Anti-tuberculosis Induced Stevens-Johnson Syndrome Due to Misdiagnosis of Mycobacterium Abscessus Urinary Tract Infection as Tuberculosis

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Mycobacterium abscessus complex is one of the most important groups of non-tuberculosis mycobacteria, which can cause infection in several organs of the human body. In this study, we report a rare cause of urinary tract infection which was presented with the chief complaint of hematuria and dysuria. The patient was treated by a clarithromycin based approach and the result of the culture and polymerase chain reaction were negative after 3 months of treatment. Informed consent was taken from the patient for publishing the case.

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Case Report

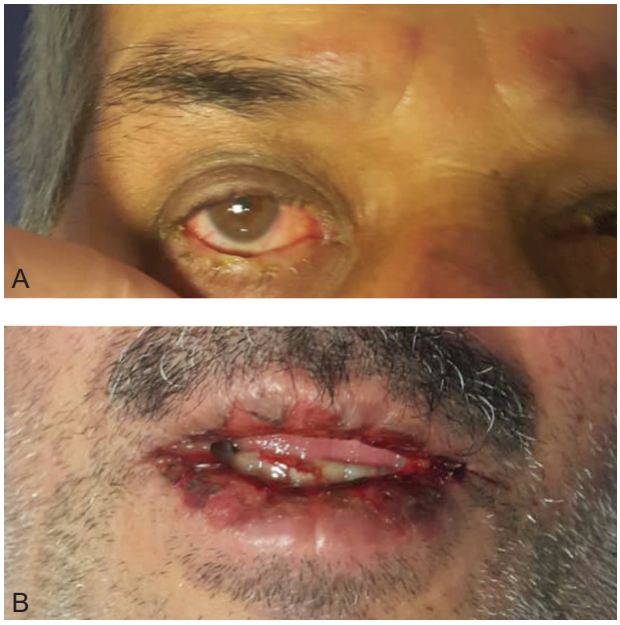
INTRODUCTION

Non-tuberculosis mycobacteria (NTM) are microorganisms commonly found in the soil, tap water, domestic, wild animal, and food products.[1] There are more than 140 species of NTM which can be pathogen and cause different infections in humans.[2] The *mycobacterium abscessus* complex (MABc) is one of the most important groups of NTM which is increasing globally.[3] MABc is one of the rapidly growing mycobacteria causing a variety of opportunistic infections in soft tissue, bone, skin and also disseminated infection.[4]

Urinary tract infection is one of the major causes of extra-pulmonary infection of tuberculosis.[5] However, urinary tract infection caused by NTM is an extremely rare presentation.[6] In this study, we report a complicated case of urinary tract infection, which is caused by *mycobacterium abscessus*.

CASE PRESENTATION

A 62-year-old male was presented to the infectious disease clinic with a chief complaint of dysuria and hematuria since a year ago. His history of underlying disease such as diabetes was unremarkable. The ultrasonography of kidney, ureter, and bladder (KUB) and urine analysis (UA) were normal and therefore, the patient was referred to an infectious disease clinic for further assessment. The patient was treated as a case of recurrent urinary tract infection (UTI) for 7 months. Terminal hematuria was added to the patient's complaints and dysuria became more severe than before. Some evidences of bladder infection and left ureter obstruction were observed in further ultrasonography. A urinary smear for acid fast bacillus (AFB) was requested after stent insertion. The urinary smear was +3 positive for AFB. Treatment of urinary tuberculosis was started with fixed-dose drug combinations (pyrazinamide, isoniazid, rifampin, ethambutol, and pyridoxine). One week later, severe allergic reaction in the form of generalized pruritus, maculopapular, blisters and pustular skin rash, eye involvement and mucosal ulcers were observed. Hence, anti-tuberculosis drugs were discontinued and the patient was referred to our clinic with the primary diagnosis of Stevens-Johnson syndrome due to anti-tuberculosis drugs (Figure). For further investigation, urine PCR for mycobacterium tuberculosis and non-tuberculosis was requested. The result of PCR indicated the presence of mycobacterium abscessus in the urinary tract. Laboratory tests were as follows:



A) Conjunctivitis Which Seen After Stevens-Johnson Reaction, B) Mucosal Ulcers of the Oral Cavity Which Caused by Stevens-Johnson Syndrome

complete blood count (CBC) and biochemical tests were normal. Human immunodeficiency virus antibody (HIV Ab) was negative. Chest X-ray was also unremarkable. The patient was admitted and treatment was started with the combination of amikacin (500 mg two times, daily) and imipenem (1 gram two times, daily) for 2 weeks. The patient's dysuria and hematuria were subsided just 8 days after starting the treatment. Then, the treatment was continued by clarithromycin for 6 months (500 mg two times, daily). The patient was followed up monthly by urine culture and after 3 months, the culture was negative for mycobacterium abscessus. Clarithromycin was continued 3 months after the negative result of culture and polymerase chain reaction (PCR).

DISCUSSION

In the current study, a patient who had urinary tract infection with mycobacterium abscessus was reported. To the best of our knowledge, mycobacterium abscessus UTI is extremely rare and there are only three cases in recent studies (two cases in one study).[6,7]

MABc that causes opportunistic infections in human is highly resistant to treatment.[8] These microorganisms are a group of rapidly growth NTM which, first were described in 1953.[9] Immunocompromised and immunodeficient patients are more susceptible to these infections,[10] however; the current case had no history of immunodeficiency or taking immunosuppressant drugs.

With regards to antibiotic resistance, treatment of the UTI caused by *mycobacterium abscessus* is a challenging issue. According to the Infectious Disease Society of America's recommendation, intravenous amikacin administration in combination with cefoxitin or imipenem is the best choice of treatment.[11] Furthermore, clarithromycin is also one of the therapeutic choices that has been used for the treatment of MABc since 1990s.[12] For extra-pulmonary cases of MABc, 4 to 6 months treatment is recommended with the initial administration of amikacin and cefoxitin or imipenem for the first two weeks.[13] However, due to the rarity of the current case, the treatment strategy was so important. For this case, we used intravenous amikacin and imipenem for the first two weeks; after that, we continued the treatment with oral clarithromycin for 4 to 6 months.

After 3 months, the result of urine culture was negative for MABc and the patient was discharged from the hospital. The patient was followed up for one year by a monthly visit in combination with a urine culture. In addition, Stevens-Johnson syndrome (SJS) after anti-tuberculosis drugs is a rare phenomenon and is often reported in immune-deficient patients.[14,15] The case of this study was negative for HIV; moreover, we do not know exactly which anti-TB drug caused SJS in this case.

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