HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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Megakaryocytes in pulmonary circulation: an "old" knowledge with new implications

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The *post-mortem* pulmonary findings of a 59-year-old woman with infection by the human immunodeficiency virus and liver cirrhosis related to chronic hepatitis B are presented.

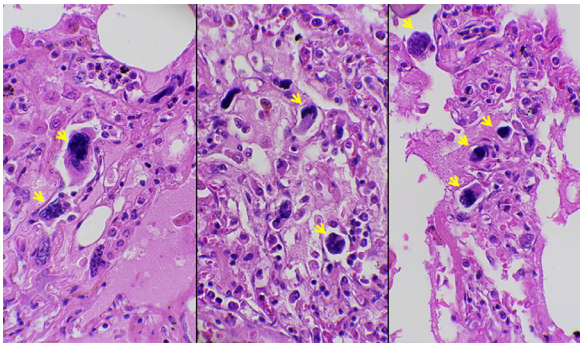

Figure 1 – Multiple megakaryocytes (arrows) identified in the pulmonary circulation (Hematoxylin and Eosin staining, 400 × magnification).

The patient was admitted due to decompensated liver disease and initial laboratory data revealed anemia (hemoglobin concentration 8.8 g/dL), leukocytosis (12×10^6/L) and normal platelet count (399×10^9/L). The patient was receiving prolonged highly active antiretroviral therapy. No treatment directed at chronic hepatitis B, tuberculosis or anti-cancer therapy has been administered.

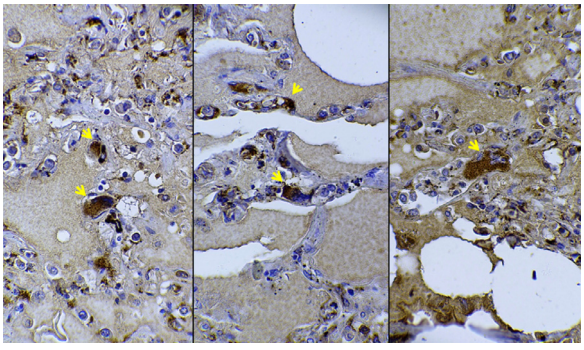

Figure 2 – Immunohistochemistry analysis for confirmation of megakaryocytes (arrows) in lungs. Factor VIII-related antigen stain. CD61 immunohistochemistry was also positive on megakaryocytes (not shown). 400 × magnification.

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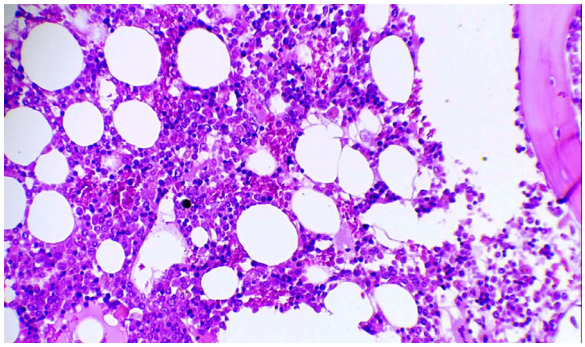

Figure 3 – Bone marrow biopsy shows normal global cellularity (granulocytic hypoplasia and erythroid hyperplasia) and normal megakaryocyte cellularity (2.8 megakaryocytes per high-power field [× 400] – normal range 2 to 4 per high-power field). There is no evidence of cancer infiltration, granulomas, or mycoses (Hematoxylin and Eosin staining, 200 × magnification).

In *post-mortem* study, hemoperitoneum was identified as the immediate cause of death in association with active pulmonary tuberculosis and hepatitis B virus-associated hepatocarcinoma (TNM Staging System – IVB). Numerous megakaryocytes were detected in pulmonary circulation (Figures 1 and 2). In bone marrow evaluation, mycobacterial or fungal infections as well as cancer infiltration were not detected (Figure 3). The evidence of thrombopoiesis in lungs is not recent and innovative experiments indicate that up to half of platelet production may originate from megakaryocytes located in the pulmonary circulation.[1,2,3]

Conflicts of interest

The authors declare no conflicts of interest.

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