause pleural metastases recognized in life.

Another novel feature of the current patient's course is the presence of free-floating psammoma bodies within the pleural effusion. Although distinctive, psammoma bodies are not a pathognomonic feature of papillary carcinoma of the thyroid, as they also occur in other tumors, most notably adenocarcinomas of the lung, kidneys, and ovaries.

In summary, the current case extends the clinical spectrum of metastatic papillary carcinoma of the thyroid. Novel features include a pleural effusion causing bothersome dyspnea and the recognition of psammoma bodies within the pleural effusion.

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Actinobacillus actinomycetemcomitans Pneumonia with Chest Wall Involvement and Rib Destruction*

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There are four cases of Actinobacillus actinomycetemcomitans pulmonary infections reported in the English literature prior to 1990. We report a case of A. actinomycetemcomitans pulmonary infection with invasion of overlying soft tissue, rib, and sternum. This manifestation has not previously been reported. The clinical manifestation is similar to that of Actinomyces israelii, which may be misinterpreted as malignancy initially. The portal of entry of A. actinomycetemcomitans may be via hematogenous spread or aspiration. The diagnosis depends on culture after prolonged incubation of the involved tissue obtained by aspiration or biopsy. Elevated serum antibody is helpful for diagnosis of active infection. A. actinomycetemcomitans is susceptible to most antibiotics, but is frequently resistant to penicillin, vancomycin, clindamycin, and erythromycin. Isolation of the organism and an in vitro drug sensitivity testing are important in managing the patient. Our patient recovered after a three-month regimen of penicillin.

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Actinobacillus actinomycetemcomitans is a slow-growing, capnophilic Gram-negative coccobacillus. The pathogen may cause endocarditis, soft tissue abscess, and periodontitis in humans. However, infection of other rare sites has recently been reported, including brain abscess, thyroid abscess, osteomyelitis, urinary tract infection, and pneumonia. The first documented A. actinomycetemcomitans pulmonary infection was reported in 1971. To our best knowledge, there are only four cases of pulmonary infection reported before 1990 in the English literature. Herein, we report a documented case of A. actinomycetemcomitans pneumonia with involvement of the chest wall, destruction of the ribs and with contralateral pleural effusion. This manifestation has never before been reported.

CASE REPORT

A 67-year-old man presented with a one-month history of persistent cough and progressive bulging of the right anterior chest wall. He had a history of diabetes mellitus and mild hypertension. The diabetes mellitus was well controlled with oral hypoglycemic agents. He had experienced intermittent nonproductive cough since May 1990, which later became persistent and productive of whitish sputum. Right chest pleuritic pain and progressive bulging of the right anterior chest wall developed in early December 1990. He also lost about 4 to 5 kg in three months.

Physical examination at admission revealed a bulging mass about

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FIGURE 1. Chest posteroanterior roentgenogram showing haziness in the right middle lobe and blunting of the left cardiophrenic angle with volume reduction.

FIGURE 2. Chest computed tomography revealing a mass-like lesion in the right middle lobe with rib destruction (arrow head) and chest wall involvement (arrows).

Actinobacillus Actinomycetemcomitans Pneumonia (Yuan et al)