Peritoneal coccidioidomycosis in a pediatric patient

Barbara Ximenes Braz, MD[1], Chantal M. Soobhanath, MD[1], Amelia B. Thompson, MD, MPH[2]

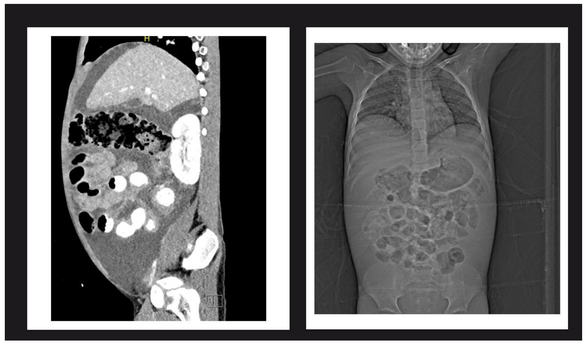
Affiliations: [1]AdventHealth for Children, Department of Pediatrics, Orlando, Florida, [2]AdventHealth for Children, Division of Pediatric Infectious Diseases, Orlando, Florida

INTRODUCTION:

Chronic peritonitis is an unusual extrapulmonary manifestation of coccidioidomycosis that is challenging to diagnose and manage due to its propensity for relapse. It is even more unusual to diagnose peritoneal coccidioidomycosis in the pediatric population.

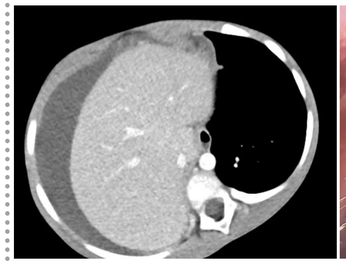
HISTORY

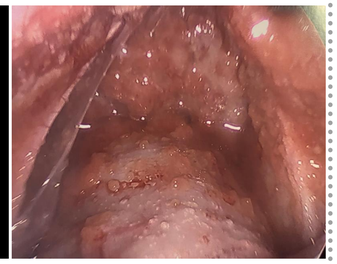
- We present the case of a previously healthy 5-year-old Filipino female child in Florida who was diagnosed with peritoneal coccidioidomycosis.
- After eight months of unintentional weight loss and five months of worsening abdominal distention at home, the patient presented to medical care.
- Exposure history revealed that she was born and raised in California and had traveled throughout the Southwest before moving to Florida one year prior to presentation.



METHODS

- Imaging revealed significant abdominal ascites and nodularities throughout the peritoneum and lining the surfaces of the intra-abdominal organs.

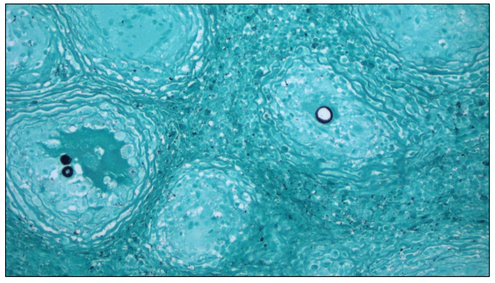


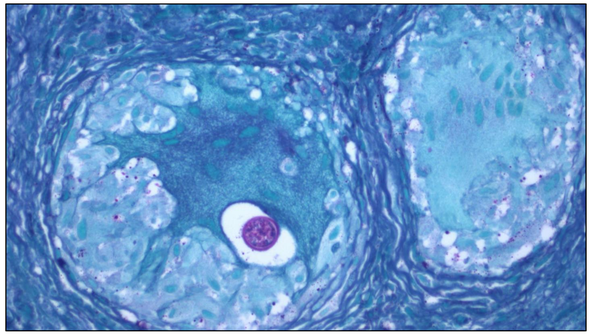


- A biopsy of the affected tissue was later performed and diffuse granulomas surrounding spherules were visualized that were positive on GMS and PAS staining, concerning for Coccidioidomycosis.
- The peritoneal fluid demonstrated a lymphocytic pleocytosis and extensive work up for infections including Mycobacterium tuberculosis and parasitic infections were not revealing. CA125 levels were elevated, but peritoneal adenosine deaminase was within normal limits.
- Complement fixation titers were significantly elevated at ≥ 1:512 and immunodiffusion titers were positive. A Coccidioides PCR was sent from the tissue to the Mayo clinic and was positive, and fungal cultures from the tissue grew *Coccidioides Immitis/posadasii.* Immunologic workup was reassuring.
- The patient was started on oral Fluconazole with rapid resolution of her symptoms.

RESULTS

- Involvement of the peritoneum in Coccidioidomycosis is extremely rare.
- Individuals of Filipino descent are at increased risk for disseminated Coccidioides.
- In peritoneal coccidioidomycosis, abdominal distention due to ascites is the most common presentation, and the peritoneal fluid is typically exudative with an increased white blood cell count.
- Imaging may reveal peritoneal deposits which can mimic other infections and malignancy.
- Two cases in literature also presented with increased CA125 levels, as in our case.
- Diagnosis can be based on histopathological demonstration of fungal structures, cultures, antibody testing, antigen detection and/or PCR.
- Treatment guidelines suggest azole therapy for nonmeningeal disseminated coccidioidomycosis with at least 6–12 months of treatment for extrapulmonary coccidioidal soft tissue infection, though some experts recommend extending therapy to 3 years to minimize the risk of relapse.





CONCLUSIONS

- Peritoneal coccidioidomycosis is an extremely uncommon condition and it is even more rare in the pediatric population, but should be considered in those in the appropriate clinical settings, particularly if they have history to suggest exposure to regions where this fungus is endemic.

REFERENCES

1. Chiller TM, Galgiani JN, Stevens DA (2003) Coccidioidomycosis. Infect Dis Clin North Am 17:41–57
2. Crum NF, Lederman ER, Stafford CM, Parrish JS, Wallace MR. Coccidioidomycosis: a descriptive survey of a reemerging disease. Clinical characteristics and emerging controversies. Medicine (Baltimore) 2004; 83: 149–175.
3. Peritoneal Coccidioidomycosis: a Rare Case Report and Review of the Literature Tina R. Storage1, Joshua Segal2, Janice Brown1 J Gastrointestin Liver Dis, December 2015 Vol. 24 No 4: 527-530
4. Ellis MW, Dooley DP, Sundborg MJ, Joiner LL, Kost ER. Coccidioidomycosis mimicking ovarian cancer. Obstet Gynecol. 2004;104:1177–9.
5. Galgiani JN, Ampel NM, Blair JE, Catanzaro A, Geertsma F, Hoover SE, et al. 2016 Infectious Diseases Society of America (IDSA) Clinical Practice Guideline for the Treatment of Coccidioidomycosis. Clin Infect Dis. 2016;63:e112–46
6. Prabhu RM, Bonnell M, Currier BL, Orenstein R. Successful treatment of disseminated nonmeningeal coccidioidomycosis with voriconazole. Clin Infect Dis 2004; 39: e74–e77. doi: 10.1086/424019