Reactivation of BCG scar as a useful tool in the diagnosis of Kawasaki’s disease: A case report

Adeola B Animasahun, FACC, FWACP, FMCPAED, Motunrayo O Adekunle, FWACP, Olusola Y Kusimo MBBS, MWACP

CASE REPORT

A 12-month-old boy who presented with an eight-day history of fever, a five-day history of bilateral redness of eyes and lips, a four-day history of a trunk rash and a two-day history of bilateral swelling and redness of the hands, feet and a right-sided painful neck swelling. Fever was high grade, continuous and only transiently relieved by analgesics administered at home. The patient was not associated with ear discharge or seizures. Bilateral painless redness of the eyes was noticed three days later with no associated eye discharge. There was no history of contact with anyone with red eyes or history suggestive of an upper respiratory tract infection.

Patient’s lips were also noticed to have become red and cracked with associated redness of the tongue which resolved before presentation. There was no associated history of bleeding from any other sites, snoring or drooling. He developed a rash involving the trunk and groin region described as reddish with no associated pruritus. There was no history of contact with anyone with a similar rash and rash resolved prior to presentation at our centre.

Bilateral painful swelling and redness of the hands and feet was noticed two days prior to presentation. Painful right sided neck swelling was noticed at about the same time. The swelling did not progressively increase in size but had resolved about two days prior to presentation at our facility. He presented in a private hospital about six days after onset of the symptoms and was admitted, commenced on intravenous ceftixime and antimalarial with no improvement. This prompted a self-referral by parents to our Paediatric Emergency department. His immunization was said to be complete for age according to the National programme on Immunization schedule and BCG scar was sighted.

On presentation, he was irritable but consolable, not in any obvious distress, febrile with temperature of 39.2 degrees Celsius, he had reddened, cracked and desquamating lips as well as redness of the oro-pharynx. Redness of the tongue, bilateral conjunctivitis and desquamation around the perianal region has disappeared at presentation in our center. A diagnosis of a viral exanthem with possibility of Kawasaki disease was considered. However, Crusting and hypopigmentation with some erythema around the BCG scar was later sighted the following day after admission and this further strengthened the possibility of a Kawasaki disease. He later developed periungual desquamation while he was on admission (Figure 2).

Investigations revealed mild anemia with a packed cell volume of 28%, leukocytosis of 17000/L, thrombocytosis with platelets count as high as 540,000/L, an elevated CRP of 166 mg/L with ESR of 121 mm/h and a positive positive anti-nuclear antibody. Radiographs of the hands and feet showed mild clubbing with some periungual desquamation. His echocardiogram revealed normal cardiac chambers, mild valve calcification and mild aortic regurgitation. His ECG showed sinus tachycardia with isolated ST elevation in the lead V1 and V2. The patient was treated with intravenous methylprednisolone, intravenous immunoglobulin and early institution of treatment for Kawasaki disease with intravenous immunoglobulin and early institution of treatment for Kawasaki disease with intravenous immunoglobulin and early institution of treatment for Kawasaki disease.

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575,000/L by the third week of illness. Erythrocyte sedimentation rate was also rose to 131mm/hour by the third week of illness, serum albumin was 28g/L and genotype was found to be AA. Serum C3 and C4 and liver function tests were normal. Echocardiography done showed a structurally normal heart.

Intravenous immunoglobulin was administered at 2g/kg and he also received high dose Aspirin at 80mg/kg, which was reduced to 2mg/kg forty-eight hours after the fever had subsided. He had remarkable relief of symptoms before he was discharged.

**DISCUSSION**

Kawasaki disease, especially the non-classical form, poses a diagnostic dilemma and at times, not all clinical features required to make the diagnosis are present at the same time (6). In this present case, bilateral redness of the eyes, redness of tongue, a swelling on the cervical region (possibly lymphadenopathy) and desquamation of the skin around the perianal region had disappeared prior to presentation. The manifestation of periungual desquamation later on admission is also in keeping with reported sequential manifestation of symptoms that can occur in Kawasaki disease (6) (Figure 3).

Bacille Calmette-Guerin inoculation scar involvement in Kawasaki disease has been described as crusting, erythema, indurations and even ulceration of a previously otherwise normal BCG scar site (4). This reaction of BCG scar in Kawasaki is possibly due to cross reactivity between Mycobacterial and Human Homologue Heat Shock Protein (5). It occurs in 30 to 50% cases of Kawasaki disease with a higher prevalence than cervical lymphadenopathy and rash (4). This was a useful finding in this present case where cervical lymphadenopathy and rash were absent at presentation. Crusting with some erythema localized to the area of the BCG scar was a key feature that strengthened the diagnosis of Kawasaki disease in the case reported.

The index patient has been followed up for six months so far. Further follow up is still continued. Possible heart/ coronary manifestation of Kawasaki disease are; congestive heart failure, left ventricular dysfunction, myocarditis, pericarditis, valvular regurgitation (aortic and mitral), aortic root dilatation, coronary artery abnormalities including aneurysms of medium-size non coronary arteries. Coronary artery aneurysm is the gravest and most important complication of Kawasaki disease (7).

**CONCLUSION**

Kawasaki disease is clinically diagnosed and has an increased mortality in cases with coronary involvement and delay in the institution of therapy. There is often a diagnostic dilemma especially in incomplete cases where heart involvement can also occur. Reactivation of BCG scar is of benefit in making a diagnosis of Kawasaki disease especially in places where BCG vaccination is part of the National Immunization Program.

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**DISCLOSURES**

None.

**ETHICAL DISCLOSURES**

Informed and written consent were obtained from the parent of this reported case. The necessary institutional protocols on the publication of the data were duly followed.

**CONFLICT OF INTEREST**

No conflict of interest among the authors.

**REFERENCES**