

## **BRIEF NOTE**

### **Acute Promyelocytic Leukemia?**

By JACOBO GHITIS

**R**ECENTLY, a patient was admitted to our Hospital who presented a clinicopathologic picture of acute leukemia with unusual cytologic features. There were no blast forms seen in the peripheral blood smear and aspiration specimens of the bone marrow showed almost all the cells to be promyelocytes.

A search of the literature revealed scarce information on this type of leukemia.

#### **CASE REPORT**

Briefly, the important clinical findings were as follows: A 10 year old white girl, acutely ill, febrile and showing disseminated skin purpura. There was no visceromegaly. The disease had apparently started 3 weeks before, with epistaxis and other purpuric manifestations.

Laboratory findings showed severe anemia and thrombocytopenia with a leukocyte count of 3500 per cu. mm. The differential count showed marked neutropenia with 3 promyelocytes per cent. Two bone marrow aspirates yielded hypocellular specimens. No blasts were seen but 98 per cent of the cells were promyelocytes (fig. 1). Those cells showed characteristics of both myelocytes and promyelocytes and could be considered as intermediate between the two "stages."

On the fourth day the WBC was 900 per cu. mm. Again blasts were not seen in the blood smear, but the promyelocytes had increased to 48 per cent. The bleeding manifestations had worsened, despite intravenously administered prednisolone, and the patient died on the fifth day of hospitalization.

The necropsy findings were briefly as follows. Numerous hemorrhages and leukemic infiltrates were present in several viscerae. The bone marrow was hypercellular and showed a predominance of two cell types, which were tentatively classified as myelocytes and, probably, myeloblasts.

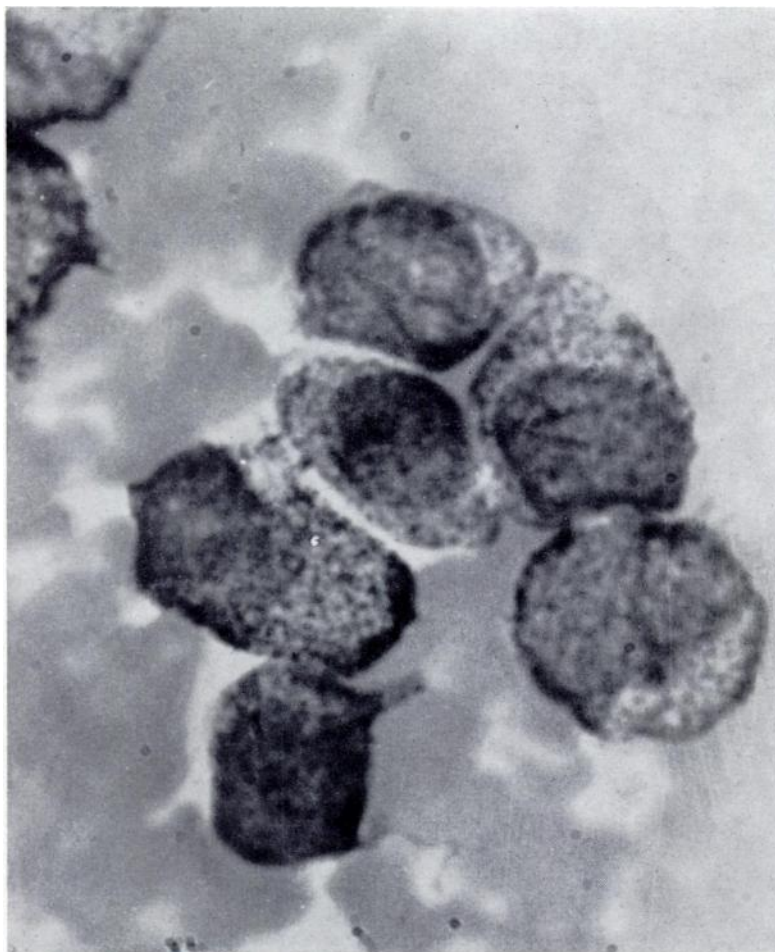
#### **COMMENTS**

In 1957 Hillestad<sup>1</sup> reported three cases of "a special type of acute myelogenous leukemia characterized by a very rapid downhill course, due to severe bleeding tendency, caused mainly by fibrinolysis." The bone marrow smears showed a preponderance of promyelocytes. The peripheral blood films showed up to 79 per cent promyelocytes and up to 38 per cent myelocytes, with only a "few" blasts. Corticosteroid therapy was the only treatment given. The patients died from 19 to 23 days after the apparent initiation of the disease; two of cerebral hemorrhage and the other of uterine bleeding. Besides

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**Fig. 1.**—Photomicrograph of bone marrow smear showing a group of promyelocytes.

thrombocytopenia there was a decrease in the blood fibrinogen (and other clotting factors) with increased fibrinolytic activity in the two patients tested.

Hillestad noted that he had seen three additional cases of acute leukemia with similar morphologic features among 24 cases of acute myelogenous leukemia. He suggested that abnormal fibrinolysis is characteristic of this type of leukemia. He considered this condition as being the most malignant form of acute leukemia and proposed the designation of "acute promyelocytic leukemia."

Cooperberg and Neiman<sup>2</sup> in 1955 reported a case of acute myelogenous leukemia with fibrinolysis. Although the blood smear was not described, the bone marrow showed a "marked infiltration by myelocytes and promyelocytes, indicating acute myelogenous leukemia." The patient died 1 month later of cerebral hemorrhage.

Hillestad was probably the first to define this type of leukemia as a distinct clinical entity, "characterized by 1) a very rapid fatal course of only a few weeks duration, 2) a white blood cell picture dominated by promyelocytes and 3) a severe bleeding tendency due to fibrinolysis and thrombocytopenia."

Hoveid<sup>3</sup> reported in 1959 a patient with promyelocytic leukemia who lived 1 year after the diagnosis was made. Remission was obtained with Purinethol and cortisone. This patient developed an aseptic (leukemic) meningitis that responded to intraspinal hydrocortisone.

In 1959, Bernard et al.<sup>4</sup> reported 20 patients observed by his group in the past 2 years. Promyelocytes comprised 25 to 100 per cent of the bone marrow cells. Fibrinolysis was accelerated in all cases. Only one patient had a short remission with 6-mercaptopurine and steroids. The clinical course was rapidly fatal with hemorrhagic complications. The necropsy findings of these patients were typical of acute leukemia; however, it was not possible by histologic examination to recognize the cells as promyelocytes. This impressive number of cases from one clinic indicates the probability that this entity is not presently being recognized generally.

#### SUMMARY

A case of promyelocytic leukemia is presented. It was characterized by 1) a clinical picture of acute leukemia, 2) predominance of promyelocytes in the bone marrow smear, 3) predominance of promyelocytes (as the abnormal leukocyte) in the peripheral blood, 4) a rapidly fatal course and 5) necropsy findings of acute myelogenous leukemia. Unfortunately, the patient died before plasma fibrinogen and other clotting factors could be determined.

Promyelocytic leukemia has only recently been considered as a distinct clinical entity. Fibrinogenopenia seems to be a constant finding. The use of 6-mercaptopurine plus corticosteroids apparently produced remissions in two of the 24 patients reported in the last 4 years.

#### SUMMARIO IN INTERLINGUA

Es presentate un caso de leucemia promyelocytic. Illo esseva characterisate per (1) un tableau clinic de leucemia acute, (2) le predominantia de promyelocytos in frottis de medulla ossee, (3) le predominantia de promyelocytos, como leucocyto anormal, in le sanguine peripheric, (4) un curso rapidemente mortal, e (5) le constatationes necroptic de acute leucemia myelogene. Infelicemente le patiente moriva ante que le fibrinogeno del plasma e altere factores coagulatori poteva esser determinate.

Leucemia promyelocytic ha comenciate solo recentemente esser considerate como un distincte entitate clinic. Fibrinogenopenia pare esser un constatation uniforme. Le uso de 6-mercaptopurina in conjunction con corticoides apparentemente produceva remissiones in duo del 24 patientes reportate in le curso del passate quatro annos.

## REFERENCES

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