Acute parvovirus B19 infection diagnosed by bone marrow biopsy

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DESCRIPTION

A 57-year-old woman with a history of multiple sclerosis on glatiramer acetate presented with atypical chest pain and was noted to have worsening pancytopenia (haemoglobin 108 g/L, white blood cell (WBC) $1.0 \times 10^9/L$, platelets $58 \times 10^9/L$). Cardiac workup including cardiac catheterisation was unremarkable. She had chronic pancytopenia (baseline haemoglobin 116 g/L, WBC $2.3 \times 10^9/L$, platelets $81 \times 10^9/L$) identified over 10 years ago with previous workup negative for primary haematological disorder, felt to be secondary to malabsorption related to gastric bypass along with bone marrow (BM) suppression due to glatiramer. Reticulocyte count was 0.3 (normal 0.5%–2.5%). It was inappropriately low to the degree of anaemia suggesting BM suppression. Peripheral smear exam did not show any findings suggestive of haemolysis. Given worsening pancytopenias, a BM examination was done. The BM demonstrated hypercellularity (50%) with decreased erythroid lineage and markedly enlarged erythroblasts, with virus inclusions (figure 1). Immunostain for capsid protein of human parvovirus B19 was positive (figure 2). Antiparvovirus B19 IgM and IgG were positive (11.89 and 3.39; positive index 1.11) by enzyme immunoassay, and qualitative PCR detected DNA for parvovirus B19. Seroconversion was seen 8 weeks later with antiparvovirus B19 IgM and IgG were 1.18 and 5.66, respectively. Parvovirus B19 is a small single-stranded DNA virus and selectively replicates in erythroid precursors in BM or peripheral blood causing transient or permanent suppression of erythropoiesis.¹ These patients will develop chronic anaemia, pure red cell aplasia or, less often, leucopenia and thrombocytopenia. Although the classic BM findings have been described, they can easily

Figure 1 Bone marrow aspirate showing parvovirus B19 infecting erythroid precursors.

Figure 2 Immunostain highlights the capsid protein of human parvovirus B19 in the erythroid precursors.

Learning points

- ▶ Parvovirus B19 is a rare but known cause of pancytopenia. It is usually seen in immunocompromised patients.
- ▶ Anecdotal data from rare case reports have shown some benefit by treating with intravenous immunoglobulin infusions.

be overlooked, leading to delayed therapy.^{2 3} Our patient's pancytopenia gradually improved to baseline with intravenous immunoglobulin infusions.

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