CASE REPORT

Pulmonary manifestation of inflammatory bowel disease in pregnancy

Giora Netzer a,*, Gregory Tino b

a Division of Pulmonary and Critical Care Medicine, Departments of Medicine and Epidemiology and Preventive Medicine, MSTF Building, Room 800, 685 West Baltimore Street, Baltimore, MD 21201, United States
b Division of Pulmonary, Allergy and Critical Care Medicine, Hospital of the University of Pennsylvania, 831 West Gates Building, 3400 Spruce Street, Philadelphia, PA 19104, United States

Received 11 July 2008; accepted 1 August 2008

KEYWORDS
Lung diseases;
Colitis, ulcerative;
Inflammatory bowel diseases;
Pregnancy

Summary
Background: Inflammatory bowel disease (IBD) is a systemic disease that can present with pulmonary manifestations. IBD may be exacerbated during pregnancy.
Case: We describe the first reported case of pulmonary manifestation of ulcerative colitis (UC), an IBD, with necrobiotic nodules, in a pregnant patient. A 27-year-old woman with a history of UC, 25 weeks pregnant, presented to our hospital with bilateral pulmonary nodules. After serologic and radiologic evaluation, she underwent biopsy by video assisted thoracic surgery and a tissue diagnosis was made.
Conclusion: This case illustrates the need to consider extra intestinal manifestations of IBD, the need to establish diagnosis by biopsy, and the consideration of appropriate therapeutics in the pregnant patient.

© 2008 Elsevier Ltd. All rights reserved.

case

A 27-year-old woman, para 1, 25 weeks pregnant and with a history of ulcerative colitis (UC), presented with bilateral pulmonary nodules. She had been diagnosed with UC at age 19, and treated primarily with mesalamine. At 11 weeks gestation, she was treated with a 5 week course of steroids for a flare of her UC. After completing the steroids, she developed pleuritic chest pain and was given azithromycin for an abnormal chest radiograph at an outside hospital (Fig. 1). A second course of steroids was given for a second flare of her gut disease, exacerbated by NSAID use for her chest pain, and her gut and pulmonary symptoms improved, and then worsened after cessation of steroids. She then presented to our hospital.

The patient had no history of premature fetal demise. She was diagnosed with UC at age 19 and had been managed primarily on mesalamine. She had several flares of her gut disease requiring prednisone but has not undergone...
endoscopy since the time of her diagnosis. She was a life-long nonsmoker, drank alcohol occasionally, and had no history of injection drug use. Computerized tomography with angiography revealed bilateral nodules, with no evidence of pulmonary embolism (Fig. 2). The basic metabolic panel, liver associated enzymes, and serum complement levels were within normal limits. The white blood cell count was noteworthy for a leukocytosis, with a count of 22.3, with a left shift but normal eosinophil count. Her erythrocyte sedimentation rate was elevated at 80 but all rheumatologic serologies, including anti-nuclear antibodies (ANA), anticytoplasmic antibodies (ANCA), and rheumatoid factor (RF) were negative, as was human immunodeficiency virus (HIV) testing. Her beta HCG was within normal limits for her stage of pregnancy, and her blood and urine cultures, and infectious antibody serologies were negative. A trans-thoracic echocardiogram revealed no vegetations or valvular abnormalities. Her hypersensitivity panel was negative. A computerized tomography-guided transthoracic needle biopsy was performed but was nondiagnostic.

A broad differential diagnosis was entertained. This included infectious etiologies, including fungal and bacterial pneumonia and septic emboli, as well as neoplastic causes, such as choriocarcinoma and metastatic colon cancer. Attention was most directed towards inflammatory etiologies, including vasculitis, cryptogenic organizing pneumonia, eosinophilic pneumonia and hypersensitivity pneumonitis, and pulmonary manifestations of her UC.

Because of the concern for ANCA-negative Wegener’s Granulomatosis,1 with previous case reports of pulmonary vasculitis complicating inflammatory bowel disease (IBD),2,3 the patient proceeded to video assisted thorascopic surgery and wedge biopsies were obtained (Fig. 3). These showed a neutrophilic predominant aggregation with areas of necrosis, without granuloma, and with negative bacterial, acid fast and fungal stains. She was begun on prednisone, a corticosteroid chosen because only a small amount of its dose is presented to the fetus,4 at 80 mg daily with rapid clinical and radiographic resolution.

Discussion

IBD, comprising of Crohn’s Disease (CD) and Ulcerative Colitis (UC), is often considered as a disease limited to the gastroenteric tract. However, its pathophysiology results in systemic inflammation and a wide variety of extra intestinal manifestations.5 The immune activation associated with IBD induces the production of nonspecific inflammatory mediators, including cytokines, chemokines, prostaglandins, and leukotrienes.7 A variety of extra intestinal pathophysiology results, including acute synovitis, sacroiliitis, uveitis and erythema nodosum.5 The lung can also be involved with airway disease, including granuloma and bronchiectasis, interstitial disease, or pleural disease, with serositis. Necrobiotic pulmonary nodules are

Figure 1 Chest radiograph.

Figure 2 CT scan of the chest.

Figure 3 Surgical pathology: Hematoxylin and eosin stain, 200 × magnification.
an unusual but well described manifestation of IBD. Though no randomized clinical trials have been conducted to guide the choice of treatment of pulmonary manifestations of IBD, a variety of therapies have been used and presented in the literature, including inhaled and systemic corticosteroids, cyclophosphamide, infliximab, and mycophenolate mofetil.

In pregnancy, if IBD is active at the time of conception, two thirds will have relapse or worsening of their disease, while most with quiescent disease will remain without active disease during pregnancy. This is the first case presented in the literature of the occurrence of pulmonary manifestation of IBD in a pregnant patient. Physicians should consider IBD as a systemic disease and consider extra-pulmonary disease in their patients with UC and CD. Additionally, this case illustrates the importance of obtaining tissue for diagnosis and considerations in choosing a therapeutic agent appropriate for the pregnant patient.

Conflict of interest Statement

The authors have no conflict of interest to declare in relation to this work. Dr. Netzer is supported by a Clinical Research Development Award from the NIH (5K12RR023250-03).

References