International Journal of Contemporary Pediatrics
Vishwanathan S et al. Int J Contemp Pediatr. 2024 Jul;11(7):988-990
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: https://dx.doi.org/10.18203/2349-3291.ijcp20241691

Case Report

Transient synovitis of hip joint following COVID-19 infection in a child with Hodgkins lymphoma

Sanjana Vishwanathan[1], Rishab Bhurat[2]*, Litha Francis[3], Arunan Murali[4], Mahesh Janarthanan[5], Dhaarani Jayaraman[2]

[1]Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India
[2]Department of Pediatrics Hematology and Oncology, Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India
[3]Department of Pediatrics, Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India
[4]Department of Radiology and Imaging Sciences, Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India
[5]Department of Clinical Immunology and Rheumatology, Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India

Received: 18 May 2024
Revised: 14 June 2024
Accepted: 17 June 2024

***Correspondence:**
Dr. Rishab Bhurat,
E-mail: rishab.bhurat@gmail.com

ABSTRACT

Transient synovitis is a common cause of hip pain in children. COVID-19 pandemic affected pediatric cancer patients more often that general pediatric population. COVID-19 has been associated with various musculoskeletal symptoms including synovitis. Radiological assessment of these symptoms can contribute significantly in management of such patients. We report a case of transient synovitis of hip joint following COVID-19 infection in a 10-year-old boy with Hodgkins's lymphoma. He presented with fever and myalgia, found to be positive for COVID-19, managed conservatively. Two weeks later presented with right hip pain and limping. He was found to have restricted joint mobility and hip tenderness. Magnetic resonance imaging (MRI) pelvis was done which showed minimal right hip effusion and synovial thickening and enhancement. He was managed conservatively and recovered completely.

Keywords: Musculoskeletal manifestations, COVID-19, Transient synovitis, Hodgkin lymphoma

INTRODUCTION

Common causes of acute hip pain in children includes osteomyelitis, septic arthritis, bony metastasis, juvenile rheumatoid arthritis, Perthes disease (PD), slipped capital femoral epiphysis (SCFE) and transient synovitis (TS).[1] COVID-19 has been associated with musculoskeletal manifestations. With the report of possible association of SARS-CoV-2 infection with inflammatory syndromes in April 2020, more syndromes of Kawasaki disease, toxic shock syndrome, macrophage activation syndrome, secondary HLH were reported in children with COVID-19 infections.[2] Recently, joint involvements too have been noted to be a part of the spectrum and patients presented with acute arthritis, reactive arthritis and viral arthralgia.[3] Pediatric cancer patients are more commonly affected due to COVID-19 than general pediatric population. Overall, these patients have good outcomes.[4] We report a case of transient synovitis of hip joint following COVID-19 infection in a 10-year-old boy with Hodgkins lymphoma.

CASE REPORT

A 10-year-old boy diagnosed as Hodgkins's lymphoma stage III A, 10 days following his 2nd cycle of chemotherapy with Prednisolone, Adriamycin, Vincristine

and Etoposide, presented with fever and myalgia for one day. As it was a period of upsurge of COVID-19 cases during the 3rd wave, he was evaluated for the same and found to be COVID-19 RT PCR positive. Complete hemogram showed anemia (hemoglobin of 7 gms/dl) and neutropenia (total count of 800/cubic mm) which was thought to be secondary to chemotherapy. He was admitted and managed as febrile neutropenia with parenteral antibiotics and analgesics. There was clinical improvement in 72 hours with recovery of counts and hence was discharged. 2 weeks later he presented to us with difficulty in walking due to severe right hip joint pain radiating up to knee. Musculoskeletal examination revealed right hip joint tenderness and painful restriction of movements while other joints were normal. All his preliminary blood investigations were normal. MRI pelvis was done which showed minimal right hip effusion (Figure 1) and synovial thickening and enhancement (Figure 2), suggestive of TS. He was managed symptomatically with analgesics, adequate rest, physiotherapy and recovered completely after one week. He was continued on chemotherapy and currently in remission with no long-term complications.

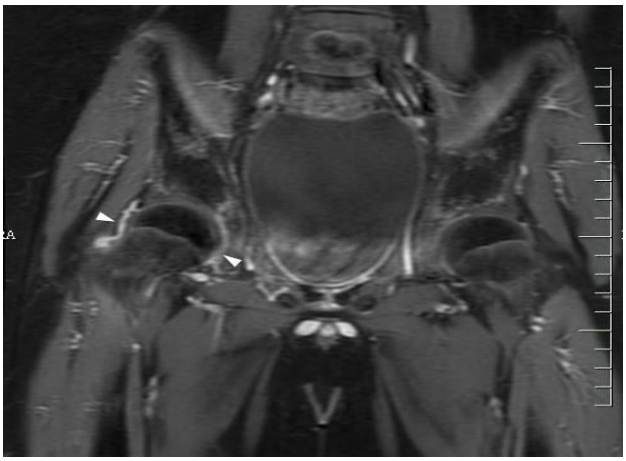

Figure 1: Coronal T2W (STIR) image of both hip joints shows mild right hip joint effusion.

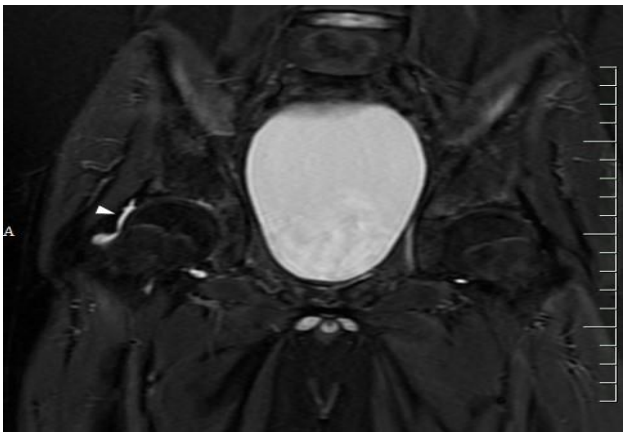

Figure 2: Post contrast coronal T1W - fat suppressed image shows enhancement of the right hip synovium.

DISCUSSION

Children with a painful hip present a diagnostic challenge since clinical differentiation between septic arthritis, TS and PD may be difficult. Septic arthritis, a potentially life-threatening medical emergency, requires early recognition for successful treatment, while TS and PD may be managed conservatively.

TS of the hip commonly presents as an acute unilateral condition affecting children mostly between 3 to 10 years. Males are more commonly affected than females. The spectrum ranges from nonspecific hip pain/subtle limp to a refusal to bear weight. A recent history of an upper respiratory tract infection is often elicited and favors a diagnosis of TS. TS is a diagnosis of exclusion.[5]

Musculoskeletal (MSK) manifestations occurred in about 20% of COVID-19 infections. Though MSK are earliest presenting symptoms of COVID-19, they have been less widely reported. MSK symptoms include fatigue, weakness, myalgia, back pain and joint pain. Myositis, synovitis and arthralgia are common manifestations.[6] Acute arthritis associated with COVID-19 infections are rare and only a handful of cases of COVID-19 induced arthritis in children have been reported.[7,8] MSK symptoms may manifest after the initial infection has resolved, either within few days or in weeks to months following the original infection.[9] In a study done by Bakilan et al, it was found that 72% of patients post COVID-19 infection reported fatigue, 71% of patients had spine pain while 61 % and 44% of patients had myalgia and arthralgia respectively.[10] It has been postulated that the pro inflammatory cytokines detected in COVID-19 have been found to be similar to rheumatoid arthritis. T cell activation, increased neutrophil reflux and high levels of IL-6, IL-1, IL-17, GM-CSF, TNF damages the synovial membrane.[11] The arthritis is reported 2-4 weeks after COVID-19 infection with knee and ankle joints involved predominantly and small joints of hands and feet, occasionally.

As the global experience with COVID-19 increases, it is becoming more widely recognized that MSK symptoms can lead to prolonged disability after recovery from the initial infection. Radiological assessment can contribute significantly to evaluate musculoskeletal involvement in children with or without previous rheumatic diseases due to COVID-19 but it has been rarely applied.[12]

CONCLUSION

The musculoskeletal symptoms associated with COVID-19 infections have been generally found to be acute and self-limited but with resurgence of COVID-19 infections and increasing spectrum of clinical manifestations, it is mandatory for the physicians to have high index of suspicion and have a cautious clinical judgement for the various symptoms noted in children who had COVID-19 infection in the past.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Eich GF, Superti-Furga A, Umbricht FS, Willi UV. The painful hip: evaluation of criteria for clinical decision-making. Eur J Pediatr. 1999;158(11):923-8.
2. Nakra NA, Blumberg DA, Herrera-Guerra A, Lakshminrusimha S. Multi-system inflammatory syndrome in children (MIS-C) following SARS-CoV-2 infection: review of clinical presentation, hypothetical pathogenesis, and proposed management. Children. 2020;7(7):69.
3. Wendling D, Verhoeven F, Chouk M. Can SARSCov-2 trigger reactive arthritis? Joint Bone Spine. 2021;88:105086.
4. Nicastro E, Verdoni L, Bettini LR, Zuin G, Balduzzi A, Montini G, et al. COVID-19 in Immunosuppressed Children. Front Pediatr. 2021;9:629240.
5. Hart JJ. Transient synovitis of the hip in children. Am Fam Physician. 1996;54(5):1587-91.
6. Giraudo C, Fichera G, Pilati L, Cortinovis AL, Cavallin C, Bertin S, et al. COVID-19 musculoskeletal involvement in children. Front Pediatr. 2023;11:1200877.
7. Dutta S, Dey S, Poddar A. Post-COVID Reactive Arthritis. Indian J Pediatr. 2022;89:103.
8. Garrido-Hidalgo A, Martínez GÁ. Probable transient hip synovitis due to COVID-19. Rev Mex Ortop Ped. 2021;23:36-9.
9. Swarnakar R, Jenifa S, Wadhwa S. Musculoskeletal complications in long COVID-19: A systematic review. World J Virol. 2022;11(6):485-95.
10. Bakılan F, Gökmen İG, Ortanca B, Uçan A, Eker Güvenç Ş, Şahin Mutlu F, et al. Musculoskeletal symptoms and related factors in postacute COVID-19 patients. Int J Clin Pract. 2021;75(11):e14734.
11. Schett G, Manger B, Simon D, Caporali R. COVID-19 revisiting inflammatory pathways of arthritis. Nat Rev Rheumatol. 2020;16(8):465-70.
12. Omar IM, Weaver JS, Samet JD, Serhal AM, Mar WA, Taljanovic MS. Musculoskeletal manifestations of COVID-19: currently described clinical symptoms and multimodality imaging findings. Radiographics. 2022;42:1415-32.

Cite this article as: Vishwanathan S, Bhurat R, Francis L, Murali A, Janarthanan M, Jayaraman D. Transient synovitis of hip joint following COVID-19 infection in a child with Hodgkins lymphoma. Int J Contemp Pediatr 2024;11:988-90.