

Radyolojik Bulgularla Tanı Konulan Bilateral Miçetoma: Olgu Sunumu

Radiologically Diagnosed Bilateral Mycetoma: Case Report

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ÖZET

Miçetoma veya 'Madura Ayağı', gerçek mantarlar (ömiçetoma) veya Aktinomiçes (aktinomiçetoma) türü bakteriler tarafından oluşan kronik granülatöz, genellikle unilateral görülen, yumuşak doku enfeksiyonudur. Bu zor gelişen mikroorganizmaları, biyopsi veya mikrobiyolojik kültürde göstermek zor olabilir, bu yüzden tanı ve tedavi gecikmeleri nedeniyle artmış morbidite gelişebilir. Tedaviye oldukça dirençlidir. sağ ayakta başlayıp yıllar içerisinde ilerleyerek diğer ekstremiteye de yayılan, bilateral ayak miçetoması olan 27 yaşında bir bayan hastanın klinik, mikrobiyolojik, histopatolojik, radyolojik bulgularını sunduk. Bu olguda tanı radyolojik görüntüleme metodlarıyla kesinleştirildi. Miçetomanın kesin tanısı ve ömiçetomanın ayırıcı tanısının radyolojik görüntüleme yöntemleriyle konulabileceği sonucuna vardık.

Anahtar Kelimeler: miçetoma, daire içinde nokta, magnetik rezonans görüntüleme, ultrason

ABSTRACT

Mycetoma or 'Madura foot' is a chronic granulomatous soft-tissue infection, mostly unilateral and caused by true fungi (eumycetoma) or actinomycetic bacteria (actinomycetoma). It may be difficult to demonstrate these fastidious organisms either on biopsy or microbiological culture, thus increased morbidity can occur due to delays in diagnosis and therapeutic intervention. We presented the clinical, microbiological, histopathological and radiological findings of a 27 years old female patient with mycetoma which was started on left foot, increased over the years and affected the other extremity. For this case, the diagnosis was confirmed with radiological imaging methods. We concluded that exact diagnosis of mycetoma and differential diagnosis of eumycetoma can be made by radiological imaging methods.

Keywords: Mycetoma, Dot in circle, magnetic resonance imaging, ultrasound.

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INTRODUCTION

Mycetoma (Madura foot) is a chronic infection develops by traumatic inoculation of bacteria or true fungi, it affects skin and subcutaneous tissue. It is highly endemic in tropical and subtropical regions such as Sudan, Venezuela, Mexico, and India. Disease is mostly localized in the region of trauma, often in the lower extremities of farmers and workers, especially in young men (1-5).

Dermatologically, subcutaneous mass, multiple draining sinuses or hyperpigmented scars are seen. Infection may affect the underlying muscular structures, fascia and bone. Systemic symptoms and pain occur rarely when subcutaneous tissue infection develops (1-5).

It is difficult to diagnose the disease and identify the causative microorganisms. 1-2 Recent studies emphasize the importance of radiological investigations in diagnosis of mycetoma (6-9).

To our knowledge there is only one case, reported from our country (6). We presented the findings of a female patient with mycetoma.

CASE

A 27-year-old woman, presented with history of chronic painless swelling and hyperkeratotic, hyperpigmented lesions on her left lower extremity and right foot.

Seventeen years ago, patient walked on debris by bare feet and an injury by a nail occurred to her left foot. After a while multiple weeping wounds appeared on her foot. Patient was followed with different diagnoses such as foreign body reaction, mycetoma, lupus vulgaris and venous insufficiency in different centers. Although she received various treatments, lesions on left foot progressively increased then similar complaints appeared on right foot during last few years. Causative microorganism could not be determined exactly, so nonspecific treatments were given. According to patient's medical records, she used Itraconazole for 4 months, tetracycline for 2 months, combination of isoniazid (INH), rifampin (RIF), ethambutol (ETB), and pyrazinamide (PRZ) for 2 months, combination of INH and RIF for 5 months, before.

On dermatological examination, there were diffuse edema and few pigmented scars on lateral

side of the right foot (Figure 1) and diffuse edema, sclerosis, multiple pigmented hyperkeratotic scars on left lower extremity (Figure 2).



Figure 1: Diffuse edema and pigmented scars on lateral side of the right foot

Figure 2: Diffuse edema, sclerosis and pigmented hyperkeratotic scars on left lower extremity

Lymphadenopathy was not detected, other system examinations and routine blood tests were all found normal.

Superficial venous insufficiency was detected by Doppler ultrasonography of left leg (Toshiba Aplio-500). Superficial ultrasound examination of both feet was done by 18 MHz linear probes, and hypoechoic lesion with hyperechoic foci were observed in the subcutaneous tissue (Figure 3).



Figure 3: Hypoechoic lesion with hyperechoic foci in subcutaneous tissue by superficial ultrasound examination

Contrast Magnetic Resonance Imaging (MRI) was performed and pathological signs were not observed in bone structures in T1-weighted images. In the subcutaneous tissue, hypointense nodules surrounded by the hyperintense ring was observed. Hyperintense focus representing "dot-in-circle" was observed in these nodules (Figure 4).

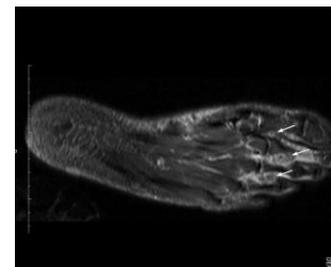


Figure 4: "Dot in circle" sign in subcutaneous tissue in MRI, spherical hyperintense lesions with central tiny hypointense focus

Patient had no draining sinuses, so tissue samples were taken by punch biyopsi for microbiological examinations. Microorganism could not be detected by gram staining, EZN staining, examination with 20% KOH. Samples were analysed on 4 different culture medias. Incubations were done on EMB, blood agar and chocolate agar at 37 °C in aerobic and anaerobic conditions for four weeks. Incubation in Sabouraud dextrose agar (SDA) was done at room temperature and at 37 °C for three weeks. There was no growth in any of the culture plates.

On histopathological examinations, granulomatous inflammation was detected. Bacterial agent was not identified by gram staining, fungal organism was not detected in Grocott-Gomori Metanamin Silver (GMS) staining. In PAS staining, small oval PAS positive granules were observed in cytoplasm of epithelioid histiocytes.

In addition, PPD test and sputum tests for tuberculosis were all negative. Findings that observed in sarcoidosis and tuberculosis were not observed in chest X-ray and thorax tomography.

DISCUSSION

Mycetoma develops with traumatic inoculation of true fungi (eumycetoma) or actinomycetic bacteria (actinomycetoma) through the skin. Feet are most commonly affected, but hands, arms, legs, back and other organ involvements were also reported (1-6).

For exact diagnosis, fluid samples from draining sinuses or biopsies from skin must be evaluated in microbiology laboratory. But usually, growth of causative microorganisms in culture medias is difficult even in 3-4 weeks incubation period (1,2).

It is known that, granulomatous inflammation is seen in histopathological examination of mycetoma. Sometimes bacterial or fungal agents can be identified by gram staining, GMS staining and PAS staining of sections (8).

In MRI "dot-in-circle" sign have also been reported as characteristic for mycetoma (6-9). This sign is formed by small central hypointense focus, surrounded by hyperintense area representing inflammatory granuloma and the outermost hypointense ring representing fibrous matrix (6-9).

With ultrasonographic examination similar round-shaped lesions including hyperechoic foci surrounded by hypoechoic area could be seen in the subcutaneous tissue (6,9). In eumycetoma cases, this typical lesions reported as larger, brighter, fewer and more sharp-edged (9). This difference could be used in the differential diagnosis of eumycetoma and actinomycetoma (9). Spread beyond the capsule, to distant sites and internal organs, destruction of bone, has been reported in actinomycetoma but this is known to be very rare in eumycetoma (1).

For current case, in concordance with literature, disease was developed on patient's foot and on the site of trauma. We could not identify the causative organism in microbiological examinations. Granulomatous inflammation was detected by histopathological examination but bacterial or fungal agents could not be identified. However, PAS positive granules were observed in histiocytes, so we thought this might be a case of eumycetoma.

Dot-in-circle sign in MRI was seen and they were few in number and well-defined. Typical ultrasonographic images have also been observed and they were bigger and brighter. However, despite the 17 years long history there was no bone and internal organ involvement or regional lymphadenopathy. So we thought that the diagnosis is eumycetoma.

For treatment, antibiotics for actinomycetoma, antifungals for eumycetoma must be used for extended periods. For localised, small lesions, surgical excision could be done (10).

Our patient was diagnosed as mycetoma by history, dermatological, histopathological and radiological findings, and the diagnosis of eumycetoma was thought according to radiological findings and clinical course. Oral itraconazole (400mg / day) therapy was given. She was consulted to plastic surgery for total excision of lesion on right foot.

We concluded that clinical progress and radiological imaging methods can be very important and instructive in differential diagnosis of eumycetoma.

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