International Journal of Contemporary Pediatrics
Kumar S et al. Int J Contemp Pediatr. 2025 Nov;12(11):1872-1874
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: https://dx.doi.org/10.18203/2349-3291.ijcp20253494

Case Report

Kawasaki disease with cavitary pulmonary nodules

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Received: 04 September 2025
Accepted: 08 October 2025

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ABSTRACT

Kawasaki disease (KD) is a systemic medium vessel vasculitis syndrome which usually affects the cardiovascular system, can rarely affect renal, respiratory, hepatobiliary, musculoskeletal and central nervous system. This is a report of a 3 years old girl who presented with all the clinical and biochemical features of Kawasaki disease with pulmonary involvement in the form of pulmonary nodules with cavitary changes and normal ECHO. As the child didn't improve with single dose of IvIg, she was treated with repeat dose of IvIg and steroid. Three months after discharge, her repeat CT Chest showed disappearance of all the pulmonary nodules with fibrosis. This case is reported for the very rare finding of cavitation in the pulmonary nodule with minimal changes in ECHO in KD. In children with prolonged fever and elevated inflammatory parameters, those with pulmonary nodules should be evaluated for KD after ruling out Tuberculosis.

Keywords: Kawasaki disease, Pulmonary nodules with cavitation

INTRODUCTION

KD is a systemic medium vessel vasculitis syndrome of unknown aetiology typically occurring in childhood. Classical KD is diagnosed in the presence of fever for a minimum of 5 days with at least 4 of the 5 principal clinical features which includes typical rash, strawberry tongue, conjunctivitis, peripheral oedema and unilateral cervical lymphadenopathy.[1] Apart from the cardiovascular system, KD can rarely affect renal, respiratory, hepatobiliary, musculoskeletal and central nervous system.[2-4] Authors report a 3 years old girl with all the clinical and biochemical features of Kawasaki disease with pulmonary involvement in the form of pulmonary nodules with cavitary changes, but only minimal changes on ECHO.

CASE REPORT

A 3 years old girl child was admitted with fever for 5 days, episodic abdominal pain on and off for 3 days and rashes all over the body from the 3rd day of fever. On examination she was sick, tired and dehydrated. The lips and tongue were red and there was a polymorphous rash all over the body. The conjunctivae were mildly congested and there was bilateral insignificant cervical lymphadenopathy. The temperature was 102.7 F, HR was 130/min and the BP was 96/56 mm/Hg. Systemic examination was normal. Initial investigations showed WBC:8220 with P84, L14. Platelets: 2.09 lakhs, Hb:12.3 gms, ESR 74 mm/hr, CRP:130 mg /dl. Urine examination, Chest X-ray, Ultrasound abdomen was normal. Blood was drawn for culture and she was started on Inj. ceftriaxone.

24 hours after admission, BCG reactivation was noted and there was a strawberry tongue. With elevated inflammatory markers, typical rash, and strawberry tongue. Kawasaki disease was considered; however, the ECHO showed normal coronaries. Blood culture was sterile on day 3. As the fever persisted, inflammatory markers were repeated which showed CRP: 161 mg/dl, ESR: 74 mm/hr, (S) sodium:128 mmol/dl, (s) Albumin :2.3 mg/dl with normal SGPT and Serum creatinine.

Repeat ECHO showed LMCA 3.1 mm (Z score:1.3), LAD 2.1 mm (Z score:0.22) and RCA 2.7 mm (Z score:1.85) which was normal even though the absolute diameter of LMCA suggested minimal dilation in the ECHO done on day 10th day of illness (>3 mm in <5 years old).[9,10] A diagnosis of Kawasaki disease was made and she was given IvIg (2 gms/ kg) and Aspirin 50 mg/kg/day. After an initial defervescence for 24 hours, she started spiking again, and now developed painful neck movements and cough. USG chest showed multifocal peripheral consolidation, while the neck showed bilateral non suppurative cervical lymphadenitis. Repeat inflammatory markers were elevated with increasing blood counts (WBC: 32,620; Platelets: 5,79,000; ESR:120).

In view of worsening symptoms, CT chest was done which showed multiple peripheral nodules of varying sizes, more on the right lung, few of them with small cavitary changes. Resting gastric juice for GeneXpert (TB) was negative. Hence IvIg resistant KD was considered and she was given another 2 gm/kg of IvIg with oral prednisolone 2 mg/kg/day for a week. She defervesced 24 hours after IvIg and subsequently remained afebrile. Repeat investigations done 5 days after 2nd dose of IvIg showed ESR:103 mm /hr (declining), CRP: negative, Platelet count: 684000/cu mm. Steroids were tapered over 3 weeks. Low dose aspirin (3 mg/kg/day) was started and she is now asymptomatic for 3 months. Repeat ECHO 15 days after IvIg showed normal coronaries. In the repeat CT chest done 3 months later, all the pulmonary nodules disappeared with fibrosis.

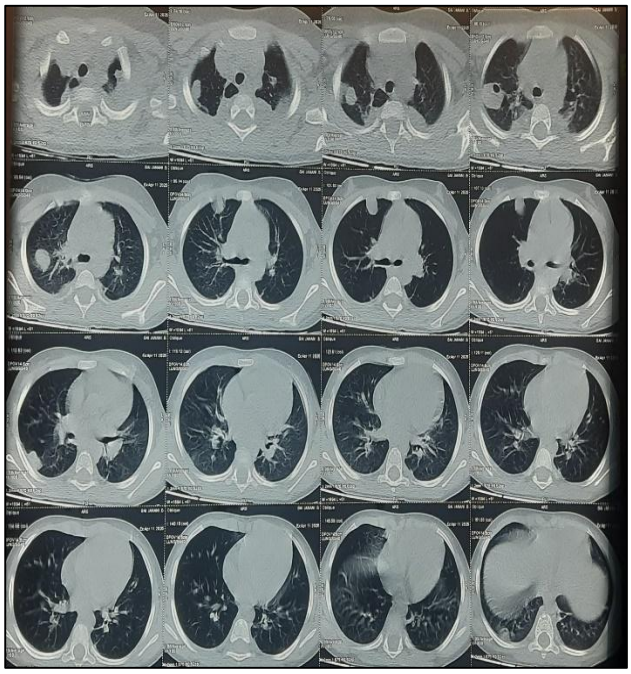

Figure 1: CT chest showing pulmonary nodules with cavitation (arrow).

DISCUSSION

Pulmonary involvement in patients with KD include pneumonia, hydropneumothorax, pleural effusion and pulmonary nodules.[5] Singhi et al reported that only 1.83% of children diagnosed with KD (11/602) had a predominant pulmonary presentation.[6] Only very few cases of pulmonary nodules have been reported in Paediatric literature and are usually diagnosed by CT chest. Biopsy done by Freeman et al showed predominantly mononuclear cell infiltration within the lung parenchyma and infiltrating the vessel walls.[7] Immunohistochemical studies for common leukocyte antigen showed marked inflammatory-cell infiltration of the lesions.[7] Cavitary changes of pulmonary nodules are even more rare in KD. This is the second case of lung nodule with cavitation in KD and the first one was reported by Akagi et al, Kentaro et al and Abe et al.[8] Almost all of the cases of pulmonary nodules reported so far had dilated coronaries. Our child did not develop coronary dilation as per Z scoring, even though the absolute diameter of LMCA suggested minimal dilation in the ECHO done on day 10th day of illness (> 3 mm in < 5 years old).[10]

CONCLUSION

This case is reported for the rarity of the finding of cavitation in the pulmonary nodule in KD. In the appropriate setting of prolonged fever and elevated inflammatory parameters, children with pulmonary nodules should be evaluated for KD after ruling out Tuberculosis.

ACKNOWLEDGEMENTS

Authors would like to thank Dr. Anu Kurian for helping in the collection of data.

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

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Cite this article as: Kumar S, Verghese RP, Mathai J. Kawasaki disease with cavitary pulmonary nodules. Int J Contemp Pediatr 2025;12:1872-4.