A Rare Case of Cervical Lymphadenopathy in an Adolescent: Histoplasmosis Mimicking Neoplasm

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1. Background

Histoplasmosis results from inhalation of *Histoplasma capsulatum* spores, commonly found in soil enriched by bird or bat droppings.

Endemic to the **Ohio and Mississippi River valleys**, it usually presents with pulmonary or systemic symptoms.

Dissemination to **cervical lymph nodes** is exceedingly rare in **immunocompetent pediatric patients**.

Cervical lymphadenopathy in children is more commonly attributed to lymphoma, bacterial, or viral causes, making fungal infection a **diagnostic challenge**.

This case report describes an unusual presentation of histoplasmosis mimicking a neck neoplasm and highlights the role of exposure history and serologic testing in reaching the diagnosis.

2. Case Presentation

Patient: 15-year-old Caucasian female with obesity and depression.

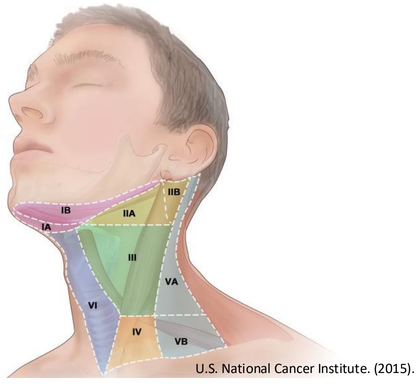
Presentation: 8-month history of a progressively enlarging, waxing and waning, non-painful **left submandibular mass** (Level IB). No systemic symptoms. Fatigue was attributed to depression.

Evaluation:

- **Ultrasound** → heterogeneous lesion with increased vascularity.
- **CT neck** → multistation cervical lymphadenopathy (largest 3.4 cm at Level IB), right upper lobe nodular consolidation, necrotic right hilar lymph node.
- **Ultrasound-guided FNA and core biopsy** → reactive lymphoid tissue, no monotypic B cells.
- **Excisional biopsy** → follicular & paracortical hyperplasia with polytypic plasmacytosis.
- **Serology** → Histoplasma antibody complement fixation positive (immunodiffusion [ID] negative).
- **Flow Cytometry** → No aberrant immunophenotype on T cells; polytypic B cells.

Exposure history: Recent summer exposure to barn with **chicken coops**.

Treatment: Itraconazole 100 mg PO TID x 3 days, then 100 mg BID x 39 days.



U.S. National Cancer Institute. (2015).

Figure 1. Diagram of cervical lymph node groups of the neck (Levels I–VI).

3. Results

Clinical course:

- Patient tolerated itraconazole well.
- At 3-month follow-up → improved energy, mood, and resolution of cervical mass.
- Surgical scar well-healed.

Key finding: Isolated cervical lymph node histoplasmosis in an immunocompetent pediatric patient is **extremely rare** and can closely mimic lymphoma.

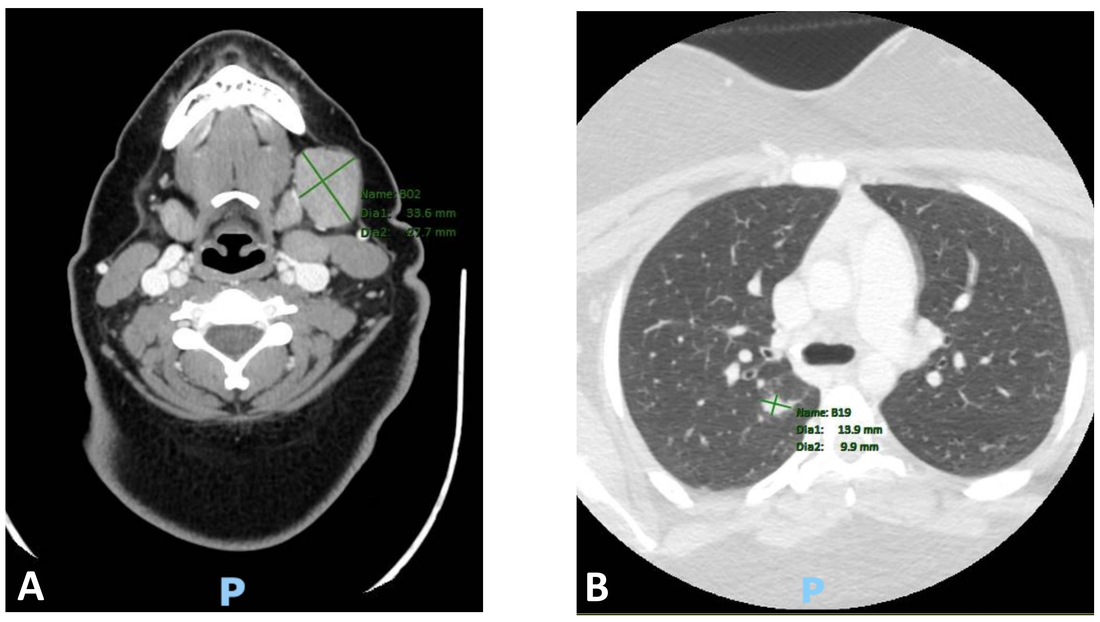


Figure 2. Radiographic findings in pediatric histoplasmosis. (A) CT neck with contrast shows an enlarged left level IB lymph node (3.4 × 2.8 cm) concerning for lymphoma. (B) Chest CT demonstrates a right upper lobe nodular consolidation consistent with necrotic lymphadenopathy. (C) Chest CT reveals a necrotic right hilar lymph node conglomerate (2.6 × 2.2 cm). Together, these findings illustrate the unusual cervical and pulmonary manifestations of disseminated histoplasmosis in an immunocompetent pediatric patient.

Case Report	Patient Age/ Sex	Residence	Potential Histoplasmosis Exposures	Presentation at Initial Visit	Location of Prominent Mass on Exam	Diagnostic Tests	Surgical Biopsy	Treatment
This study	15/F	Virginia	Contact in chicken coop; residence in endemic region	Neck mass of 8 month duration; fatigue	Left submandibular (Level IB)	**Fungus Identification**: Negative culture **CT**: L > R multistation cervical adenopathy, right mediastinal masses **Labs**: HCF titer, 1:256; negative ID	Yes, Excisional biopsy	Itraconazole 100 mg TID for 3 days, then 100 mg BID for 39 days
Lydiatt[3]	37/F	Nebraska	Exposure to old buildings and pet bird	Neck mass, 2 weeks duration; no systemic symptoms	Right lower jugular chain (Level IV)	**Fungus Identification**: Positive fungal stain, negative culture **CT**: Anterior mediastinal mass, calcified mediastinal nodes **Labs**: CF results negative	Yes, Needle biopsy	Ketoconazole 400 mg/day for 6 months
McGraw[2]	11/F	Indiana	Residence in endemic region	Neck pain and swelling, 2 weeks duration; no systemic symptoms	Right lower jugular chain (Level IV)	**Fungus Identification**: N/A **CT**: Mediastinal adenopathy **Labs**: HCF titer 1:256; ID M band	Yes, Neck dissection	Itraconazole for 2.5 weeks
Johnson[4]	15/F	Mississippi	Residence in endemic region	Neck mass, 6 weeks duration; no systemic symptoms	Left paratracheal suprasternal (Level VI)	**Fungus Identification**: Positive fungal stain **CT**: Negative **Labs**: ID M band	Yes, Neck dissection	Itraconazole for 3 months

Table 1. Summary of clinical characteristics, potential exposing factors, diagnostic findings, and outcomes in four reported cases of cervical histoplasmosis.

4. Discussion

Unique features:

- **First reported case** of waxing/waning **submandibular (Level IB)** histoplasmosis in an immunocompetent **adolescent**.

Diagnostic challenges:

- Presentation overlapped with lymphoma.
- Negative cultures and ID testing delayed diagnosis.
- **Complement fixation antibody positivity** and **exposure history** were pivotal.

Comparison to literature:

- Most pediatric cervical histoplasmosis cases involve **lower jugular (Level IV)** or **paratracheal (Level VI) nodes**
- In prior cases, diagnosis relied on fungal stain or biopsy, whereas here it was confirmed by complement fixation serology and exposure history despite negative ID testing.

Clinical pearl: Always consider **fungal etiology** in pediatric cervical lymphadenopathy in endemic areas, especially with relevant **avian exposure**

5. Conclusion

While pediatric cervical lymphadenopathy usually suggests malignancy or bacterial/viral causes, clinicians should **also consider fungal infections** in the differential.

Histoplasmosis can rarely manifest as an isolated neck mass in immunocompetent patients.

Environmental exposure history (barns, chicken coops, old buildings) and **serologic testing** (CF antibodies) are critical in raising suspicion and confirming diagnosis.

Prompt **antifungal therapy** with itraconazole can achieve full recovery.

This case expands the spectrum of atypical histoplasmosis presentations, this being the **first report** involving the **level IB node,** and underscores the importance of **multi-modality diagnostics**.

6. References

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