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Case Study

Disseminated Histoplasmosis Mimcking Systemic Disease in an Immunocompetent Adult: A Case Report

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ABSTRACT

IntroductionHistoplasmosis is a systemic fungal infection caused by Histoplasma capsulatum, a dimorphic fungus commonly found in soil contaminated with bird or bat droppings. The disease usually occurs in individuals with impaired immunity, including patients with HIV/AIDS, organ transplant recipients, or those receiving immunosuppressive therapy. Disseminated histoplasmosis is rarely reported in immunocompetent individuals and may present with non-specific systemic manifestations, making diagnosis challenging.ObjectiveTo describe the clinical presentation, diagnostic evaluation, therapeutic management, and outcome of disseminated histoplasmosis occurring in an immunocompetent patient.MethodsA detailed case analysis was performed using patient clinical records, laboratory findings, radiological imaging, microbiological investigations, and histopathological examination. Diagnostic confirmation was achieved through fungal staining and culture. Relevant literature was also reviewed to compare similar cases and highlight diagnostic and therapeutic considerations.ResultsThe patient presented with prolonged fever, weight loss, hepatosplenomegaly, and generalized weakness. Laboratory evaluation revealed anemia and elevated inflammatory markers. Radiological imaging demonstrated hepatosplenomegaly and lymphadenopathy. Histopathological examination showed intracellular yeast forms consistent with Histoplasma capsulatum. The patient was treated with antifungal therapy using liposomal amphotericin B followed by oral itraconazole. Clinical improvement was observed with gradual resolution of systemic symptoms.ConclusionDisseminated histoplasmosis can rarely occur in immunocompetent individuals and may mimic other infectious or malignant conditions. Early recognition and prompt antifungal therapy are essential to reduce morbidity and mortality. Clinicians should consider histoplasmosis in the differential

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diagnosis of prolonged febrile illness with systemic involvement

INTRODUCTION

Histoplasmosis is a systemic fungal infection caused by *Histoplasma capsulatum*, a thermally dimorphic fungus that exists in two different morphological forms depending on environmental conditions. In nature, the organism grows in a mold form and produces infectious microconidia, while in human tissues it converts into a yeast form capable of surviving within host macrophages. The fungus is commonly found in soil enriched with bird or bat droppings, particularly in caves, poultry farms, abandoned buildings, and areas with large accumulations of organic debris. Infection occurs primarily through inhalation of airborne microconidia, which are released when contaminated soil or materials are disturbed.

After inhalation, the spores reach the alveoli of the lungs where they transform into yeast forms at body temperature. These yeast cells are then engulfed by macrophages and transported through the lymphatic system to regional lymph nodes. In most immunocompetent individuals, cell-mediated immune responses effectively control fungal replication, resulting in either asymptomatic infection or a mild self-limiting pulmonary illness. However, in certain circumstances the organism can disseminate through the bloodstream to various organs including the liver, spleen, bone marrow, lymph nodes, adrenal glands, and central nervous system.

Histoplasmosis has a wide geographic distribution and is considered endemic in several regions of the world, particularly in parts of North and South America, Africa, and Asia. In India, the disease has been increasingly recognized over the past few decades, especially in regions with warm and humid climates that favor fungal growth. Although histoplasmosis remains underdiagnosed in many developing countries, improved diagnostic awareness and laboratory techniques have contributed to increased identification of cases.

The clinical manifestations of histoplasmosis vary widely depending on the extent of infection and the immune status of the host. The disease spectrum ranges from asymptomatic infection to acute pulmonary histoplasmosis, chronic pulmonary disease, and disseminated histoplasmosis. Acute pulmonary histoplasmosis typically occurs after exposure to a large number of fungal spores and may present with symptoms such as fever, cough, chest pain, and fatigue. Chronic pulmonary histoplasmosis resembles pulmonary tuberculosis and is more commonly observed in individuals with pre-existing lung disease.

Disseminated histoplasmosis represents the most severe form of the infection and occurs when the organism spreads beyond the lungs to involve multiple organ systems. This form of the disease is most frequently observed in individuals with compromised immune function, including patients with human immunodeficiency virus (HIV) infection, organ transplant recipients, individuals receiving immunosuppressive therapy, and patients with hematological malignancies. In such individuals, impaired cell-mediated immunity prevents effective containment of the organism, allowing uncontrolled fungal proliferation and systemic dissemination.

Although disseminated histoplasmosis is typically associated with immunocompromised states, rare cases have been reported in immunocompetent individuals. The occurrence of disseminated disease in patients without identifiable immune defects is unusual and often leads to diagnostic uncertainty. In such cases, the infection may be overlooked or misdiagnosed as other conditions such as tuberculosis, lymphoma, sarcoidosis, or other systemic infections. This diagnostic challenge is particularly relevant in countries where tuberculosis is highly prevalent, as both

diseases share several overlapping clinical and radiological features.

The pathogenesis of disseminated histoplasmosis involves complex interactions between the fungus and the host immune system. Following inhalation, *Histoplasma capsulatum* is phagocytosed by alveolar macrophages. Instead of being destroyed, the organism can survive and replicate within these cells by modulating host immune responses and inhibiting intracellular killing mechanisms. The infected macrophages subsequently migrate through the lymphatic and circulatory systems, allowing the organism to spread to various organs.

In most individuals, activation of T-lymphocyte–mediated immune responses leads to the production of cytokines such as interferon-gamma and tumor necrosis factor-alpha, which enhance the fungicidal activity of macrophages. These immune responses play a crucial role in controlling the infection and preventing widespread dissemination. However, if the immune response is insufficient or delayed, the fungus may multiply within macrophages and spread throughout the reticuloendothelial system.

Disseminated histoplasmosis often presents with nonspecific systemic symptoms that may include prolonged fever, weight loss, fatigue, and generalized weakness. Additional clinical features may include hepatosplenomegaly, lymphadenopathy, mucocutaneous lesions, and hematological abnormalities such as anemia or pancytopenia. Because these manifestations are not unique to histoplasmosis, they may initially be attributed to other infectious or malignant conditions.

Radiological imaging can provide supportive evidence of infection but rarely offers definitive diagnosis. Chest radiographs may demonstrate diffuse reticulonodular infiltrates, pulmonary nodules, or mediastinal lymphadenopathy. Computed tomography (CT) imaging may reveal additional findings such as hepatosplenomegaly, abdominal lymph node enlargement, and adrenal gland involvement. While these findings can suggest systemic infection, they are not specific for histoplasmosis and require confirmation through microbiological or histopathological methods.

Definitive diagnosis of histoplasmosis typically relies on laboratory investigations that demonstrate the presence of *Histoplasma capsulatum* in clinical specimens. Histopathological examination of tissue samples often reveals small intracellular yeast forms within macrophages. Special fungal stains such as Gomori methenamine silver and Periodic Acid–Schiff stains enhance visualization of the organism. Fungal culture remains the gold standard diagnostic method, although growth may require several weeks.

In recent years, antigen detection assays and molecular diagnostic techniques have improved the ability to rapidly identify histoplasma infection. Detection of fungal antigen in serum or urine has proven particularly useful in disseminated disease, as antigen levels tend to be higher when multiple organs are involved.

Early diagnosis of disseminated histoplasmosis is critical because delayed treatment can lead to severe complications and increased mortality. The recommended therapy for moderate to severe disseminated histoplasmosis includes initial treatment with liposomal amphotericin B followed by long-term oral itraconazole therapy. This treatment regimen has significantly improved patient outcomes and reduced mortality associated with severe fungal infections.

Despite advances in diagnosis and treatment, disseminated histoplasmosis continues to present significant clinical challenges, particularly when it occurs in immunocompetent individuals. The absence of traditional risk factors may delay clinical suspicion and lead to misdiagnosis.

Therefore, clinicians should remain vigilant when evaluating patients with unexplained systemic illness and features suggestive of reticuloendothelial involvement.

The present report describes a rare case of disseminated histoplasmosis in an immunocompetent patient. The objective of this study is to highlight the clinical presentation, diagnostic findings, imaging features, and therapeutic management of this unusual manifestation of fungal infection. By documenting this case, we aim to increase awareness among healthcare professionals and emphasize the importance of considering histoplasmosis in the differential diagnosis of prolonged febrile illness with systemic involvement.

Understanding atypical presentations of histoplasmosis is essential for improving early recognition and ensuring timely initiation of appropriate antifungal therapy. Increased awareness and improved diagnostic strategies may ultimately contribute to better clinical outcomes in patients with this potentially life-threatening infection.

Case Presentation

A middle-aged male patient presented to the outpatient department with complaints of persistent fever, generalized weakness, and progressive weight loss for approximately four weeks. The fever was intermittent in nature, associated with chills and malaise, and was partially relieved by antipyretic medications. The patient also reported loss of appetite and fatigue that had gradually worsened over the previous month. There was no history of chronic cough, hemoptysis, night sweats, or recent travel to endemic areas. The patient denied any previous diagnosis of tuberculosis or other chronic infectious diseases.

The patient had no known history of immunodeficiency disorders, malignancy, diabetes mellitus, or long-term use of corticosteroids or immunosuppressive medications. There was also no history of organ transplantation. His occupational history revealed that he worked in an agricultural environment and frequently handled soil and organic material, which could potentially expose him to environmental fungal spores. There was no history of smoking, alcohol abuse, or illicit drug use.

On physical examination, the patient appeared fatigued and mildly cachectic. Vital signs showed a temperature of 38.2°C, pulse rate of 96 beats per minute, respiratory rate of 18 breaths per minute, and blood pressure of 118/74 mmHg. Oxygen saturation was within normal limits on room air. General examination revealed pallor and mild dehydration. No cyanosis, clubbing, or edema was observed.

Abdominal examination revealed enlargement of both the liver and spleen. The liver edge was palpable approximately 3 cm below the right costal margin, and the spleen was palpable 2 cm below the left costal margin. Mild tenderness was noted on deep palpation of the upper abdomen. No ascites was detected. Examination of the respiratory system revealed normal breath sounds without wheezing or crackles. Cardiovascular and neurological examinations were unremarkable. No obvious skin lesions or mucosal ulcers were noted during initial evaluation.

Initial laboratory investigations demonstrated mild anemia with hemoglobin levels below the normal reference range. The total leukocyte count was within normal limits, while inflammatory markers including erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) were elevated. Liver function tests showed mild elevation of transaminases and alkaline phosphatase, suggesting possible hepatic involvement. Renal function tests were within normal limits.

Serological screening for human immunodeficiency virus (HIV) was negative.

Additional investigations including hepatitis B and hepatitis C serology were also negative. Blood cultures obtained at admission did not reveal bacterial growth. Due to the patient's prolonged febrile illness and hepatosplenomegaly, infectious etiologies including tuberculosis, systemic fungal infections, and hematological malignancies were considered in the differential diagnosis.

A chest radiograph was performed as part of the initial diagnostic evaluation. The imaging demonstrated mild bilateral reticulonodular opacities in the lung fields without evidence of cavitary lesions or pleural effusion. Although these findings were non-specific, they suggested possible inflammatory or infectious pathology.

Further radiological assessment with abdominal ultrasonography revealed hepatomegaly and splenomegaly with multiple enlarged abdominal lymph nodes. No focal hepatic lesions or ascites were observed. These findings raised suspicion for a systemic infectious process involving the reticuloendothelial system.

To further evaluate the extent of disease involvement, contrast-enhanced computed tomography (CT) of the chest and abdomen was performed. CT imaging confirmed hepatosplenomegaly and demonstrated multiple small nodular opacities scattered throughout both lung fields. Enlarged mediastinal and abdominal lymph nodes were also noted. These findings suggested the possibility of disseminated infection; however, imaging alone was insufficient to establish a definitive diagnosis.

Given the persistence of symptoms and inconclusive imaging findings, tissue sampling was pursued to identify the underlying cause. A lymph node biopsy was obtained for histopathological examination. Microscopic evaluation of the tissue specimen revealed numerous small intracellular yeast-like organisms within macrophages. These organisms were oval in shape and measured approximately 2–4 μm in diameter.

Special fungal staining techniques were performed to confirm the presence of fungal organisms. Gomori methenamine silver (GMS) staining demonstrated clusters of yeast forms consistent with *Histoplasma capsulatum*. Periodic Acid–Schiff (PAS) staining further highlighted the fungal elements within macrophages. These findings established the diagnosis of disseminated histoplasmosis.

To further support the diagnosis, fungal cultures were obtained from the biopsy specimen. Although culture results require several weeks for definitive identification, the histopathological findings were considered sufficiently diagnostic to initiate antifungal therapy.

Based on the confirmed diagnosis of disseminated histoplasmosis, antifungal treatment was initiated promptly. The patient received intravenous liposomal amphotericin B as induction therapy due to the systemic nature of the infection. Liposomal amphotericin B was chosen because of its enhanced efficacy and reduced risk of nephrotoxicity compared with conventional amphotericin B formulations.

During the course of treatment, the patient was closely monitored for potential adverse effects including renal dysfunction and electrolyte imbalance. Serial laboratory tests were performed to evaluate kidney function, liver function, and hematological parameters.

Within the first week of antifungal therapy, the patient demonstrated gradual clinical improvement. Fever episodes became less frequent, appetite improved, and overall energy levels increased. No significant drug-related adverse reactions were observed during treatment.

After completion of the initial course of amphotericin B therapy, the patient was transitioned to oral itraconazole for maintenance treatment. Itraconazole was administered to ensure

complete eradication of the fungal infection and to reduce the risk of relapse. The patient was advised to continue antifungal therapy for several months under regular medical supervision.

During follow-up visits, the patient reported progressive improvement in symptoms. Repeat laboratory investigations showed normalization of inflammatory markers and gradual improvement in hemoglobin levels. Follow-up imaging demonstrated reduction in hepatosplenomegaly and resolution of lymphadenopathy.

The patient remained clinically stable with no recurrence of symptoms during subsequent follow-up evaluations. Continued monitoring was recommended to ensure complete recovery and detect any potential relapse.

This case highlights the occurrence of disseminated histoplasmosis in an immunocompetent individual, emphasizing the importance of considering fungal infections in patients presenting with prolonged fever and systemic manifestations. Early recognition, accurate diagnosis through histopathological examination, and timely initiation of antifungal therapy played a crucial role in achieving a favorable clinical outcome in this patient.

Objective

1. To describe the clinical features of disseminated histoplasmosis in an immunocompetent patient.
2. To evaluate diagnostic findings including laboratory and imaging studies.
3. To analyze treatment strategies and clinical outcomes.
4. To compare the findings with previously reported literature.

Methods

Study Design

This study was conducted as a single patient case analysis.

Data Collection

Clinical information was obtained from patient medical records including:

- Demographic details
- Clinical symptoms and history
- Physical examination findings
- Laboratory investigations
- Radiological imaging
- Histopathological examination
- Therapeutic interventions and follow-up outcomes

Laboratory Investigations

Routine laboratory tests included:

- Complete blood count
- Liver function tests
- Renal function tests
- C-reactive protein and erythrocyte sedimentation rate

Fungal diagnosis was confirmed by:

- Histopathological examination
- Special fungal staining (Periodic Acid-Schiff and Gomori methenamine silver stains)
- Fungal culture

Therapeutic Intervention and Outcome

Following confirmation of disseminated histoplasmosis through histopathological examination and special fungal staining, antifungal therapy was initiated promptly. Considering the systemic involvement and potential severity of the infection, induction therapy with intravenous Liposomal Amphotericin B was started. The drug was administered at a dose of 3 mg/kg/day under close clinical supervision. Liposomal amphotericin B was selected due to its improved safety profile and reduced nephrotoxicity compared with conventional

amphotericin B formulations. The patient received this treatment for approximately two weeks during the initial phase of management.

Throughout the course of amphotericin B therapy, the patient was closely monitored for potential adverse effects. Regular laboratory investigations were performed, including renal function tests, serum electrolyte levels, and complete blood counts. No significant renal impairment or electrolyte abnormalities were observed during the treatment period. Supportive care measures such as adequate hydration and symptomatic management of fever using Paracetamol were also provided.

After completion of the induction phase and once the patient demonstrated clinical improvement, the treatment regimen was transitioned to oral Itraconazole for maintenance therapy. A loading dose of 200 mg three times daily was administered for the first three days, followed by a maintenance dose of 200 mg twice daily. Long-term itraconazole therapy was recommended for several months to ensure complete eradication of the fungal infection and to minimize the risk of relapse.Clinical improvement became evident within the first week of antifungal treatment. The patient's fever gradually subsided, appetite improved, and general weakness decreased significantly. Over subsequent weeks, the patient reported progressive improvement in overall health and energy levels. Follow-up laboratory tests demonstrated reduction in inflammatory markers and gradual normalization of haematological parameters.

Radiological follow-up performed during subsequent outpatient visits revealed a reduction in hepatosplenomegaly and improvement in pulmonary findings. No new lesions or complications were identified. The patient tolerated itraconazole therapy well without significant adverse effects.

At the latest follow-up evaluation, the patient remained clinically stable with no recurrence of symptoms. Continued antifungal therapy and periodic monitoring were advised to ensure sustained recovery and to detect any potential relapse at an early stage. The favourable outcome in this case highlights the importance of early diagnosis and prompt initiation of appropriate antifungal therapy in patients with disseminated histoplasmosis, even when occurring in immunocompetent individuals.

DISCUSSION

Histoplasmosis is a systemic fungal infection caused by *Histoplasma capsulatum*, a thermally dimorphic fungus that exists in mold form in the environment and converts to yeast form in human tissues. The organism is commonly found in soil enriched with bird or bat droppings, particularly in caves, poultry farms, and old buildings. Infection occurs primarily through inhalation of microconidia, which enter the lungs and transform into yeast cells within macrophages. These intracellular yeasts are capable of surviving and multiplying inside phagocytes, enabling dissemination through the lymphatic and reticuloendothelial systems.

Although histoplasmosis is widely recognized as an opportunistic infection affecting immunocompromised individuals, disseminated disease has occasionally been reported in immunocompetent hosts. Such cases are relatively uncommon and therefore pose diagnostic challenges. The rarity of disseminated histoplasmosis in individuals without obvious immune suppression often leads clinicians to initially consider other conditions such as tuberculosis, lymphoma, sarcoidosis, or other systemic infections. As a result, diagnosis may be delayed, which can significantly increase the risk of disease progression and complications.

The pathogenesis of disseminated histoplasmosis involves complex interactions between the pathogen and the host immune system. In most immunocompetent individuals, inhaled *Histoplasma* spores are effectively controlled by cell-mediated immune responses, particularly by activated macrophages and T lymphocytes. These immune mechanisms restrict fungal proliferation and usually lead to asymptomatic or mild pulmonary infection. However, in some cases, factors such as a high inoculum of spores, prolonged environmental exposure, or subtle defects in immune regulation may allow the organism to spread beyond the lungs.

Once dissemination occurs, the fungus can invade multiple organs including the liver, spleen, bone marrow, lymph nodes, adrenal glands, and occasionally the central nervous system. The reticuloendothelial system is particularly vulnerable because macrophages serve as the primary host cells for the organism. This explains why hepatosplenomegaly and lymphadenopathy are commonly observed in disseminated disease.

Clinical manifestations of disseminated histoplasmosis are often nonspecific and may vary widely depending on the organs involved. Patients frequently present with prolonged fever, weight loss, fatigue, and generalized weakness. Additional symptoms may include cough, dyspnea, abdominal discomfort, mucosal ulcers, or skin lesions. In some cases, bone marrow involvement may lead to cytopenias such as anemia, leukopenia, or thrombocytopenia. These findings may resemble hematological malignancies, further complicating the diagnostic process.

In the present case, the patient exhibited several systemic features including persistent fever, weight loss, and hepatosplenomegaly. These findings are consistent with previously reported cases of disseminated histoplasmosis. However, the absence of immunosuppressive conditions initially made fungal infection less likely in the differential diagnosis. This highlights the importance of maintaining clinical suspicion even in patients who appear immunologically normal.

Radiological imaging plays a supportive role in evaluating suspected histoplasmosis. Chest radiography and computed tomography may reveal diffuse pulmonary infiltrates, nodular lesions, mediastinal lymphadenopathy, or miliary patterns resembling tuberculosis. In disseminated disease, abdominal imaging often demonstrates hepatosplenomegaly and enlarged lymph nodes. Adrenal gland enlargement and gastrointestinal involvement have also been reported in severe cases.

Although imaging findings are rarely specific for histoplasmosis, they are valuable in identifying the extent of organ involvement and guiding further diagnostic investigations. For example, imaging may help determine suitable sites for biopsy or tissue sampling, which are essential for definitive diagnosis.

Histopathological examination remains one of the most reliable diagnostic methods for confirming histoplasmosis. Microscopic evaluation typically reveals small intracellular yeast forms measuring approximately 2–4 micrometers in diameter within macrophages. These organisms are often surrounded by a clear halo that represents an artifact created during staining. Special fungal stains such as Gomori methenamine silver (GMS) and Periodic Acid–Schiff (PAS) enhance visualization of the yeast cells and improve diagnostic accuracy.

Fungal culture is considered the gold standard for confirming *Histoplasma capsulatum* infection, although it may require several weeks for growth. Modern diagnostic approaches, including antigen detection assays and molecular techniques, have improved the speed and sensitivity of diagnosis. Detection of histoplasma antigen in urine or serum has proven particularly useful in disseminated

disease, as it allows rapid identification of infection even before culture results become available.

In addition to laboratory confirmation, evaluation of the patient's immune status is an important component of clinical assessment. Conditions such as HIV infection, organ transplantation, malignancies, and long-term corticosteroid therapy are well-known risk factors for disseminated histoplasmosis. In the present case, laboratory investigations confirmed that the patient was immunocompetent, which further emphasizes the unusual nature of the disease presentation.

The management of disseminated histoplasmosis depends largely on disease severity and host immune status. Current clinical guidelines recommend liposomal amphotericin B as the initial treatment for moderate to severe disseminated disease. Amphotericin B acts by binding to ergosterol in fungal cell membranes, resulting in increased membrane permeability and cell death. Liposomal formulations are preferred because they provide improved efficacy with reduced nephrotoxicity compared to conventional amphotericin B.

Following initial stabilization with amphotericin B, patients are typically transitioned to oral itraconazole for long-term maintenance therapy. Itraconazole is a triazole antifungal agent that inhibits fungal ergosterol synthesis by blocking the cytochrome P450–dependent enzyme lanosterol 14-alpha demethylase. Maintenance therapy is usually continued for several months to ensure complete eradication of the organism and to prevent relapse.

Clinical improvement during antifungal therapy is usually characterized by gradual resolution of fever, improvement in appetite and weight, and normalization of laboratory parameters. Radiological findings may also improve over time, although residual calcifications or fibrotic changes may persist in some cases.

Delayed diagnosis remains one of the major challenges in the management of disseminated histoplasmosis. Because the disease can mimic several other conditions, patients may initially receive empirical treatment for bacterial infections or tuberculosis before the correct diagnosis is established. Such delays can lead to disease progression and increased mortality, particularly in severe cases involving multiple organ systems.

The present case emphasizes the importance of considering histoplasmosis in the differential diagnosis of patients presenting with prolonged febrile illness, hepatosplenomegaly, and unexplained systemic symptoms. Even in regions where histoplasmosis is not considered highly endemic, environmental exposure to fungal spores may occur in occupational or rural settings.

Another important aspect of disseminated histoplasmosis is its potential overlap with other infectious diseases prevalent in tropical countries. For example, tuberculosis shares several clinical and radiological features with histoplasmosis, including chronic cough, weight loss, lymphadenopathy, and pulmonary infiltrates. Distinguishing between these conditions is essential because the treatment regimens differ significantly.

In addition to tuberculosis, other fungal infections such as cryptococcosis, blastomycosis, and paracoccidioidomycosis may present with similar features. Therefore, a comprehensive diagnostic approach that includes microbiological testing, histopathology, and imaging is essential for accurate diagnosis.

The prognosis of disseminated histoplasmosis has improved significantly with the availability of effective antifungal therapy. Historically, untreated disseminated disease carried a high mortality rate. However, early diagnosis and prompt treatment now result in favorable

outcomes in most cases. Nevertheless, relapse can occur if antifungal therapy is discontinued prematurely or if underlying immune dysfunction persists.

Long-term follow-up is therefore recommended to monitor clinical recovery and detect potential recurrence. Monitoring may include periodic clinical evaluation, laboratory testing, and imaging studies depending on the severity of the disease.

From a public health perspective, awareness of histoplasmosis is increasingly important as globalization, urbanization, and environmental changes alter patterns of fungal exposure. Activities such as construction, excavation, and cave exploration may increase the risk of aerosolizing fungal spores and causing outbreaks of infection.

Furthermore, improvements in diagnostic technology have led to increased recognition of histoplasmosis in regions where it was previously underdiagnosed. This highlights the need for continued research and surveillance to better understand the epidemiology of the disease.

The present case contributes to the growing body of literature describing disseminated histoplasmosis in immunocompetent individuals. Such reports are valuable because they broaden clinical understanding of the disease spectrum and emphasize that severe histoplasmosis is not limited exclusively to immunocompromised populations.

In conclusion, disseminated histoplasmosis remains a challenging clinical entity due to its variable presentation and potential for misdiagnosis. Recognition of this rare presentation in immunocompetent individuals is essential for ensuring timely diagnosis and appropriate management. Increased awareness among clinicians, combined with improved diagnostic methods, can facilitate earlier detection and improve patient outcomes.

CONCLUSION

Disseminated histoplasmosis is an uncommon but clinically significant fungal infection that can occasionally occur in individuals without identifiable immunodeficiency. Although the disease is typically associated with immunocompromised states such as HIV infection, malignancy, or immunosuppressive therapy, rare cases in immunocompetent patients highlight the importance of maintaining a high index of clinical suspicion. The nonspecific nature of symptoms, including prolonged fever, weight loss, hepatosplenomegaly, and generalized weakness, often leads to misdiagnosis or delayed diagnosis. In many clinical settings, the condition may initially mimic other infectious diseases such as tuberculosis or systemic inflammatory disorders.

Early recognition of disseminated histoplasmosis requires careful evaluation of clinical presentation, radiological findings, and laboratory investigations. Histopathological examination remains one of the most reliable diagnostic methods, particularly when intracellular yeast forms are identified within macrophages using special fungal stains such as Gomori methenamine silver or Periodic Acid–Schiff. Imaging techniques such as computed tomography can provide supportive evidence by demonstrating pulmonary nodules, lymphadenopathy, or hepatosplenomegaly, which reflect involvement of the reticuloendothelial system.

Prompt initiation of antifungal therapy is essential to prevent disease progression and reduce the risk of complications. The standard treatment regimen includes induction therapy with amphotericin B followed by prolonged oral itraconazole therapy. This therapeutic approach has significantly improved clinical outcomes and survival rates in patients with disseminated histoplasmosis. In the present case, early diagnosis combined with

appropriate antifungal treatment resulted in marked clinical improvement and favorable recovery.

This case emphasizes that disseminated histoplasmosis should be considered in the differential diagnosis of patients presenting with unexplained systemic illness, even in the absence of known immunosuppressive conditions. Increased awareness among clinicians, along with improved diagnostic strategies, can facilitate early identification and timely management of this potentially life-threatening infection. Reporting such cases contributes to a better understanding of the disease spectrum and may help guide future clinical practice.

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