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Case illustrated

Phagocytized *Candida albicans* in the peripheral blood smear of a girl with Crohn disease

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A 4-year-old girl with Crohn disease (CD) was repeatedly hospitalized for exacerbation of CD. She was treated with oral tacrolimus, prednisolone, methotrexate, and 6-mercaptopurine. Additionally, total parenteral nutrition was administered through a central venous catheter (CVC). After four months from the CVC was placed, she developed a fever of 39.3 °C, hypotension (84/42 mmHg), sinus tachycardia (160 beats/min), and tachypnea (40 breaths/min) during hospitalization. Her general appearance was unwell without other remarkable findings. Laboratory data showed a leukocyte count of 4,700/μL (band neutrophils 13%, segmented neutrophils 70%, lymphocytes 12%, monocytes 4.5%, eosinophils 0.5%, and erythroblasts 1.0%), thrombocytopenia (platelet count 100,200/μL), and an increased C-reactive protein level (11.8 mg/dL). Vancomycin and meropenem were empirically administered for sepsis, including a catheter-related bloodstream infection (CRBSI), after two sets of blood cultures were obtained. The next morning, results of a peripheral blood smear (PBS) showed yeast cells phagocytized by leukocytes (Fig. 1). Therefore, micafungin was immediately administered, and the CVC was removed. The blood cultures grew *Candida albicans* after a two-day incubation, and a culture obtained from the CVC grew *C. albicans*. A diagnosis of CRBSI due to *C. albicans* was made. Subsequently, fluconazole was administered instead of micafungin because bilateral endophthalmitis was detected by an ophthalmologist. Fluconazole was continued for 12 weeks until complete resolution of endophthalmitis. She recovered without any visual disturbance.

Candidemia has been reported as the third or fourth most common nosocomial bloodstream infection. The mortality rate of candidemia is high (up to 47%) [1], and it is even higher in patients with PBS-diagnosed candidemia (53.6%) [2]. The early detection of yeast fungemia is difficult, because blood cultures require 2 or 3 days to grow [3]. Furthermore, delayed antifungal therapy can increase mortality [4]. Although the sensitivity of a routine PBS is insufficient [3], it may be useful for the early detection of

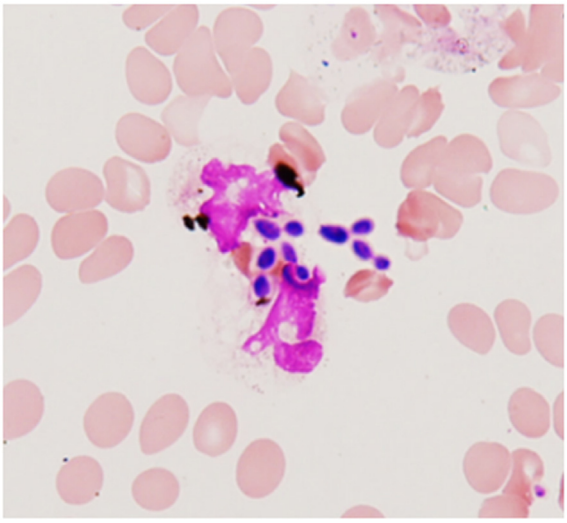

Fig. 1. Peripheral blood smear results. Yeast cells phagocytized by leukocytes are observed (May-Giemsa stain, × 1000 magnification).

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candidemia before blood cultures become positive. The detection of yeast fungi in a PBS is considered a medical emergency. Therefore, it is important for clinicians to cooperate with laboratory staff to detect candidemia early.

Conflicts of interest

None.

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