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Case Study

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CROHN'S DISEASE REVEALING DIFFUSE BRONCHIAL DILATIONS, A RARE EXTRADIGESTIVE MANIFESTATION: A CASE REPORT

Msika S., Belhaj C.*, Arfaoui H., Hallouli S., El Hanafy S., Bamha H., Bougteb N., Jabri H., El khattabi W. and Afif Mly H.

Department of Respiratory Diseases, Casablanca Hospital, August 20, 1953.

***Corresponding Author: Msika S.**

Department of Respiratory Diseases, Casablanca Hospital, August 20, 1953.

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ABSTRACT

Inflammatory bowel diseases (IBD) are chronic and recurrent inflammatory disorders of the gastrointestinal tract, frequently associated with extraintestinal manifestations that can seriously affect the quality of life of patients with IBD. Respiratory involvement in IBD was first described by Lopez Botet and Rosalem Archer in 1962, and remains relatively rare. We reported the case of a 17-year-old female patient, followed for Crohn's disease for two years, receiving azathioprine and mercaptopurine, known to have suffered from chronic bronchorrhea for five years, and presenting with recurrent respiratory infections. The history of her illness began one week ago with the onset of moderately heavy hemoptysis accompanied by purulent bronchial syndrome, developing in a context of apyrexia and a decline in her general condition. Chest CT scan revealed bilateral and diffuse bronchial dilatation with mucoid impactions and diffuse bronchial thickening. Bronchial aspirates revealed the presence of Mycobacterium tuberculosis. The patient was started on antibacterial treatment according to the Moroccan national program, with good clinical progress and radiological clearance.

KEYWORDS: Crohn's disease, diffuse bronchiectasis, pulmonary tuberculosis.

INTRODUCTION

Inflammatory bowel diseases (IBD) are chronic inflammatory diseases that typically involve the gastrointestinal tract. Respiratory involvement is rarely described. The true prevalence of respiratory pathologies in patients with IBD remains relatively unknown[1,2], with BDD being the most prevalent. We report the case of a patient with diffuse BDD in the setting of Crohn's disease diagnosed with pulmonary tuberculosis, emphasizing the importance of monitoring and early diagnosis of respiratory involvement to prevent complications.

Medical Observation

A 17-year-old patient, with no toxic habits, known to have chronic bronchorrheic disease for 5 years, presenting with recurrent respiratory infections since infancy. She has been monitored for Crohn's disease for 2 years with vulvar and anal localization and placed on azathioprine and mercaptopurine. She has also been monitored for iron deficiency anemia for a year while receiving iron supplementation. She has never undergone surgery and has not reported any recent tuberculosis infection known to those around her.

The history of her illness dates back a week, with the onset of moderately heavy hemoptysis (three episodes), accompanied by purulent bronchial syndrome, all evolving in a context of apyrexia and deterioration of the general condition, combining asthenia, anorexia, and unquantified weight loss. The clinical examination found a patient in good general condition (PS 1), presenting with cutaneous and mucosal pallor, correctly saturated in room air at 97%, eupneic, tachycardic at 122 beats per minute, hypotensive at 80/70 mmHg. She was in a state of thinness with a body mass index of 14 kg/m², the urine dipstick was negative.

The pleuropulmonary examination was essentially normal. The urogenital examination found erythematous plaques of the labia majora and minora, bilateral vulvar hypertrophy with external hemorrhoids. The rest of the somatic examination was unremarkable. The frontal chest radiograph demonstrated a left basal opacity resting on the non-homogeneous, sparse diaphragmatic dome with a lucency within it and finely circled lucency in the left paracardiac region and in the upper third of the right hemithorax (Figure 1). The chest CT scan showed bilateral and diffuse bronchial dilatations, more pronounced in the left lower lobe, the site of mucoid impactions, and diffuse bronchial wall thickening. A ground glass patch was also noted at the left Fowler's site, likely related to post-hemoptomatic granites (Figures 2, 3).

As an initial course of action, the patient was placed on injectable oral hemostatic therapy (tranexamic acid) with cooling measures, saline replacement, and probabilistic antibiotic therapy with amoxicillin and clavulanic acid. The complete blood count showed hypochromic microcytic iron-deficiency anemia at 7.5 g/dL without leukocytosis or lymphopenia. Cytobacteriological examination and Genexpert sputum analysis were negative.

An etiological assessment consisting of a saccharin test, HIV serology, plasma protein electrophoresis, immunological panel (ANA, RF, anti-CCP antibodies), and Aspergillus serology were negative. Amyloidosis testing (24-hour proteinuria + lip biopsy) was also unremarkable.

After clinical stabilization, the patient underwent a bronchoscopy, which revealed diffuse second-degree inflammation throughout the bronchial tree, more pronounced on the left, and hyperemic and bleeding mucosa at the slightest contact with mucopurulent secretions. Bronchial aspirates revealed the presence of Mycobacterium tuberculosis, with no resistance to rifampicin. The diagnosis of pulmonary tuberculosis on diffuse bilateral bronchial dilatation secondary to Crohn's disease was retained. The patient was put on antibacterial treatment according to the Moroccan national program based on a fixed combination of Rifampicin, Isoniazid, Pyrazinamide and Ethambutol for 2 months then a combination of Rifampicin/Isoniazid for 4 months with a high-protein and high-calorie diet. The clinical evolution at two months was marked by the drying up of hemoptysis and a weight gain of 4 kg. The control chest X-ray showed the clearing of the left basal opacity (fig. 4).

DISCUSSION

Inflammatory bowel diseases (IBD), including ulcerative colitis (UC) and Crohn's disease (CD), are chronic inflammatory disorders of the gastrointestinal tract characterized by a natural history of relapsing-remitting disease flares.[3,4,5] Respiratory involvement in IBD was first described by Lopez Botet and Rosalem Archer in 1962.[6]

Respiratory tract involvement is underestimated, usually manifesting months to years after the initial diagnosis of IBD.[7]

The pathogenesis of pulmonary manifestations in IBD has not yet been elucidated, but several considerations have been proposed: a common embryological origin of the respiratory and intestinal mucosa and/or may be due to inflammatory mediators released by the intestinal mucosa or secondary to drug treatment.[8] All components of the respiratory system can be affected (airways, parenchyma, interstitium, vessels, pleura), resulting in a polymorphic variety of pulmonary manifestations in patients with IBD. Airway inflammation is the most common respiratory complaint in patients with IBD (40–63% of all clinically significant respiratory complaints) from the glottis to the alveolar ducts[6], with clinical manifestations depending on the site involved.

In our case, the patient presented with chronic bronchitis 5 years before the diagnosis of Crohn's disease.

Chest radiography is uninformative, mainly showing subtle signs such as tracheal narrowing, while high-resolution computed tomography (HRCT) is the examination of choice, capable of better defining tracheobronchial wall thickening, bronchial diameter, and additional signs.[9] However, due to radiation exposure and the young age of most IBD patients, its use remains limited.

The lower respiratory tract is the most commonly involved anatomical site in IBD, accounting for 50% of all respiratory tract manifestations[9], with bronchiectasis being the most frequently reported, followed by chronic bronchitis and mucus impaction.[7] In our case, chest CT showed bilateral and diffuse bronchial dilatations with mucoid impactions and diffuse bronchial thickening.

Lung parenchymal involvement in IBD should always raise suspicion of infections or adverse drug reactions, as specific interstitial lung diseases related to IBD are rare.[11, 12] Several types of interstitial pneumonia have been described, including organizing pneumonia, nonspecific interstitial pneumonia, granulomatous interstitial lung disease, and eosinophilic interstitial pneumonia.[7]

Pleural involvement is rare and manifests as unilateral exudative pleurisy, usually accompanied by parenchymal involvement.[13]

Acute pulmonary embolism remains the most serious pulmonary vascular manifestation in patients with IBD, as the risk of venous thromboembolism is two to three times higher than in the general population.[6; 13]

Enteropulmonary fistulas are rare conditions described in Crohn's disease. They may be related to colobronchial, esophagobronchial, or ileobronchial fistulas. Treatment is surgical.[14] Drug-related pulmonary toxicity mainly manifests as interstitial lung disease. Mainly mesalazine can induce different types of interstitial lung disease in the form of eosinophilic pneumonia, organizing pneumonia and non-specific interstitial pneumonia, the treatment of which is based on stopping the offending treatment and thus corticosteroid therapy.[6;15;16]

FIGURES

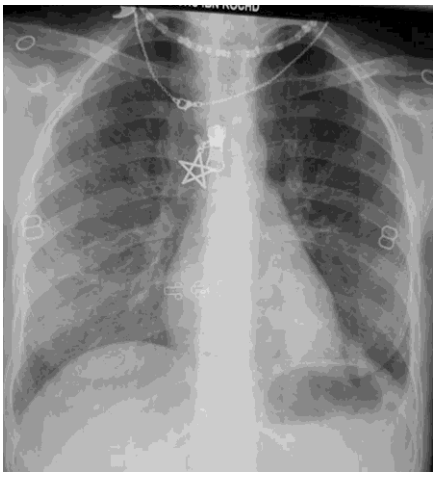

Figure 1: Frontal chest X-ray showing a left basal opacity resting on the diaphragmatic dome with the presence of finely circled lucencies in the left paracardiac and at the level of the upper third of the right hemithorax.

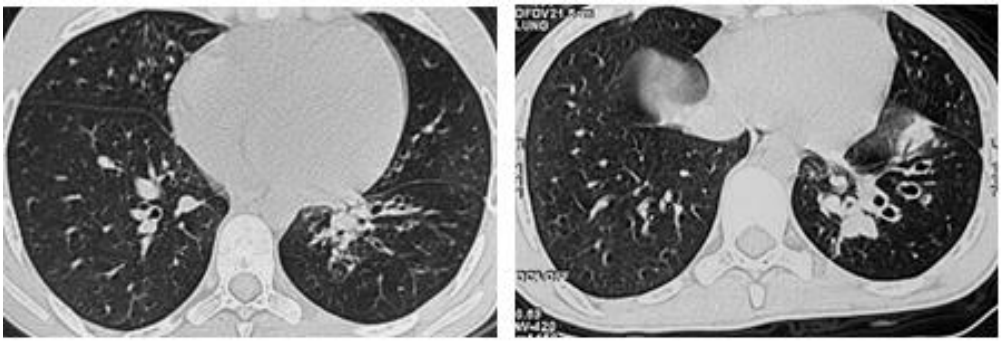

Figure 2: Chest CT scan showing diffuse bronchial dilations located in mucoid impactions with diffuse bronchial thickening.

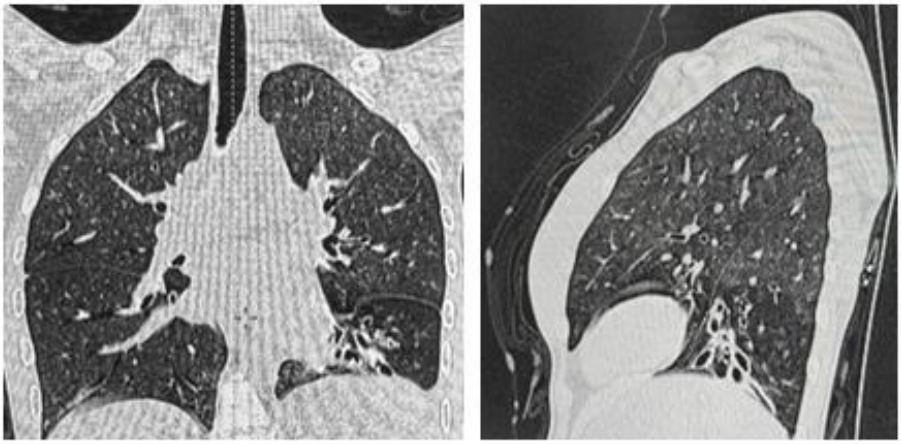

Figure 3: Reconstruction sections showing diffuse DDB with significant lesions at the left lower lobe level.

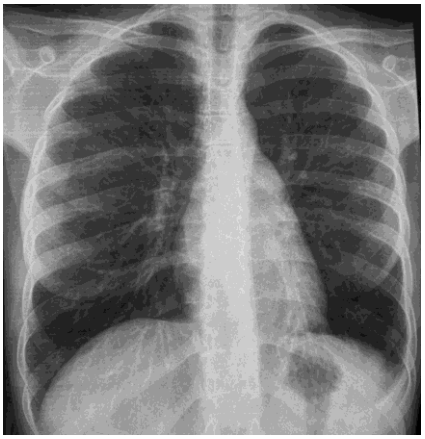

Figure 4: Frontal chest X-ray showing clearing of the left basal opacity.

CONCLUSION

Respiratory involvement is generally perceived as a rare extraintestinal manifestation of inflammatory bowel disease (IBD) and is likely underestimated in routine clinical practice. Early identification of latent pulmonary involvement is important to prevent respiratory failure. Currently, there is insufficient evidence to support routine screening for pulmonary manifestations of IBD.

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