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Case report

Priapism in a 9-Year-Old Ghanaian Boy with COVID-19: A Case Report

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HIGHLIGHTS

- Priapism is a rare complication in children.
- It is medical emergency that requires urgent medical attention.
- A 9-year-old boy developed priapism that was solely attributed to COVID-19.
- Priapism as a result COVID-19 has not been reported in children.

ARTICLE INFO

Receive Date: 25 December 2021

Accept Date: 11 January 2022

Available online: 07 February 2022

DOI: 10.22034/TRU.2022.320740.1094

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ABSTRACT

Introduction

Priapism is not a common condition among children. It is a medical emergency irrespective of the age at presentation and requires immediate management to avert long-term complications.

Case presentation

We present a 9-year-old boy who presented with fever and cough of 2 days and a sustained painful erection of 5-hour duration and breathlessness just before presentation to a hospital. He eventually tested positive for severe acute respiratory syndrome coronavirus two infections (COVID-19). He did not have any predisposing condition such as sickle cell disease, leukaemia, or associated trauma to the pelvis or genitalia. He was also not on any implicating medication. He achieved detumescence on conservative management.

Conclusions

Authors conclude that it is more likely that the patient developed priapism due to COVID-19.

Keywords: Priapism; Medical Emergency; Respiratory Distress; SARs-CoV-2 Infection

Introduction

Priapism is a prolonged erection of the penis unrelated to sexual stimuli lasting at least four hours (1,2). It is a

medical emergency irrespective of the age at presentation. Priapism in childhood commonly occurs in children with Sickle Cell Disease (SCD), especially during or

after puberty which is attributed to vaso-occlusion episodes, secondary to deformation of red blood cells containing hemoglobin S by hypoxemia and acidosis caused by vasoconstriction, hypovolemia or stasis in the corpora cavernosa during physiologic erection, causing microvascular obstruction, in a vicious cycle (3).

The COVID-19 infection is an ongoing pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (4,5). It was first reported in December 2019 in Wuhan, China. The World Health Organization (WHO) declared a Public Health Emergency of International Concern in January 2020 and a pandemic in March 2020 (5).

Priapism is common among adults with severe SARS-CoV-2 infection, and it is mainly ischaemic in nature (6-8). The COVID-19 infection in children is primarily asymptomatic and of mild clinical course (9). The clinical features of COVID-19 infection in children include fever, cough, dyspnea, lacrimation, rhinorrhea, sneeze, sore throat, nausea, vomiting, diarrhea, conjunctivitis, dizziness, headache, myalgia, and fatigue (2,4). Priapism is a clinical feature or complication of COVID-19 in children that have not been previously reported in the literature.

Case presentation

A 9-year-old boy presented to a hospital with fever and cough of 2 days, a sustained painful erection of 5-hour duration, and breathlessness just before presentation. The patient's mother signed written informed consent. This case report is presented based on CARE guidelines.

He was well two days prior to presentation when he developed fever and started coughing after that. The fever was intermittent, and the cough was worse in the night. The mother self-medicated with paracetamol and amoxicillin, but the symptoms worsened. The patient had a sustained penile erection on the second day, alarming



Figure 1. Priapism in a 9-year-old boy

the parents after it lasted about an hour with severe pain and breathlessness. This was his first episode of prolonged penile erection. He was looked warm water bath, paracetamol tablet 500mg statim and ibuprofen tablet 200 mg statim to achieve detumescence but all to no avail. He was, therefore, taken to a hospital. Five hours had elapsed since the onset of priapism before his hospital admission. He did not have any chronic diseases such as sickle cell disease or leukaemia. There was no history of genital or perineal trauma. He was also not on any medication that could induce priapism, and he did not show signs of any drug poisoning. He has no previous admissions to the hospital, and he has not been hemotransfused before.

On examination, he weighed 27kg(above 25th percentile), and he was 133 cm tall (on the 50th percentile). He was conscious, well orientated in time and person but pain. He had warm extremities. He was febrile (with an axillary temperature of 39.7°C), breathless with flaring ala nasal and intercostal recessions, but no lower chest in a drawing. He was pink at the lips, palms, and conjunctiva. His radial pulse and blood pressures were 98 beats per minute with good volume and 105/62 mmHg, respectively. The first and second heart sounds were present and regular, with no murmurs heard on auscultation. His oxygen saturation was 96% on room air. His respiratory rate was 40 breaths per minute. On auscultation, air entry was good bilaterally with clear breath sounds. He had regular heart sounds and no crackles. On genital examination, he had normal male genitalia; the penis was erect with a stretched penile length of 7 cm and tender to touch. There was no sign of trauma to the penis, the scrotum, or the perineum, such as abrasions, bruises, or ulcerations. Testes were bilaterally descended with a testicular volume of 3 ml. Tanner staging was 1 for both pubic hair and testicular volume.

Investigations and their outcome

Complete blood count showed a hemoglobin level of 12.5g/dl, white cell counts 15 X 10⁹/L, MCV 78 Fl, Platelet 240 X 10⁹/L. Bone marrow cytology was reported as usual. The rapid diagnostic test for malaria was negative. A blood smear revealed no malaria parasites. The sickling test was negative, and hemoglobin electrophoresis was HbAA. There was no bacterial growth for blood culture after five days of incubation, and there was normal urinalysis with no bacterial growth on urine culture. Chest X-Ray was regular, the patient's nasopharyngeal swabs for SARS-CoV-2 investigation using Real-Time Polymerase

Chain Reaction (RT-PCR) was positive. The hospital does not have a blood gases and Doppler ultrasonography facility, so they were not done. He was admitted to the isolation ward and put on oxygen at a rate of 4 ml/L via nasal prongs. The following medications were administered:

Intravenous 10% dextrose saline for calories and

maintenance Intramuscular injection of ketamine 100mg statim for pain relief and Oral sedation azithromycin 100 mg bd x 3 after the COVID-19 test came out to be positive.

Oral paracetamol 500 mg TDS for five days

The patient achieved detumescence one hour after admission (making the total sustained erection 6 hours). The fever, cough, and breathlessness improved on the second day, and he was well by the fifth day of admission, evidenced by the resolution of fever, cough, and breathlessness. On the seventh day of isolation and treatment, he was clinically well but was kept in isolation for 14 days, and a second test was done, which was negative. He was then discharged home with appointments to ensure that he was well.

Discussion

Most children with SARS-Cov-2 infection are asymptomatic or have a disease with a mild clinical course (4,5,9). However, some children can develop severe illness and require hospitalization and intensive care (4).

The common clinical features of SARS-Cov-2 infection in children include fever, cough, dyspnoea, rhinorrhoea, poor feeding, vomiting, diarrhoea, headache, and fatigue (2,4,5,9). In addition to fever, cough, and dyspnoea, our patient also presented with priapism which lasted for six hours (5 hours before presentation and 1 hour after hospital admission). He did not have sickle cell disease or is known for malignancy, such as leukaemia which is a known risk factor for priapism. He was not on medications that can precipitate priapism, such as antidepressants, antipsychotics, antianxiety agents, psychotropics, and alpha-adrenergic blockers (3,10,11). He did not have trauma to the genitalia or perineum. This was the first episode of priapism. In this context, the authors believed that priapism is more likely due to SARS-Cov-2 infection than all other possible causes such as SCD, malignancy, medications, and trauma were ruled out (1,3,10,12). The causative mechanism could not be established because the hospital's laboratory could not do cavernosal blood gas investigation to determine the acid-base status of the penile blood system and Doppler ultrasound. The patient could be described as having severe SARS-CoV-2 infection as he needed respiratory support with oxygen and had to be treated in a hospital for one week. Severe COVID-19 in adults is known to precipitate priapism (6-8).

Priapism is common among adults with COVID-19, and it is mainly ischaemic in nature and due to arterial and venous thrombotic disease, in response to excessive inflammation, platelet activation, endothelial dysfunction, and venous stasis (6,7). The cause of priapism in our patient was more likely ischemic, although we could not substantiate it because of poor health infrastructure, such as poor laboratory support, that afflicts resource-

limited countries. However, children are more resilient against infections, including COVID-19 (13), and this physiological adaptation of children might have mitigated the effect of priapism in our patients. Diagnosis of priapism in children includes taking a blood sample for hemoglobinopathy, leukaemia, toxicology screening, cavernosal blood gas analysis, and color duplex ultrasonography to determine arterial waveform (1,3,10,11). Treatment of priapism can start at home by taking a warm bath, doing physical activity, and taking analgesia as soon as the child gets an episode. If there is no improvement, they should report immediately to the hospital. Compression and ice packs with analgesia and sedation with ketamine can be initiated. Intracavernosal injection with phenylephrine can be effective, and corpora cavernosa drainage and irrigation. For children with sickle cell disease, intravenous hydration, hydroxyurea, and exchange blood transfusion can be helpful (1,3). Our patient achieved detumescence after one hour, on admission to hospital, on conservative management with intravenous fluid, intramuscular ketamine, and an ice pack applied to the perineum and the penis. He was also put on oral azithromycin for a total of 3 days. He was discharged after isolation and treatment for 14 days. He was reviewed for the first appointment one week after discharge and the second review one month after the first. His penis and testes were average. According to the child and mother's statements, he had normal erections, especially in the morning before micturition. He did not report any further priapism after he was discharged. He was scheduled for reviews every three months to ensure potential complications of priapism would be timely detected and promptly managed.

Conclusions

Priapism may be a rare clinical feature of COVID-19 among children and should be looked for following COVID-19 infection in children. Any child with such a finding needs urgent management for the best clinical outcome.

Authors' contributions

EA, IO, RA and GAAF came out with the concept, FJMKD, TOK and KA drafted the first manuscript. EA, TOK and RA drafted the final manuscript. All authors read through and approved the final draft.

Acknowledgements

Authors are grateful to the family for allowing them to publish the data.

Conflict of interest

The author declares that there is no conflict of interest.

Funding

The authors received no financial support for this research.

Ethical statement

Informed consent was signed by the patient's mother. This case report is presented based on CARE guideline.

Data availability

Data will be provided on request.

Abbreviations

COVID-19	Coronavirus disease of 2019
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
SCD	Sickle cell disease
WHO	World Health Organization

References

1. Donaldson JF, Rees RW, Steinbrecher HA. Priapism in children: a comprehensive review and clinical guideline. *J Pediatr Urol*. 2014;10(1):11–24.
2. Guo CX, He L, Yin JY, Meng XG, Tan W, Yang GP et al. Epidemiological and clinical features of pediatric COVID-19. *BMC Med* 2020;18 (4): 250-6.
3. de Jesus LE, Dekermacher S. Priapism in children: review of pathophysiology and treatment. *J Pediatr*. 2009;85 (3):194–200.
4. CDC. [cited 2021 Jul 19]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/children/symptoms.html>.
5. Stawicki SP, Jeanmonod R, Miller AC, Paladino L, Gaieski DF, Yaffee AQ et al. The 2019–2020 Novel Coronavirus (Severe Acute Respiratory Syndrome Coronavirus 2) Pandemic: A Joint American College of Academic International Medicine-World Academic Council of Emergency Medicine Multidisciplinary COVID-19 Working Group Consensus Paper. *J Glob Infect Dis*. 2020;12(2):47–93.
6. Carreño DV, Perez CP, Vasquez D, Oyola JA, Suarez O, Bedoya C. Venous Occlusive Priapism in COVID-19 Disease. *Urol Int*. 2021;105(9):916-19.
7. Silverman ML, VanDerVeer SJ, Donnelly TJ. Priapism in COVID-19: A thromboembolic complication. *Am J of Emerg Med*. 2021;45(2021):686.e5-686.e6.
8. Addar A, Al Fraidi O, Nazer A, Althonayan N, Ghazwan Y. Priapism for 10 days in a patient with SARS-CoV-2 pneumonia: a case report. *Journal of Surgical Case Reports*. 2021;2021(4):1-3.
9. Song W, Li J, Zou N, Guan W, Pan J, Xu W. Clinical features of pediatric patients with coronavirus disease (COVID-19). *J Clin Virol*. 2020;127(2020):1–6.
10. Eiland LS, Bell EA and John Erramouspe J. Priapism Associated With the Use of Stimulant Medications and Atomoxetine for Attention-Deficit/Hyperactivity Disorder in Children. *Ann Pharmacother*. 2014;48(10):1350-5.
11. Drugs Reported to Cause Priapism [Internet]. [cited 2021 Jul 19]. Available from: <https://www.ucsfhealth.org/education/drugs-reported-to-cause-priapism>
12. De Rose AF, Paraboschi I, Mantica G, Szpytko A, Ackermann H, De Caro G, Terrone C, Mattioli G. Cycling Trauma as a Cause of Arterial Priapism in Children and Teenagers. *Rev Urol* 2017;19 (4):273–7.
13. ScienceDaily. Children more resilient against coronavirus, study reveals. [cited 2021 Sep 28]. Available from: <https://www.sciencedaily.com/releases/2020/06/200626114746.htm>

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How to cite this article

Ameyaw E, Okyere I, Ameyaw R, O. Konney TH, Ansong K, JMK Damalie F, Asafu-Adjaye

Frimpong G. Priapism in a 9-Year-Old Ghanaian Boy with COVID-19: A Case Report.

Translational Research in Urology. 2022 Jan;4(1):4-8.

DOI: [10.22034/TRU.2022.320740.1094](https://doi.org/10.22034/TRU.2022.320740.1094)

URL: https://www.transresurology.com/article_143143.html

