Sir,

Candida species are the most common causes of fungal infection primarily affecting immunocompromised patients within a hospital setting. Areas with highest rates of candidaemia include ICUs, surgical units, trauma units and neonatal ICUs. Epidemiological data indicates that at least 10 – 12% of all nosocomial infections and 8 – 15% of all nosocomial blood stream infections are caused by Candida. Non-albicans Candida have also become an increasing problem in ICUs, attributed to the widespread use of fluconazole in Neutropenic patients.

Risk factors for Candida blood stream infections include – broad spectrum antibiotics, chemotherapy, corticosteroids, intravascular catheters, receipt of total parenteral nutrition, recent surgery, hospitalisation in ICU, malignancy, neutropenia and fungal colonisation. The most important risk factor for invasive candidiasis is prolonged stay in the ICU.

We report here the detection of Candida albicans from non-neutropenic patient with interstitial lung disease, being treated with corticosteroids, antibiotics, total parenteral nutrition and admitted in ICU.

A 69 year old man, admitted to ICU presented with complaints of vomiting since two weeks and a few episodes of haematemesis and haematuria. He had previous history of interstitial lung disease and coronary artery disease since 4 years, as well as an episode of cerebral vascular occlusion, ten years ago. The patient was afebrile, with pulse at 120/ min, blood pressure 110/70 mm hg, respiratory rate 28/min. On auscultation bilateral coarse crepitations were present.

Laboratory studies showed white blood cell count of 10,580/uL, haemoglobin 11.6 gm/dl and platelets 211,000/uL. Five days after admission into ICU, he complained of diarrhoea. The blood samples were taken for lab screening. White cell count was 4290/uL, haemoglobin 11.1 g/dl and platelets 60,000/uL. Microscopic counting of 200 white blood cells showed the following values – metamyelocyte 1%, Neutrophils 91%, lymphocytes 4%, monocytes 3%, eosinophils 1%. The Leishman stained smears showed few intra and extra leucocytic yeast cells (Figure 1). Red blood cells were microcytic and hypochromic (MCV – 80.8 fl and MCHC 31.4%).

The patient was diagnosed with candidaemia before blood culture. Blood
samples from peripheral line and central line catheters were sent for blood culture and I.V. Caspofungin was started the same day. Candida albicans grew from the blood culture sent from the peripheral line and the central line catheter, within 48 hours and after 72 hours respectively. The patient responded well to the treatment with rising platelet counts.

The diagnosis of candidaemia is rarely made by peripheral blood smear because the pathogen is usually too small for visual detection. It requires at least 1 x 10^5 CFU/ml of yeast which is clinically unusual. In our case very few fungal elements existed both intra-leucocytic and extra-leucocytic. Budding yeast on peripheral blood film are considered a contaminant, whereas their intracytoplasmic presence in neutrophils or monocytes should be indicative of pathological nature of the findings.

It was reported that in vitro phagocytosis of yeast might occur after one hour incubation at 37 degrees centigrade. However the blood smear samples were prepared immediately after taking the patients blood without incubation at our institute. In other reports, fungi were also phagocytosed either by neutrophils in case of candida species and P. marneffei, or by monocytes in case of Histoplasma species, Cryptococcus species and P. marneffei. Moreover in Candida infected tissues the primary inflammatory cells seen and microabcesses were formed.

Candidaemia is associated with high crude mortality rate ranging from 30% to 81%. C. glabrata and C. albicans account for 70 – 80% of yeast isolated in patients with invasive candidiasis. C. glabrata has become important because of its increasing worldwide incidence and because it is intrinsically less susceptible to azoles and amphotericin B. Two uncommon Candida species C. lusitaniae and C krusei are clinically significant because of its intrinsic resistance to fluconazole and decreased susceptibility to all other antifungals including amphotericin B.

We conclude that careful observation of peripheral blood smear is important for the early detection and management of fungal infections. The intra-cytoplasmic presence of budding yeasts in neutrophils or monocytes should be indicative of pathological nature of the findings.

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References