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Case Report

Management of pulmonary tuberculosis and hypersensitivity reaction to antituberculosis drugs in a patient presenting with recurrent psoas abscess

Ahmet Yurttaş, Elif Büşra Öbek, Deniz Çelik, Özkan Yetkin, Hüseyin Lakadamyalı

Department of Pulmonology, Faculty of Medicine, Alanya Alaaddin Keykubat University, Antalya, Turkiye

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Corresponding Author: Deniz Çelik, drdenizcelik@hotmail.com

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ABSTRACT

Psoas abscess is a difficult disease to diagnose. *Mycobacterium tuberculosis* (MTB) can cause psoas abscess. First generation anti-tuberculosis (anti-TB) drugs are used in the treatment of TB, side effects may occur during treatment; one of these side effects is hypersensitivity reactions. In this case report, we aimed to present a patient who presented with recurrent psoas abscess occurs after pulmonary tuberculosis and developed hypersensitivity reaction to antituberculosis drugs and the treatment method we applied. A 44-year-old male patient presented with fever, cough and right flank pain. He had hypothyroidism and received antibiotherapy plus drainage treatment for recurrent psoas abscesses. His family history was unremarkable and respiratory auscultation were normal. Fever was 37.8°C. WBC: 6.640/mm^3, CRP: 70 mg/L, ESR: 33 mm/h were elevated. Liver dynamic computed tomography (CT) showed psoas abscess, drainage was provided. Chest X-Ray showed infiltrations. Pulmonary tuberculosis was thought to be the etiology of recurrent psoas abscess, thorax CT, culture and acide resistant staining (ARS) were planned from sputum and abscess. No growth was observed in abscess culture and MTB was not detected. Sputum ARS was positive. With the initiation of HRZE treatment, the patient developed sudden dyspnea, high fever, and skin rashes, and the treatment was terminated. Premedication was decided to be performed before the drug and progressive drug loading was performed to determine the responsible drug. The patient, who had no new allergic reaction during the progressive drug loading period, was discharged and methylprednisolone tablets were prescribed for 21 days, bilastine (in case of need) and desloratadine tablets were prescribed for 6 months together with TB drugs. Tuberculosis is among the important causes of morbidity and mortality in developing countries. At the beginning of treatment, patients should be told about the side effects that may occur with the drugs they use. In patients who develop hypersensitivity reactions, temporary or permanent discontinuation of drugs and often hospitalization of the patient is required. Antihistamines and steroids may need to be used for the control of severe reactions. In our case, we wanted to emphasize that patients may develop tuberculosis even if they do not present with pulmonary symptoms and that drug side effects should always be kept in mind and the necessity and importance of premedication and gradual drug loading therapy in patients with hypersensitivity reactions.

Keywords: Recurrent psoas abscess, pulmonary tuberculosis, hypersensitivity reaction, antituberculosis therapy

INTRODUCTION

Tuberculosis (TB) is the 10th most common cause of death worldwide and the most common cause of death among infectious causes since 2007.[1] *Mycobacterium tuberculosis* (MTB) and *M. africanum* (seen in West and East Africa) bacilli are the most common human TB agents, causing approximately 98% of TB infections worldwide.[2] Primary tuberculosis infection is silent in 95% of cases and results as the latent period. In 5% of cases, it causes primary TB disease.[3] In this stage, mycobacteria may settle in the surrounding tissues and extrapulmonary organs via hematogenous and lymphogenous routes. Extrapulmonary TB occurs if reactivation occurs in foci outside the lung.[2] Extrapulmonary TB is seen in approximately 35% of all patients in Turkey and is more common in women in the adult group.[4] Psoas abscess is a rare disease which is usually difficult to diagnose and diagnosed late. Psoas abscess is more common in children and young people than in the elderly.[5] The classical findings of psoas abscess include abdominal or low back pain, limping and fever.[6] MTB may cause psoas abscess or pyogenic psoas abscess may develop in the course of pulmonary TB. First-generation anti-tuberculosis (anti-TB) drugs, which are short-term, standard drug regimen, are used in treatment. Some

serious side effects may be observed during treatment; one of these side effects is hypersensitivity reactions. The most common clinical manifestations of hypersensitivity are skin rash and fever. If a patient with hypersensitivity is given a higher dose of the same drug, anaphylactic shock may rarely develop. Drugs are discontinued and the responsible drug is determined by skin tests or drug trials under hospital conditions. The responsible drug is tried to be found by using individual drugs.[4] In this case report, we aimed to describe a patient who presented with recurrent psoas abscess resulting in the diagnosis of pulmonary TB and developed hypersensitivity reaction to anti-TB drugs and the treatment method we applied.

CASE

A 44-year-old male patient presented with fever, dry cough and right flank pain for 1 week. He had no known history of pulmonary disease. He was being treated for hypothyroidism as an comorbid disease. He had receiving antibiotherapy plus drainage treatment for recurrent psoas abscesses. He did not complain of weight loss, night sweats or hemoptysis. He was a non-smoker. There was no known history of allergy. His family history was unremarkable. Physical examination revealed normal respiratory auscultation and no abdominal tenderness. Temperature was 37.8°C, pulse rate was 90/min, and blood pressure was 110/70 mmHg. He was not desaturated on room air. Laboratory tests revealed WBC: 6.640/mm^3, C-reactive protein 70 mg/L, erythrocyte sedimentation rate 33 mm/h. No pathology was found in renal and liver function tests and elisa test for HIV or HCV/HBV. Dynamic computed tomography (CT) of the liver was reported as "There is a collection extending from the localization of the liver capsule and abdominal muscle plans posteriorly on the right to the psoas muscle and paraspinal region subcutaneously, measuring 12x5.5 cm in coronal sections in the thickest part, with mild peripheral contrast after IV contrast" (Figure 1). Interventional radiology opinion was obtained for psoas abscess and drainage of the abscess was provided and serous drainage was observed. Chest X-Ray showed infiltrations (Figure 2). Considering that the source of recurrent psoas abscess could be pulmonary TB, a thorax CT was ordered. Thorax CT revealed "There are mild patchy ground-glass density increases in the right lung upper lobe and middle lobe. There is reticulonodular infiltration at the right lung lower lobe hilar level and laterally." (Figure 3) In the differential diagnosis, psoas abscess due to tuberculosis was considered and culture and ARS were sent from the patient's sputum and abscess sample. It was decided to start HRZE regimen (isoniazid, rifampicin, pyrazinamide, ethambutol) for the patient with positive sputum ARS results. The treatment was terminated after the first dose upon the development of sudden dyspnea, high fever, skin rashes and hypotension with the initiation of treatment. It was decided to premedicate the patient who was treated for anaphylaxis before tuberculosis drugs and gradual drug loading was performed to determine the responsible drug. Day 1 isoniazid 50mg, day 2 isoniazid

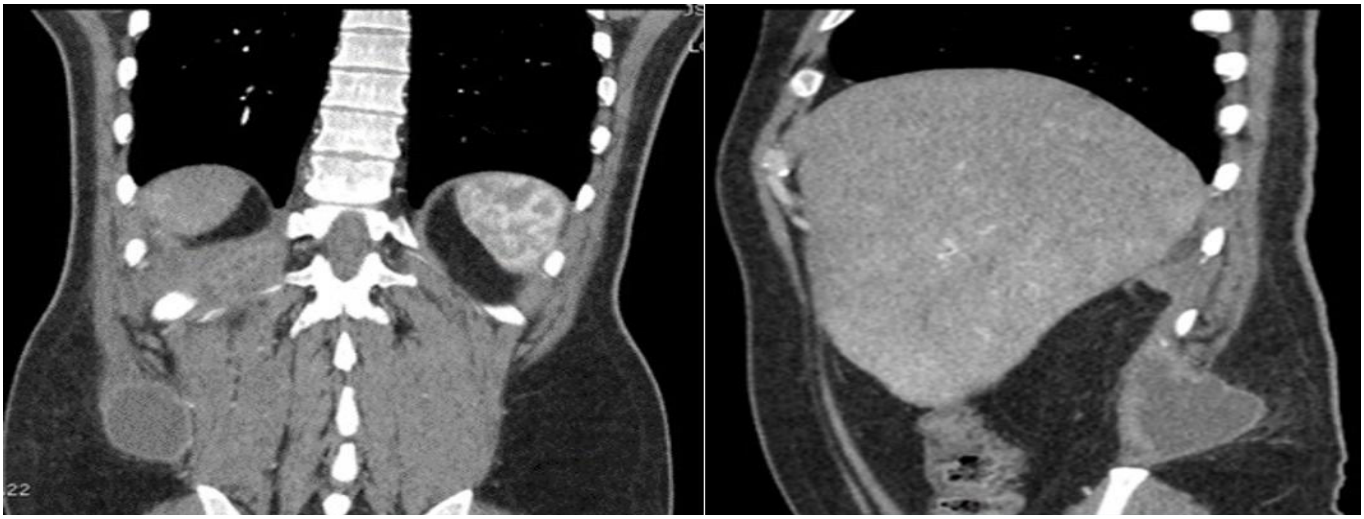

Figure 1. The dinamic liver computed tomography revealed that there was a psoas abcess

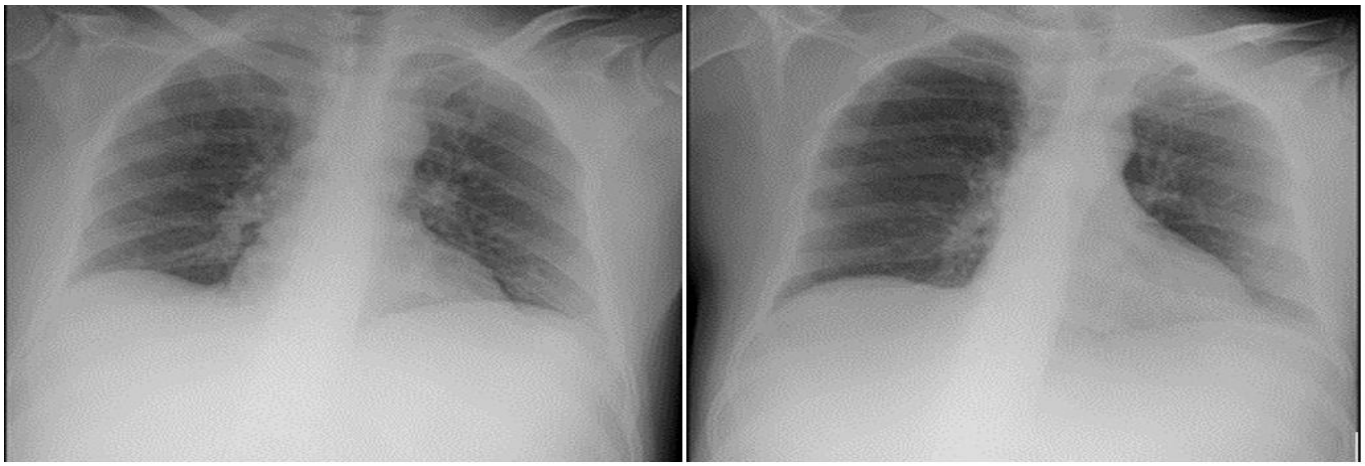

Figure 2. Chest X-Ray showed an infiltration (pre and post hospitalization X-Rays)

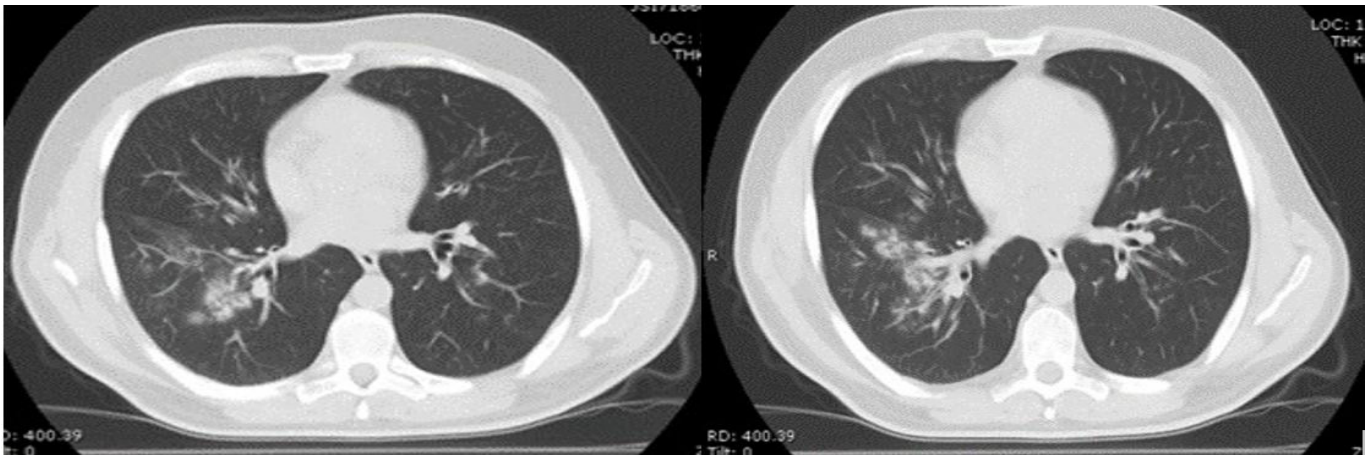

Figure 3. Chest computed tomography showed mild patchy ground-glass density increases in the right lung upper lobe and middle lobe. And reticulonodular infiltration at the right lung lower lobe hilar level and laterally

300 mg, day 3 isoniazid 300 mg + rifampicin 150 mg, day 4 isoniazid 300 mg + rifampicin 300 mg, day 5 isoniazid 300 mg + rifampicin 600 mg, day 6 isoniazid 300 mg + rifampicin 600 mg + pyrazinamide 250 mg, day 7 isoniazid 300 mg + rifampicin 600 mg + pyrazinamide 500 mg, day 8 day isoniazid 300 mg + rifampicin 600 mg + pyrazinamide 2000 mg, day 9 isoniazid 300 mg + rifampicin 600 mg + pyrazinamide 2000 mg + ethambutol 250 mg, day 10 isoniazid 300 mg + rifampicin 600 mg + pyrazinamide 2000 mg + ethambutol 500 mg, day 11 isoniazid 300 mg + rifampicin 600 mg + pyrazinamide 2000 mg + ethambutol 1500 mg and day 12 full dose HRZE treatment. After the treatment, a control chest X-ray was taken (Figure 2). The patient who had no new allergic reaction during the treatment period was discharged and methylprednisolone tablets for 21 days, bilastine and desloratadine tablets for 6 months were prescribed together with tuberculosis drugs. The patient, who had no history of new allergy on follow-up examination, is still being followed up by us.

DISCUSSION

Tuberculosis TB is an important cause of morbidity and mortality in developing countries. It is transmitted from a TB patient to a healthy person through the airway. The infectiousness of patients practically ends in 2-3 weeks with effective treatment. The disease is suspected with the patient's anamnesis, physical findings and chest X-Ray. The definitive diagnosis of pulmonary tuberculosis is bacteriologic. In our country, every tuberculosis patient should be treated with DGT (directly supervised treatment). Treatment regimens have two phases: the initial phase and the maintenance phase. The initial period is the period in which rapidly multiplying bacilli are cleared. Four drugs (HRZE) are used in this period. It usually lasts 2 months in new cases. In the maintenance period, intermittently multiplying bacilli that show activation from time to time are cleared. It usually lasts 4 months in new cases. HR is used.[7,8]

At the beginning of treatment, patients should be told about the most common side effects that may occur with the drugs they use. Patients should be seen by the physician at least once a month and their symptoms should be discussed privately, their history should be taken in terms of side effects and physical examinations should be performed. The most common side effects are gastrointestinal and cutaneous side effects in the form of nausea and vomiting. Side effects are usually observed in the first three months of treatment[9] In patients who develop hypersensitivity reactions, temporary or permanent discontinuation of drugs and hospitalization of the patient is frequently required. The most common clinical findings of hypersensitivity are skin rash and fever. What to do in case of a hypersensitivity reaction: Stop all medication given to the patient. The patient is referred to hospital. In the hospital, the responsible drug/drugs are identified by skin tests or drug trials. The responsible drug is tried to be found by using individual drugs. Once the responsible drug is identified, the patient is started on a new non-allergic treatment. Antihistamines and steroids may be required for the control of severe reactions.[10] In our case, the patient had complaints of right flank pain, fever and cough. The patient had a history of recurrent psoas abscess and when recurrent psoas abscess was detected on computed tomography, TB was considered as one of the etiologies and both abscess and sputum ARS and culture were sent. The patient's abscess material ARB was negative, sputum ARS was positive and HRZE regimen was started, but our patient developed hypersensitivity reaction to the drugs. Treatment success was achieved with gradual drug loading and premedication.

CONCLUSION

In this case, we wanted to emphasize that it should be kept in mind that tuberculosis may develop in patients with extrapulmonary complaints even if they do not present with pulmonary symptoms, side effects should always be kept in mind in patients with pulmonary tuberculosis, and the necessity and importance of premedication and progressive drug loading treatment in patients with hypersensitivity reaction.

ETHICAL DECLARATIONS

Informed Consent

The patient signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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