International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 12 December 2024
DOI: 10.47191/ijcsrr/V7-i12-83, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

A Case of Candida-Associated Intestinal Perforation in a 16-Month Old Child: A Rare Complication of Gastroenteritis with Fatal Outcome

Ubogun Ogheneakpobor Efe[1], Ntugba Joy Chidinma[1], Adigwe Augustina Chinaza[2], Reuben Stephen Oghenevwede[1]
[1]Delta State University Abraka, Nigeria
[2]Zaporozhye state medical and pharmaceutical university, Zaporozhye, Ukraine

ABSTRACT
Introduction: Acute gastroenteritis (AGE) remains a leading cause of childhood morbidity and mortality worldwide, predominantly caused by viral, bacterial, or protozoal infections. However, rarely, AGE can be caused by fungus and can result in severe complications, such as intestinal perforation. We report a rare case in a preschool aged child with fatal outcome.
Case presentation: This case report describes a 16-month-old Nigerian girl presenting with acute watery diarrhea, vomiting, and fever. Despite supportive management, including fluid resuscitation, antibiotics, and probiotics, her condition deteriorated, with progressive abdominal distension and desaturation. Abdominal X-ray revealed intestinal perforation, and stool culture identified Candida species as the etiologic agent. Unfortunately, delayed antifungal therapy and surgical intervention led to a fatal outcome.
Conclusion: This case highlights Candida as a rare but life-threatening cause of intestinal perforation in immunocompetent children. It underscores the importance of early diagnosis identification and judicious use of antimotility agents in managing AGE. Clinicians should maintain a high index of suspicion for fungal gastroenteritis in cases of persistent or worsening symptoms.

KEYWORDS: candida, intestinal perforation, rare complication, gastroenteritis

INTRODUCTION

Acute gastroenteritis (AGE) is a leading factor in childhood illness and death globally (1). It is characterized by the sudden onset of diarrhea, which may be accompanied by symptoms like nausea, vomiting, fever, or abdominal discomfort. The condition is marked by an increase in stool frequency or changes in stool consistency, unrelated to chronic conditions (2). Around the world, 68% of diarrhea cases affect young children, contributing to 16% of pediatric visits to emergency departments (2,3). Diarrheal diseases are the fifth most common cause of death among children, with nearly half a million children under the age of five dying from acute infectious gastroenteritis worldwide (1,2).

In children, AGE is primarily caused by viral infections, responsible for 75% to 90% of cases, while bacterial infections account for about 20%, and protozoa are also implicated (2,3). Fungal infections are rare causes of AGE. Although most cases resolve on their own or with supportive care, some children experience severe complications, such as dehydration, significant electrolyte imbalances, encephalopathy, and intestinal perforation (1). Intestinal perforation is a life-threatening condition that requires immediate surgical intervention due to the risk of fatality. In immunocompromised patients, opportunistic infections like those caused by Candida species may lead to severe gastrointestinal damage (4).

This report describes a preschool-aged child who developed acute watery diarrhea from Candida in stool cultures, which led to intestinal perforation and resulted in a fatal outcome.

CASE PRESENTATION

A 16month-old Nigerian girl with 3 days history of fever, multiple episodes of watery diarrhea and vomiting. Stools were non bloody. Temperature at presentation was 38.7. She received buscopan, loperamide, antipyretics, antiemetics and antibiotics, Oral rehydration solution, intravenous fluid and probiotics. Vital signs at presentation were; Pulse rate 110bpm, Respiratory rate 50c/m. On 3rd admission day, fever persisted and worsened, diarrhea stopped and progressive abdominal distension was noticed. Physical examination revealed a critically ill child, febrile, diffuse abdominal tenderness, muscle guarding and silent bowel sounds. She was also noticed to desaturate as SPO2 dropped to 84 percent and was commenced on oxygen via nasal prongs with worsening of other

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 12 December 2024
DOI: 10.47191/ijcsrr/V7-i12-83, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

vital signs. Abdominal x-ray performed revealed findings of air under the diaphragm and inferiorly displaced liver which are in keeping with intestinal perforation. Stool microscopy, culture and sensitivity (M/C/S) yielded +++ candida cells after 48hours. Blood culture and other investigations were not performed due to limited finance. Fluid resuscitation and antibiotics continued till the early hours of 4th admission day when she passed on.

Table 1: Showing Laboratory Investigations

Parameter	Value	Reference range
Packed cell volume	31%	35.4-56.5%
Hemoglobin HB	10.3g/dl	11-17.3g/dl
White blood cells	15400	4000-11000 cells/mcL
Neurophils	66%	15-78%
Lymphocyte	29%	15-75%
Serum Potassium	3.7mmol/L	3.5-5.1mmol/L

Figure 1: Plain Abdominal X-ray of the Abdomen Showing Air under the Diaphragm and Inferiroly Displaced Liver

DISCUSSION

Candida species, especially Candida albicans, are normal inhabitants of the oral cavity, upper respiratory tract, vagina, and gastrointestinal tract in many healthy individuals (5). However, under certain circumstances—such as during antibiotic use, immune suppression, or the presence of underlying health conditions—these fungi can proliferate and lead to infections (4,5). While Candida is often associated with oral, esophageal, or systemic infections, it is a rare cause of intestinal perforation (4). In most cases, Candida infections are self-limiting, but in some instances, especially in young children, those with a history of prolonged antibiotic use, chronic illnesses, or immunocompromised individuals, the fungus may invade the gastrointestinal wall, resulting in perforation (4). This perforation can lead to peritonitis and potentially progress to life-threatening sepsis, particularly if antifungal treatment is delayed and the diagnosis is made too late, leading to a fatal outcome (5). Common clinical signs of gastrointestinal perforation include sudden abdominal distension, apathy, generalized abdominal tenderness and guarding, and lethargy (5). Our patient's clinical presentation aligned with the described symptoms in the literature.

The exact mechanism behind Candida-induced intestinal perforation is not well understood but is thought to involve local invasion of the intestinal mucosa, causing necrosis, ulceration, and eventual perforation (4). In this case, while our patient had no significant history of immunosuppression, the overgrowth of Candida may have been aggravated by antibiotic use for the current illness. Another potential factor could be increased intraluminal pressure due to the use of antimotility agents, which have been shown to prolong fever, diarrhea, and the excretion of pathogens (5,6). The presence of Candida in the stool culture likely reflects a systemic infection, which contributed to the severe gastrointestinal complications. Although the exact area of the gastrointestinal tract affected

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 12 December 2024
DOI: 10.47191/ijcsrr/V7-i12-83, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

is unclear (as the patient passed away before we could perform surgical intervention), it is likely that the large intestine was involved (7,8).

Treatment of Candida-induced intestinal perforation typically requires a combination of antifungal therapy and surgical intervention. Evidence supports the use of echinocandins (e.g., caspofungin: initial dose 70 mg, followed by 50 mg daily; micafungin: 100 mg daily; anidulafungin: initial dose 200 mg, followed by 100 mg daily) as first-line therapy (9). In certain patients, including those who are not critically ill and are unlikely to have Candida species resistant to fluconazole, an alternative initial therapy is fluconazole (12 mg/kg loading dose, followed by 6 mg/kg daily) (9). Unfortunately, our patient passed away before surgical intervention, and antifungal treatment was not initiated in time as the stool microscopy, culture, and sensitivity results were delayed. The patient did receive fluid resuscitation and other supportive medications.

Several studies have documented intestinal perforations due to bacterial and fungal infections (10,11,12). However, this is the first report of Candida causing intestinal perforation in a toddler. This case highlights the importance of maintaining a high index of suspicion in children with acute watery diarrhea who exhibit sudden abdominal distension and a deteriorating clinical condition. Clinicians should consider a fungal cause of gastroenteritis in such cases. Furthermore, the decision to treat gastroenteritis with antibiotics and antimotility agents should be carefully considered and avoided when possible.

CONCLUSION

Early detection of fungal infections and prompt antifungal treatment can significantly improve the prognosis of patients with fungal gastroenteritis. Furthermore, surgical intervention should not be delayed. This case report serves as a reminder to clinicians to consider rare causes of gastroenteritis, particularly when patients show no improvement, and to act swiftly in diagnosing and treating such conditions.

REFERENCES

1. PosovszkyC, BuderusS, ClassenM, LawrenzB, KellerKM, KoletzkoS. Acute Infectious Gastroenteritisin Infancy and Childhood. DtschArzteblInt.2020 Sep11;117(37):615-624.doi:10.3238/arztebl.2020.0615. PMID:33263539; PMCID:PMC7805585.
2. HartmanS, BrownE, LoomisE, RussellHA. Gastroenteritis in Children. Am Fam Physician.2019 Feb1;99(3):159-165. Erratumin: Am Fam Physician. 2019Jun15;99(12):732. PMID:30702253.
3. PeterHeinz.Management of acute gastro enteritisin children. Paediatricsand Child Health. Volume18, Issue10, 2008, Pages453-457, ISSN1751-7222,https://doi.org/10.1016/j.paed.2008.07.004.
4. PappasPG ,LionakisMS, ArendrupMC, Ostrosky-ZeichnerL, KullbergBJ. Invasivecandidiasis. NatRevDisPrimers. 2018May11;4:18026.doi:10.1038/nrdp.2018.26.PMID:29749387
5. ZhangM. A case repor to finfant with gastric perforation caused by Candidaalbicans infection. Medicine (Baltimore). 2019May;98(22):e15825. doi:10.1097/MD.0000000000015825. PMID:31145321;PMCID:PMC6709138.
6. DuPontHL, HornickRB. Adverse effect of lomotil therapy inshigellosis. JAMA.1973;226(13):1525–8.
7. ChoiYJ, ChoYH, KimSH, KimHY. Clinical implication of spontaneous gastrointestinal perforation in pediatric patients: its difference according to age group. AnnSurgTreatRes.2018Sep;95(3):141-146. doi:10.4174/astr.2018.95.3.141.Epub2018Aug31. PMID:30182020;PMCID:PMC6121166.
8. KimSH ,ChoYH, KimHY. Spontaneous Perforation of Colonin Previously Healthy Infants and Children: Its Clinical Implication. Pediatr Gastroenterol Hepatol Nutr.2016Sep;19(3):193-198. https://doi.org/10.5223/pghn.2016.19.3.193
9. PappasPG, KauffmanCA, AndesDR, ClancyCJ, MarrKA, Ostrosky-ZeichnerL, ReboliAC, SchusterMG, VazquezJA, WalshTJ, ZaoutisTE, SobelJD. Clinical Practice Guideline for the Management of Candidiasis: 2016 Update by the Infectious Diseases Society of America. ClinInfectDis.2016Feb15;62(4):e1-50. doi:10.1093/cid/civ933.Epub2015Dec16. PMID:26679628;PMCID:PMC4725385.
10. El-ShabrawiMHF, KamalNM, JouiniR, Al-HarbiA ,VoigtK, Al-MalkiT. Gastrointestinal basidiobolomycosis: anemerging fungal infection causing bowel perforation in a child.JMedMicrobiol.2011Sep;60(Pt9):1395-1402. doi:10.1099/jmm.0.028613-0.Epub2011May12. PMID:21566088

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 12 December 2024
DOI: 10.47191/ijcsrr/V7-i12-83, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

11. OnyebuchiC, SommerhalderC, TranS, RadhakrishnanR, UkudeyevaA, QiuS, Bowen-JallowKA. Cecalperforation secondary to fungal necrotizing enterocolitisinaprematureneonate. Int J Surg Case Rep.2021Sep;86:106304. doi:10.1016/j.ijscr.2021.106304.Epub2021Aug11. PMID:34428609;PMCID:PMC8387757.
12. ChuYY, LinCY, KuoTL, MuSC, LauBH, ChouYY. Pediatrics igmoidcolonic perforation with Campylobacterenterocolitis: a case report and review of the literature. JMedCaseRep.2022Dec30;16(1):487. doi:10.1186/s13256-022-03711-1. PMID:36581904; PMCID:PMC9801598.

Cite this Article: Ubogun Ogheneakpobor Efe, Ntugba Joy Chidinma, Adigwe Augustina Chinaza, Reuben Stephen Oghenevwede (2024). A Case of Candida-Associated Intestinal Perforation in a 16-Month Old Child: A Rare Complication of Gastroenteritis with Fatal Outcome. International Journal of Current Science Research and Review, 7(12), 9420-9423, DOI: https://doi.org/10.47191/ijcsrr/V7-i12-83