Case Report

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Gastrointestinal Basidiobol Omycosis: A Case Report

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ABSTRACT

Basidiobolomycosis is a rare invasive fungal infection, usually causing subcutaneous infection. Medical literature has rarely reported gastrointestinal and disseminated infections. We report a case of hepatic basidiobolomycosis in an immunocompetent 12-year-old girl from Iran who presented with fever, abdominal pain, and loss of appetite. She had a history of abdominal trauma two months prior. We found a mass in the left lobe of the liver; thus, an ultrasound-guided biopsy was performed. Basidiobolomycosis was diagnosed through pathological findings. Accordingly, a prolonged course of antifungal agents was prescribed, and the patient's symptoms improved.

Gastrointestinal basidiobolomycosis is a rare fungal infection that rarely only affects the liver. Clinical manifestations may mimic malignant tumors, hepatic abscess, hepatic cyst, inflammatory bowel disease, or even the phlegmon of appendicitis. In tropical regions, fungal infections like basidiobolomycosis should be considered through differential diagnosis. Usually, long-term antifungal therapy and surgical resection are required. If diagnosed late, the disease presents a high mortality rate. However, our patient was diagnosed and treated early; therefore, she could recover.

Introduction

Basidiobolomycosis is a rare invasive fungal infection by Basidiobolus ranarum. Most cases of basidiobolomycosis were reported in tropical and subtropical regions. Basidiobolus ranarum is a fungus found in soil, plants, amphibians, reptiles, and fish. Host factors, such as gastric acid suppression, gastrectomy, and diabetes mellitus, may also contribute to risk [1]. It usually causes slowly progressive subcutaneous infection. Gastrointestinal basidiobolomycosis may mimic inflammatory bowel disease, malignancies, appendicitis, and diverticulitis [2].

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Basidiobolomycosis was reported in Middle Eastern countries, such as Iran, Saudi Arabia, Kuwait, Oman, and the United States [3-13]. In most cases, the diagnosis was confirmed after surgical resection.

Case Presentation

A 12-year-old girl from a small village in the south of Iran with a tropical climate (Hormozgan Province) was admitted to the emergency ward. She presented intermittent abdominal pain, fever, and loss of appetite in the preceding 3 weeks. She had no changes of bowel habits. She presented no medical history. Her physical examination indicated stable hemodynamics as well as epigasteric and right lower quadrant tenderness without rebound tenderness and guarding (no signs of peritonitis). Laboratory findings demonstrated leukocytosis with eosinophilia, a white blood cell count of 14000/mm^3, neutrophil of 53%, eosinophil of 23%, and an erythrocyte sedimentation rate of 99. Abdominopelvic sonography reported the evidence of multilobulated echogenic mass without significant vascularity in the left liver lobe measuring 60×53mm. A triple-phase CT scan indicated a large cystic mass (70mm) in the left liver lobe (Figure 1).

Differential diagnoses at this point included hepatic abscess, hydatid cyst, tumor, and fungal lesions. We initiated broad-spectrum antibiotics to manage the hepatic abscess. After 3 days, the signs and symptoms of the patient remained unchanged, and the fever continued. Thus, we decided to drain the abscess. During the operation, there was no evidence of pus. Thus, an ultrasound-guided biopsy was performed. Pathological findings presented large hyphae surrounded by strongly eosinophilic material, and an inflammatory cell infiltrate containing histiocytes, multinucleated giant cells, and numerous eosinophils (Figure 2). Eventually, basidiobolomycosis was diagnosed through pathological findings. Next, we prescribed a prolonged course of itraconazole, and the patient's symptoms improved.

Discussion

Basidiobolomycosis is a rare invasive fungal infection that usually causes slowly progressive subcutaneous infection. Most cases of basidiobolomycosis were re-

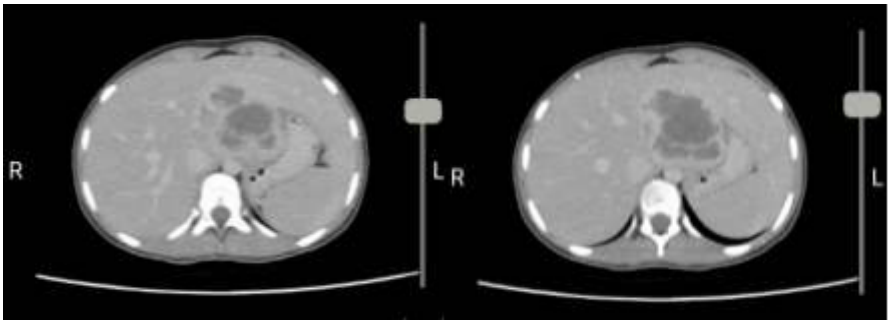

Figure 1. The Computed Tomography (CT) scan of the abdomen presented a large cystic mass (70mm) in the left liver lobe

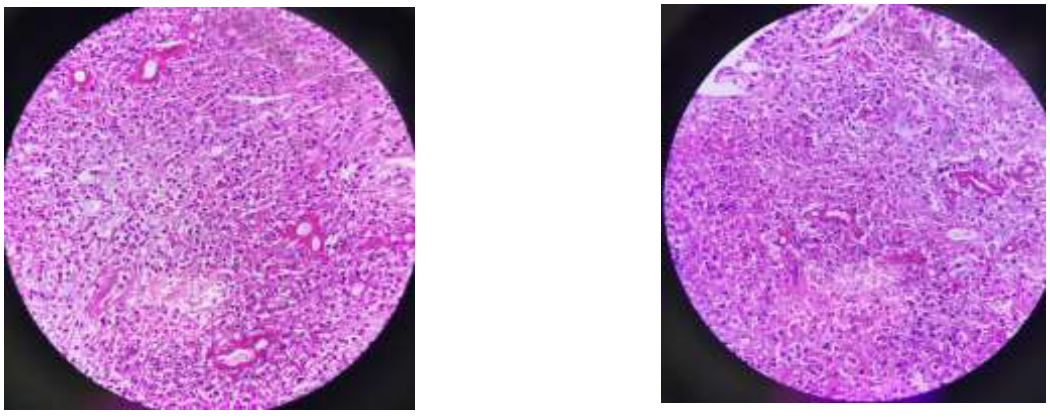

Figure 2. Large hyphae surrounded by strongly eosinophilic material and an inflammatory cell infiltrate containing histiocytes, multinucleated giant cells, and numerous eosinophils

ported in tropical areas, such as Arizona in the United States, India, Iran, and other countries around the Persian Gulf, such as Oman and Saudi Arabia [3-13].

Gastrointestinal basidiobolomycosis may mimic inflammatory bowel disease, malignancies, hydatid cyst, hepatic abscess, appendicitis, and diverticulitis [2]. In this case, hepatic basidiomycosis was reported in an immunocompetent 12-year-old female from the south of Iran with a tropical climate (Hormozgan Province).

In Iran, 14 cases of gastrointestinal basidiomycosis were reported. Patients had abdominal pain, fever, gastrointestinal mass, eosinophilia, and high erythrocyte sedimentation rate (ESR). Their diagnoses were established after surgery through histopathological findings (like in our case) [6].

The diagnosis of GI basidiobolomycosis is difficult because of its rarity, non-specific clinical manifestations, and radiological findings [1]. In all reported cases, leucocytosis with eosinophilia, ESR elevation with positive CRP (C-reactive protein)reaction were reported, and our patient had a leucocytosis with eosinophilia and high ESR and CRP (WBC [white blood cells]: 14000, PMN [Polymorphonuclear leukocytes]: 53%, Eosinophil: 20%, ESR: 99, CRP: +3).

In a study, 44 patients (ranged: 2-81 years) with gastrointestinal basidiomycosis from the United States (43%) and Saudi Arabia (25%) were investigated. Furthermore, 64% were previously healthy. The colon was involved in 82%, the small intestine in 36%, and the liver and gall bladder in 30% [1]. In our case, the patient had liver involvement only (no involvement of other organs).

Five patients with basidiomycosis from Saudi Arabia were misdiagnosed with lymphoma and carcinoma, tuberculosis, and inflammatory bowel disease [7]. Diagnosing gastrointestinal basidiomycosis is difficult. Typical imaging findings include liver or colon mass, abscess, and bowel wall thickening [14].

Conclusion

Gastrointestinal basidiboloomycosis is a fungal infection that may rarely affect the liver. Clinical manifestations may mimic malignant tumors, hepatic abscess, hepatic cyst, inflammatory bowel disease, or even the phlegmon of appendicitis. It should be considered as a differential diagnosis in tropical regions. Usually, long-term antifungal therapy and surgical resection are required. In some cases, i.e., diagnosed late, the disease may cause death. Early diagnosis and long-term follow-up are necessary to reduce morbidity and mortality.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

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Conflict of interest

The authors declared no conflict of interest.

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