CASE REPORT

Kawasaki disease resembling acute colitis

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SUMMARY

This report presents a case of atypical Kawasaki disease (KD) in a 4-year-old boy developing with severe colitis accompanied by frequent diarrhoea and hypokalemic dehydration. Abdominal ultrasonography showed findings of left colon mucosal thickening and prominent dilatation of the colon. Antibiotic treatment was not effective. Some symptoms of KD appeared with progression of the illness. Intravenous immunoglobulin (IVIG) was administered based on a diagnosis of incomplete KD on the ninth day of the illness. The patient became afebrile soon after IVIG therapy. Diarrhoea and other symptoms dramatically subsided. The patient has recovered during the 3-month follow-up and repeated echocardiograms were normal.

BACKGROUND

Kawasaki disease (KD) sometimes shows an atypical clinical course, and clinicians have difficulty in timely diagnosis and treatment in such cases of KD. Treatment is necessary within the appropriate time, even for patients with incomplete KD, because of the risk of coronary artery lesions. Our case initially showed severe colitis and did not fulfil the diagnostic criteria, but intravenous immunoglobulin (IVIG) therapy succeeded. Incomplete KD, particularly with an atypical clinical course, is a diagnostic challenge and can be easily overlooked. Delayed diagnosis and treatment could lead to the development of coronary artery lesions. Acute colitis is a rare type of feature in KD and our case highlights the educational experience for atypical incomplete KD.

CASE PRESENTATION

A previously healthy 4-year-old boy was admitted to the hospital in May 2012, because of high fever and diarrhoea. He had developed high fever 4 days

before admission. He started experiencing vomiting, diarrhoea and a poor appetite 2 days before admission. The patient looked unwell at the time of admission (day 5 from the onset of fever). His body temperature was 38.9°C with a heart rate of 132/min. The abdomen was not distended, and was mildly tender in the right lower quadrant without guarding. No other abnormal finding was present on physical examination. The blood test results showed a C reactive protein concentration of 149.8 mg/l, white blood cell count of $25.2 \times 10^9/l$ (neutrophils, 92%), haemoglobin of 120 g/l, platelet count of $324 \times 10^9/l$ and alanine aminotransferase of 21 IU/l. Urine examination and culture study demonstrated sterile pyuria (30–50 white blood cells/high power field). Abdominal ultrasonography showed findings of left colon mucosal thickening consistent with acute colitis (figure 1A). A provisional diagnosis of acute bacterial colitis was made and intravenous antibiotics (ceftriaxone) were administered to the patient.

However, the patient's fever persisted, and he developed an erythematous rash on his trunk and bilateral non-exudative bulbar conjunctivitis on the second and third day after admission, respectively. He had frequent diarrhoea, namely more than 10 times a day, at 3 days after admission, thus resulting in hypokalaemia (serum potassium concentration; 2.3 mEq/l) requiring replacement with intravenous KCl. His abdomen was slightly distended. Repeated abdominal ultrasonography showed prominent dilation of the colon providing evidence of hypoperistalsis (figure 1B). His treatment with antibiotics was changed to fosfomycin and meropenem with no clinical improvement. Blood culture was negative for microorganisms. Stool cultures were negative for species of *Yersinia*, *Campylobacter*, *Salmonella* and *Escherichia coli* O157. Rotavirus and adenovirus

Figure 1 (A) Left colon mucosal thickening was seen on admission. (B) Three days after admission, prominent dilation of the colon developed.

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were not detected in stool. He developed a strawberry tongue on the sixth day after admission. The platelet count elevated from 324 to $507 \times 10^9/l$. The diagnosis was changed to atypical and incomplete KD without cervical lymphadenopathy and changes in the extremities, supported by its diagnostic algorithm.¹ The antibiotics were discontinued and IVIG (2 g/kg) was administered with aspirin (30 mg/kg/day). The patient became afebrile at the end of the 24-h IVIG infusion. Diarrhoea and other symptoms dramatically subsided. Periungual desquamation of the fingertips was noted on the 10th day after admission, confirming complete KD. The patient was discharged with a reduction of the aspirin dose.

OUTCOME AND FOLLOW-UP

The patient was last seen in August 2012, when he had no recurrence and his echocardiogram was normal.

DISCUSSION

KD is an acute systemic vasculitis of unknown cause.¹ Therapy should be administered within 10 days, ideally within 7 days, of fever onset.^{1 2} Approximately one in five affected children will develop coronary artery aneurysms without treatment.³ High-dose IVIG reduces the prevalence of coronary artery abnormalities.⁴ KD is a diagnostic challenge because the signs and symptoms are non-specific and often found in infectious diseases. A delayed clinical presentation meeting the criteria for KD makes it difficult to make an early diagnosis and provide appropriate treatment. Gastrointestinal symptoms including diarrhoea, vomiting and abdominal pain have been reported in 61% of patients in the early stage of the disease.² However, a manifestation of colitis is rarely seen at the diagnosis for KD. It is often difficult to differentiate acute colitis, such as *Yersinia* infection, from KD before the diagnosis of complete KD. Atypical or incomplete KD associated with a delayed diagnosis and treatment can lead to the development of coronary artery lesions.⁵ Therefore, the diagnosis of atypical or incomplete KD should be made as soon as possible to allow for

early treatment. Although the clinical presentation was hardly distinguishable from acute colitis in the current patient, an early diagnosis for atypical KD was made, and led to the administration of effective treatment. A more timely diagnosis and treatment of atypical or incomplete KD patients might further prevent the development of a fatal outcome.

Learning points

- ▶ Acute colitis is a possible feature of Kawasaki disease (KD).
- ▶ Timely diagnosis and treatment is necessary for KD, even for incomplete KD, to minimise the sequelae.
- ▶ The cause of KD is still unknown.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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