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LETTER TO EDITOR

The circulating cells with blast-like morphology in transient abnormal myelopoiesis of Down syndrome are unique and deserve a specific name: Would the term "megakaryogones" serve this purpose?

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To the Editor,

A newborn girl, born prematurely at 35 weeks gestation, was transferred to the special care unit soon after birth due to respiratory distress. Physical examination raised the possibility of Down syndrome. At birth, CBC showed WBC= 33.3 K/μL, RBC= 5.7 million/μL, Hb=19.5 g/dL and Platelet Count= 1,009 K/μL. Immature erythroid and myeloid cells, including blasts were present on the peripheral blood smear (PBS). Blasts constituted 30 percent of WBC, and most appeared non-descript, however some demonstrated cytoplasmic blebs and peripheral shedding of platelet-like structures (Figure, A, B, C and D- arrowheads). Cell marker study by flow cytometry revealed these blasts expressing CD45 (dim), CD34, CD117, CD7, CD38, CD41, CD56 and CD71. The diagnosis of transient abnormal myelopoiesis (TAM) of Down syndrome was suspected and chromosome analysis confirmed trisomy 21 with no other chromosomal abnormalities. The patient was provided supportive care with gradual clinical improvement leading to discharge within one week. During the hospital course, serial CBCs showed WBC, blast, and platelet counts peaking on day 6 of life

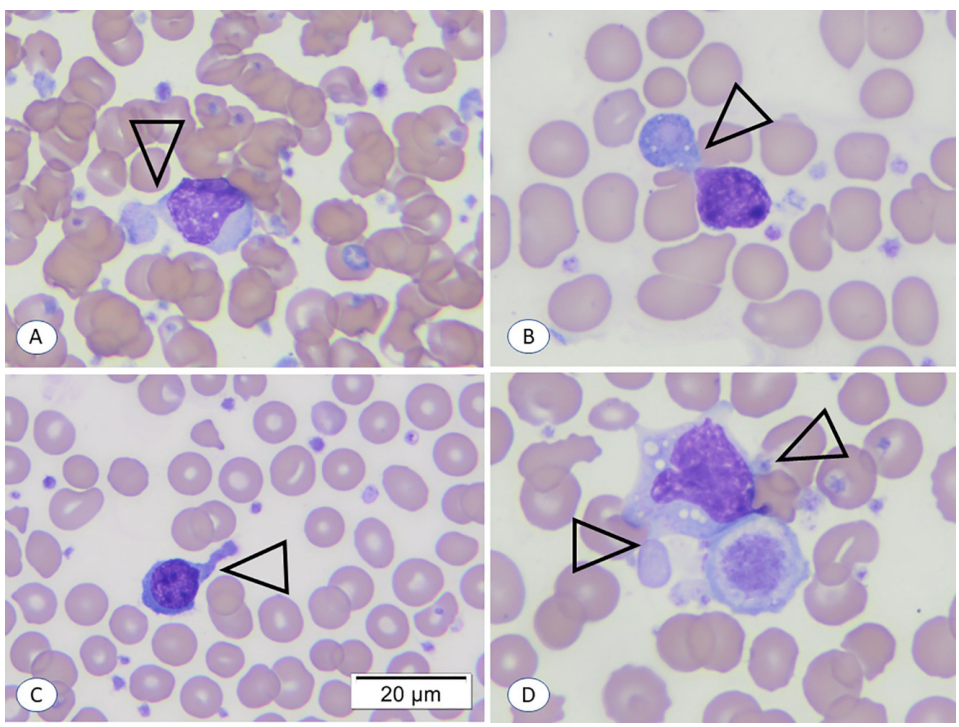

FIG. 1: A composite of photomicrographs taken from Giemsa-stained peripheral blood smear showing circulating blast-like "megakaryogones" showing immature cells with budding platelet-like cytoplasmic structures (A, B, C and D- arrowheads) (Magnification 100x oil).

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(WBC and platelet count reaching close to 50 K/μL and 2 million/μL, respectively) then declining in synchrony to normal ranges on day 15.

New insights into megakaryocyte differentiation from progenitor cells suggest that this process does not occur in a stepwise fashion.[1] A report on factors influencing resolution of TAM found a correlation between platelet count and blast percentage at diagnosis and thus hypothesised that platelets are produced by circulating "megakaryoblasts".[2] Findings in this case - as illustrated here - support this hypothesis. Of note, platelet production is a known function of "mature" megakaryocytes (not blasts). Furthermore, labelling these circulating platelet-generating progenitors as "Blasts" or "Megakaryoblasts" implies a true and irreversibly neoplastic nature, which is not the course in most cases, and hence, these terms are not precise. Considering the unique nature of these immature platelet producing cells, including a spectrum of megakaryoblast/megakaryocyte-like morphology and immunophenotype, megakaryocyte-like ability to produce platelets, yet a predominantly self-limited nature, a new term may be needed for their designation.

While acknowledging significant differences, a similar overlap between B-lymphoblasts and transient blast-like regenerating cells is a well-known phenomenon that necessitated coining the term "hematogones" to describe the latter cells. The circulating blast-like platelet-producing cells of TAM deserve an equal consideration along the lines of similar creative logic. A new term -such as "Megakaryogones"- while admittedly not perfect, may be considered as a discussion starter!

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