DI GUGLIELMO SYNDROME *

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Di Guglielmo syndrome is a rare malignant condition. The condition is characterised clinically by irregular fever, progressive anemia, hepatosplenomegaly and haemorrhagic diathesis, and haematologically by the presence of erythroblasts in the blood, hyperplasia of the marrow with maturation arrest and proliferation of the reticulo-endothelial system. Two variants of the disease are recognised based on the clinical course and the presence of primitive cell types. The first one runs a fulminating course with erythraemia of the relatively more immature forms of erythroblasts. The second variety takes a chronic course and shows more nature forms of erythroblasts. The cells contain intracytoplasmic PAS positive granules and the finding is of diagnostic help. The rarity of the disease in childhood and the difficulty in its diagnosis have prompted us to report this case.

Report of a Case

B. K., a girl aged 5 months, was hospitalised in October, 1968, for distension of the abdomen, irregular fever and severe anemia of two months' duration. Physical examination revealed generalised lymphadenopathy, hepatomegaly, massive splenomegaly and ascites. Blood examination showed hemoglobin 5.5 G%, erythrocyte count 2.2 million/c.mm., leucocytes 14,200/c.mm., myeloblasts 1%, promyelocytes 3%, myelocytes 8%, metamyelocytes 10%, neutrophils 52%, eosinophils 6%, lymphocytes 12%, monocytes 6%, basophils 2%. The differential immature erythrocytic count was, normoblasts 65%, pronormoblasts 32%, megaloblasts 3%. A peripheral smear showed severe hypochromia, polychromasia, anisocytosis and poikilocytosis, Cabot's rings, basophilic stippling, Howell-Jolly bodies, with immature cells of the erythrocytic and leucocytic series. A marrow aspirate was hypercellular with marked erythroid and myeloid hyperplasia (Fig. 1). of the erythroid series, the predominant cell was the normoblast and of the myeloid series the metamyelocyte. Besides, there were giant myelocytes and megaloblasts. Megakaryocytes appeared to be within normal limits. The baby was maintained on oral corticosteroids and blood transfusion. The child's progress was unsatisfactory and she expired after 9 days.

Post-mortem Report

The child was extremely pale with blood-stained fluid oozing from the nostrils. Generalised lymphadenopathy was noted. There was hep-
tomegaly and massive splenomegaly. The serous cavities contained blood-stained fluid with the presence of blood clots in the peritoneal cavity. The heart was normal on gross examination. Microscopically, it showed plugging of the capillaries of the myocardium with immature cells of the erythroid and myeloid series. The lungs were pale and edematous with areas of hemorrhage and collapse. Histologically, the capillaries were studded with these cells (Fig. 2). The liver weighed 650 G. and showed marked congestion. Microscopically, the central veins, sinusoids and portal vessels were filled with cells of a similar nature. The spleen weighed 850 G. and showed perisplenitis. Capsular thickening, loss of architecture, due to disappearance of the Malpighian bodies with a stream of immature cells in the sinusoids and the medulla were noticed microscopically. The brain, kidneys, adrenals and other tissues appeared grossly to be normal but revealed infiltration with immature cells in their vascular channels. Lymphnodes had cellular infiltrates of a similar nature. The bone marrow exhibited erythroaemic myelosis.

**Discussion**

The disease was identified by Copelli in 1912 and described in detail by Di Guglielmo in 1923. Since then many case reports were recorded by various authors. Inspite of these, confusion exists about the criteria of diagnosis. These are, severe anemia at onset of the illness, irregular, usually remitting fever, splenomegaly, slight hepatomegaly, an acute course of one to two months ending fatally, invariably erythroblasts, atypical and immature, in the peripheral blood, hyperplasia of erythropoiesis with maturation arrest, and proliferation of the reticulo-endothelial system.

The basic nature of the disease remained obscure in spite of several reports. Some workers believe this to be a severe marrow reaction, while others consider it as a hepato-lienal affection seen in various infections. It has also been postulated to be the terminal event of polycythemia. Most of the authors now regard this syndrome as a systemic disorder corresponding to leukemia. This condition is refractory to treatment and this is explainable on the basis of ineffective erythropoiesis.

Abnormalities in iron metabolism as well as hemoglobin-H like precipitates in the erythrocytes and the presence of an increased quantity of Hb F, suggested defective hemoglobin synthesis. Defects in the activity of enzymes involved in haem biosynthesis have been recorded. Nechles and Dameshek (1967) summarised the current view regarding the syndrome, “the variability of the biochemical, cytochemical and clinical manifestation of this syndrome all suggest that it may consist of a group of related diseases, all secondary to various acquired and probably neoplastic disturbances in proliferation and differentiation within the erythroid series”. The case presented above had a fatal termination after a short clinical course, which resembled a neoplastic process.

**Summary**

An atypical fatal case of Di Guglielmo syndrome is presented, with