

Case Report of a Paralytic Ileus in a Non-Critically ill Child with Covid 19 Infection

Amjad Ghandurah ^{1*}, Nabil Aleysae ¹, Naffaa Alharbi ¹, Mona Bahasan ¹, Osama Bawazeer ², and Alaa Bamahmud ¹

¹Department of Pediatrics, Section of General pediatrics, King Faisal Specialist Hospital and Research Center -Jeddah, Saudi Arabia.

²Department of Surgery, Section of pediatric Surgery, King Faisal Specialist Hospital and Research Center -Jeddah, Saudi Arabia.

***Corresponding Author:** Amjad Ghandurah, Department of Pediatrics, Section of General pediatrics, King Faisal Specialist Hospital and Research Center -Jeddah, Saudi Arabia.

Received Date: March 13, 2025 | **Accepted Date:** March 27, 2025 | **Published Date:** April 08, 2025

Citation: Amjad Ghandurah, Nabil Aleysae, Naffaa Alharbi, Mona Bahasan, Osama Bawazeer, et al, (2025), Case Report of a Paralytic Ileus in a Non-Critically ill Child with Covid 19 Infection, *International Journal of Clinical Case Reports and Reviews*, 25(1); DOI:10.31579/2690-4861/699

Copyright: © 2025, Amal Almahroos. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract:

COVID-19 infection presents with a range of clinical manifestations, from pulmonary symptoms to multisystem organ involvement. Gastrointestinal complications, while commonly reported in adults and critically ill individuals, are not frequently seen in the pediatric population. This case report discusses a 4-year-old boy who developed abdominal distension during the course of an acute COVID-19 infection. Radiological findings were consistent with paralytic ileus. The child had a history of end-stage renal disease secondary to steroid-resistant nephrotic syndrome and had undergone a living kidney transplant eight months prior. He presented with fever, upper respiratory tract symptoms, abdominal pain, and vomiting. Despite not appearing clinically ill, his abdomen was significantly distended. An abdominal X-ray revealed dilated small bowel loops and multiple air-fluid levels. He was managed conservatively as a case of paralytic ileus. This report suggests a possible association between COVID-19 infection and the development of paralytic ileus in non-critically ill patients. We emphasize the importance of anticipating gastrointestinal complications in clinically stable patients with COVID-19 infection.

Key words: ileus; pseudo- obstruction; covid-19, paralytic ileus; bowel dilatation; bowel obstruction

Introduction

COVID-19, which emerged in 2019, has affected individuals globally, commonly presenting as pneumonia and respiratory distress across all age groups. While children with mild cases typically recover within two weeks, clinical deterioration can occur in critically ill patients. Severe complications in adults have included acute respiratory distress syndrome, cardiovascular issues such as arrhythmias and shock and thromboembolic and neurological complications. [1,2,3,4,5]

Gastrointestinal symptoms, including anorexia, nausea, vomiting, and abdominal pain, have also been reported. In addition, there have been cases of bowel obstruction in critically ill adult patients. Such manifestations are less common in children, with only one known case of pseudo-obstruction of the bowel in a critically ill infant. [6,7] Here, we report a case of paralytic ileus in a child during the course of COVID-19 infection.

Clinical History

A 4-year-old boy with a history of end-stage renal disease secondary to steroid-resistant nephrotic syndrome due to PLCE1 mutation (NPHS3) {OMIM #610725} was maintained on hemodialysis for two years before receiving a kidney transplant. Both the child and the donor were CMV IgG positive prior to the transplant, which was performed in November 2021 without postoperative complications, except for T-cell mediated rejection four months later. He was treated with methylprednisolone pulse therapy (10 mg/kg/day) for three days, followed by steroid tapering according to renal transplant protocol. Maintenance immunosuppressive medications, including tacrolimus and mycophenolate mofetil (MMF), were adjusted to maintain tacrolimus levels between 8-10 ng/ml and MMF at 950 mg/m²/day. [8] He continued with regular follow-ups until July 2022, when he presented to the emergency department with fever, coryza, and abdominal pain lasting one day. The child had experienced one episode of non-bilious vomiting but no diarrhea. He had no contact

with sick individuals and had no prior history of abdominal surgeries aside from the kidney transplant. On examination, the child appeared well-hydrated and maintained normal oxygen saturation in room air. He was febrile but vitally stable, alert, and oriented, with mild discomfort. His abdomen was significantly distended but not tender, and bowel sounds were sluggish. A digital rectal examination revealed a distended rectum filled with watery stool. Other systemic examinations were unremarkable. A plain abdominal X-ray revealed dilated small bowel loops and multiple air-fluid levels (Figure 1). Laboratory investigations, including CBC, electrolytes, and inflammatory markers, were unremarkable. As per hospital policy during the COVID-19 pandemic, all patients with respiratory symptoms and fever or known contact with COVID-19 cases were screened before admission. Our patient tested

positive for COVID-19 by PCR testing. In collaboration with the pediatric surgery team, the child was managed conservatively. He was kept nil per oral (NPO), with a nasogastric tube (NGT) inserted and kept on free drainage with intermittent suctioning every four hours. Fleet enema and rectal irrigation with normal saline were performed twice daily. Additional treatments included appropriate hydration and the administration of antibiotics (ceftriaxone and metronidazole). The child was closely monitored for several days, with daily abdominal X-rays showing significant improvement in bowel dilatation and a reduction in air-fluid levels (Figure 2). The NGT was removed after five days, and the child resumed oral intake, which he tolerated well. One week later, the child had fully recovered and was discharged home with regular clinic follow-up.

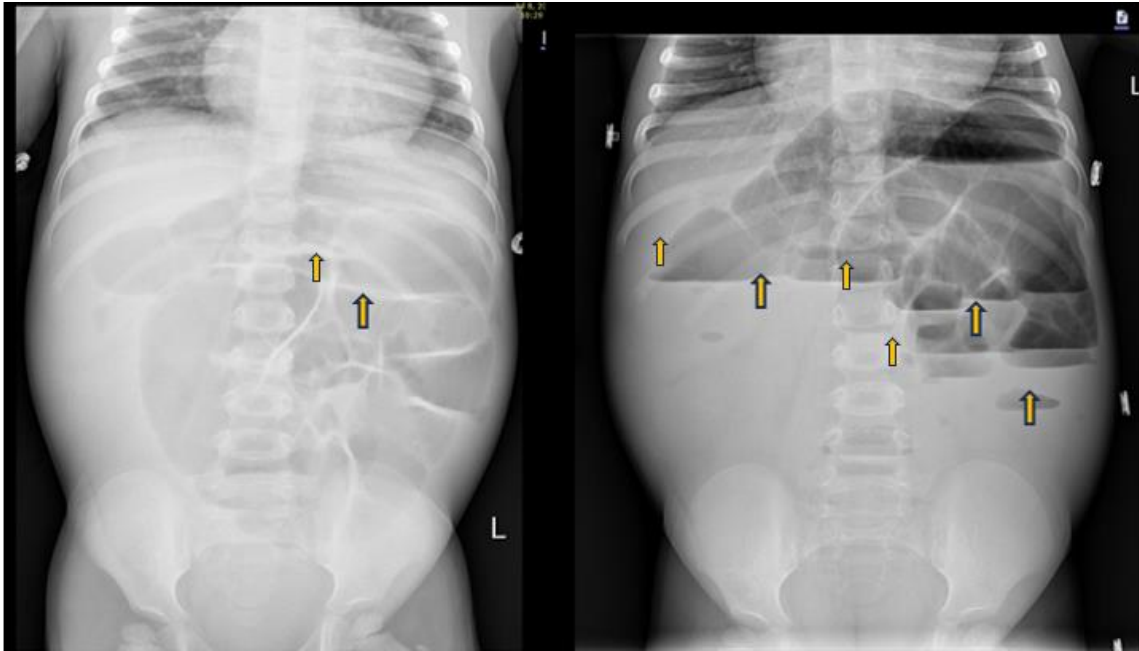


Figure 1: Abdominal X-ray in Supine and Erect position showing dilated small bowel loops and multiple air-fluid levels on admission.



Figure 2: Abdominal X-ray erect and supine showing improvement in bowel dilatation and a reduction in air-fluid levels after 2 days.

Discussion

COVID-19 infection can present with a range of clinical manifestations, from pulmonary symptoms to multisystem organ involvement, including gastrointestinal symptoms. While not common, there have been reports of bowel dilatation in both adults and the pediatric population, mostly in critically ill patients. [9,10] In this case, the child was not critically ill, yet he developed paralytic ileus.

Importantly, our patient did not present with electrolyte disturbances such as hypokalemia during this illness and had no prior history of abdominal surgeries aside from the retroperitoneal renal transplant. The exact mechanism of gastrointestinal complications in COVID-19 is unclear but may be related to the overexpression of angiotensin-converting enzyme 2 (ACE2), which is expressed in the mucosa of the upper and lower gastrointestinal tract, gallbladder, and pancreatic cells.[11] ACE2 is a host receptor for SARS-CoV-2 entry and its overexpression may be responsible for the gastrointestinal complications reported in COVID-19.[12] Dinesh BV et al. reported a case of an immunocompetent adult with CMV-induced colonic stricture presenting as acute intestinal obstruction.[13] Viral infections such as CMV can affect immunocompromised patients, including post-solid organ transplant recipients, causing gastrointestinal complications.[14] Our patient had an intermediate risk for CMV infection but did not develop CMV viremia during post-renal transplant screening. Additionally, Almueilo SH et al. reported a case of an adult kidney transplant recipient who developed colonic dilatation while on regular immunosuppressive drugs, including prednisolone, cyclosporine, and mycophenolate mofetil (500 mg TID). They believed that the colonic dilatation was secondary to mycophenolate mofetil, as attempts to discontinue different immunosuppressive drugs indicated that mycophenolate was the most likely contributing factor.[15] However, our patient was receiving a relatively lower dose of MMF (950 mg/m²/day) compared to the standard protocol dosing (1200 mg/m²/day) due to persistent neutropenia.

Conclusion

This case report suggests a possible association between COVID-19 infection and the development of gastrointestinal symptoms leading to paralytic ileus in non-critically ill children. However, it is important to assess for other contributing factors, such as electrolyte disturbances—especially hypokalemia—viral infections (particularly CMV), severe gastroenteritis, inflammatory bowel disease, and medications, to identify all possible causes and intervene accordingly.

Acknowledgment: The Author thanks the patient and his family for their participation, special thanks for the medical team at KFSHRC-J for their valuable opinion and management.

Study funding: None

Disclosure: All Authors reported no disclosures related to the manuscript.

References:

1. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, et al.(2020). Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *JAMA*;323(11):1061-1069.
2. Chen T, Wu D, Chen H, Yan W, Yang D, Chen G, et al.(2020). Clinical characteristics of 113 deceased patients with coronavirus disease 2019: Retrospective study. *BMJ*. ;368:m1091. doi:10.1136/bmj.m1091.
3. Arentz M, Yim E, Klaff L, Lokhandwala S, Riedo FX, Chong M, et al.(2020). Characteristics and outcomes of 21 critically ill patients with COVID-19 in Washington State. *JAMA*.;323(16):1612-1614. doi:10.1001/jama.2020.4331.
4. Klok FA, Kruip MJHA, van der Meer NJM, Arbous MS, Gommers DAMPJ, Kant KM, et al.(2020). Incidence of thrombotic complications in critically ill ICU patients with COVID-19. *Thrombosis Research*.;191:145-147.
5. Liotta EM, Batra A, Clark JR, Shlobin NA, Hoffman SC, Orban ZS, et al.(2020). Frequent neurologic manifestations and encephalopathy-associated morbidity in COVID-19 patients. *Annals of Clinical and Translational Neurology*;7(11):2221-2230.
6. Ibrahim YS, Karuppusamy G, Parambil JV, Alsoub H, Al-Shokri SD.(2020).Case report: Paralytic ileus: A potential extrapulmonary manifestation of severe COVID-19. *American Journal of Tropical Medicine and Hygiene*;103(4):1600-1603. doi:10.4269/ajtmh.20-0521.
7. Herdes RE, Cagil Y, Namjoshi S, Hassan M. (2021). Initial presentation of a pediatric intestinal pseudo-obstruction episode after SARS-CoV-2 virus (COVID-19) infection. *JPGN Reports*;2(2):e059. doi:10.1097/pg9.000000000000059.
8. American Journal of Transplantation. *American Journal of Transplantation*. 2009;9(Suppl 3):Sii–Sii.
9. Kaafarani HMA, El Moheb M, Hwabejire JO, Naar L, Christensen MA, Breen K, et al. (2020). Gastrointestinal complications in critically ill patients with COVID-19. *Annals of Surgery*.;272(2):e61-e62. doi:10.1097/SLA.0000000000003928.
10. Sattar Y, Connerney M, Rauf H, Saini M, Ullah W, Mamtani S, et al. (2020). Three cases of COVID-19 disease with colonic manifestations. *American Journal of Gastroenterology*. ;115(6):948-950. doi:10.14309/ajg.0000000000000443.
11. Hikmet F, Méar L, Edvinsson Å, Micke P, Uhlén M, Lindskog C. (2020).The protein expression profile of ACE2 in human tissues. *Molecular Systems Biology*. 2020;16(7):e9610. doi:10.15252/msb.20209610.
12. Penninger JM, Grant MB, Sung JYJ.(2021). The role of angiotensin-converting enzyme 2 in modulating gut microbiota, intestinal inflammation, and coronavirus infection. *Gastroenterology*.;160(1):39-46.
13. Dinesh BV, Selvaraju K, Kumar S, Thota S. (2013).Cytomegalovirus-induced colonic stricture presenting as acute intestinal obstruction in an immunocompetent adult. *BMJ Case Reports*;2013:bcr2013200944. doi:10.1136/bcr-2013-200944.
14. Eid AJ, Arthurs SK, Deziel PJ, Wilhelm MP, Razonable RR.(2010). Clinical predictors of relapse after treatment of primary gastrointestinal cytomegalovirus disease in solid organ transplant recipients. *American Journal of Transplantation*;10(1):157-161. doi:10.1111/j.1600-6143.2009.02861.x.
15. Almueilo SH, Alsulaiman RM.(2015). Acute colonic pseudo-obstruction caused by mycophenolate mofetil in a kidney transplant recipient. *Experimental and Clinical Transplantation*. ;13(2):196-199. doi:10.6002/ect.2014.0170.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

[Submit Manuscript](#)

DOI:[10.31579/2690-4861/699](https://doi.org/10.31579/2690-4861/699)

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more <https://auctoresonline.org/journals/international-journal-of-clinical-case-reports-and-reviews>