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CLINICAL IMAGE

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Human parvovirus B19 infection in an immunocompromised host

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Abstract

Serologic testing may be negative in immunocompromised hosts due to inadequate IgG and IgM response. The classic bone marrow findings of viral inclusions and giant proerythroblasts are pathognomonic for active infection and should prompt initiation of therapy regardless of serologic results.

KEYWORDS

bone marrow morphology, diagnosis, parvovirus B19 infection, treatment

1 | CASE

A 33-year-old male, presented with nausea, vomiting, diarrhea, and 34 lb. weight loss of 1-month duration. Pertinent laboratory results included anemia (hemoglobin 6.8 g/dL), leukopenia (WBC 1.65 K/μL), elevated LDH (402 IU/mL), and haptoglobin (232 mg/dL). Imaging studies showed diffuse reticulonodular opacities throughout both lungs and multiple, soft tissue nodules, suggestive of infectious/inflammatory process.

Bone marrow (BM) biopsy (see Figure 1) showed findings characteristic of parvovirus infection. Serological studies (parvovirus IgG and IgM) were negative but quantitative PCR (qPCR) revealed parvovirus B19 DNA (>1.38E + 10 IU/mL). Patient tested positive for HIV-1 and 2 antibodies, and histoplasma antigen in the urine. FNA of the lung lesions and biopsy of the skin nodules revealed disseminated histoplasmosis, although BM was negative.

Parvovirus B19 selectively replicates in erythroid precursors. Immunocompetent individuals typically clear the virus in 2-3 weeks and manifest transient anemia. In contrast, permanent suppression of erythropoiesis may occur in immunocompromised individuals, causing chronic anemia, pure red cell aplasia, and pancytopenia.[1] Serologic testing may be negative due to inadequate antibody response, requiring qPCR to demonstrate viral DNA. These studies are performed in referral laboratories, causing a delay in diagnosis. The classic BM findings are pathognomonic for active infection and aid in early treatment initiation.

CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

This is a single author contribution and I have made all contributions to the manuscript.

ETHICAL APPROVAL

Publication of this report is exempt from full review by the Institutional Review Board (IRB) of the University of Arkansas for Medical Sciences as single case reports do not require IRB review by this institution. Patient anonymity has been preserved.

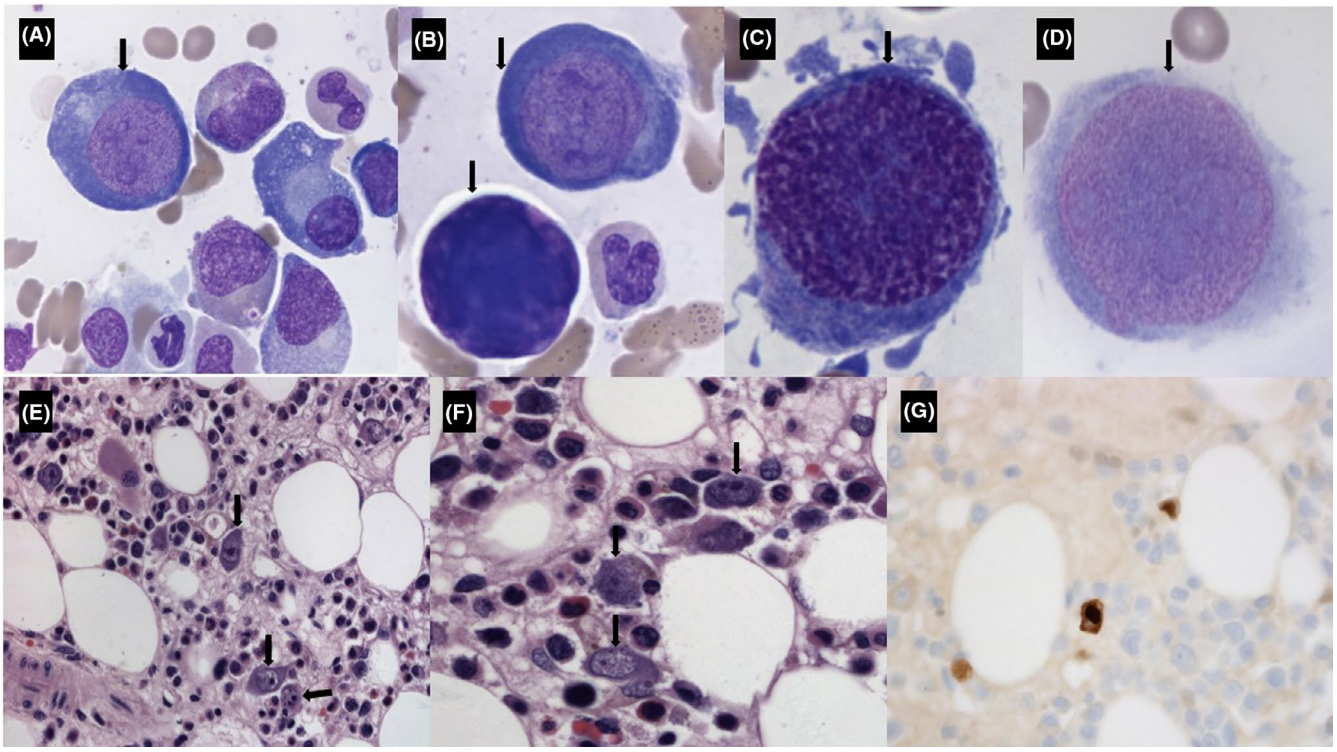

FIGURE 1 BM aspirate (A-D, ×1000) and biopsy sections (E-G, ×400) revealed marked erythroid hypoplasia and scattered giant proerythroblasts (arrows) with viral inclusions, and varying stages of cytoplasmic dissolution; positive for parvovirus stain (G), CD117 and CD71 (not shown)

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