Megaloblastic Anaemia in Malaysia:
A review of 26 cases

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Introduction

ROUTINE HEMATOLOGICAL INVESTIGATIONS of a large number of cases, presented with predominant symptom of severe anemia during the period between 1969 and 1970, revealed megaloblastic anemia in 26 cases. Most of them showed normochromia with a mild degree of macrocytosis and ovalocytosis combined with occasional nucleated erythrocyte in the peripheral blood although bone marrow was frankly megaloblastic. This report draws attention to the fact that occurence of megaloblastic anemia is not uncommon in this part of Malaysia and the anemia is usually manifested with a typical peripheral blood picture.

Materials and Methods

Each case of anemia was admitted, thoroughly examined and treated with a course of combined B12 and folic acid therapy after the confirmation of the diagnosis. Hemoglobin was estimated by the colorimetric cyanomethemoglobin method. Blood film was stained by Leishmann reagent. Sternal marrow smear was fixed in methyl alcohol for 30 minutes prior to staining with Leishmann solution: 3–4 slides were studied in each case.

Results

Clinical

Of 26 cases, 25 were Malay, with ages ranging from five to 60 years. About 75% of them were females. There was one Chinese female in this series. Most of them had severe anemia, moderate hepatosplenomegaly and hemorrhagic retinopathy. Each case responded well with a course of B12 and folic acid therapy.

Peripheral blood picture

In 12, hemoglobin was less than 3 gm%, in 11, 4–6 gm% and in three, more than 6 gm% (table 1). Red cell appeared normochromic with mild degree of macrocytosis, ovalocytosis and occasionally nucleated. Except in few cases megalocytes, pear-shaped or tear-drop erythrocyte, macropolycyte and hypersegmented neutrophil were surprisingly absent (figs. 1 and 2). Mild to moderate degree of thrombocytopenia and leucopenia were usually seen.

Marrow cytology

In all cases, marrow was markedly hypercellular with variable degree of megaloblastic erythropoiesis combined with scattered giant metamyelocytes (fig.

Table – 1

Malay	25	Female	19	**Hemoglobin (gm%)**
Chinese	1	Male	7	Group A (1.5–2.9 gm%) Group B (3–5.9 gm%) Group C (6–8 gm%)
Total	26		26	

Composition of race, sex, and hemoglobin in 26 cases

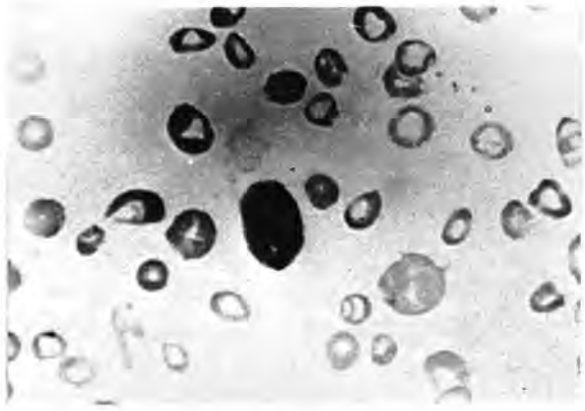

Fig 1
Typical blood picture of megaloblastic anaemia, note marked anisopoikilocytosis, macrocytosis and hypersegmented neutrophil (Leishmann stain x 1800).

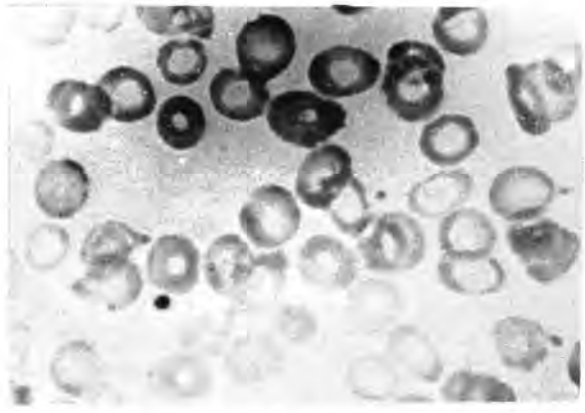

Fig 2
Mrs. R.B.M. a typical peripheral blood picture of megaloblastic anaemia. Note mild anisopoikilocytosis, few ovalocytes and tear-drop erythrocytes (Leishmann stain x 1800).

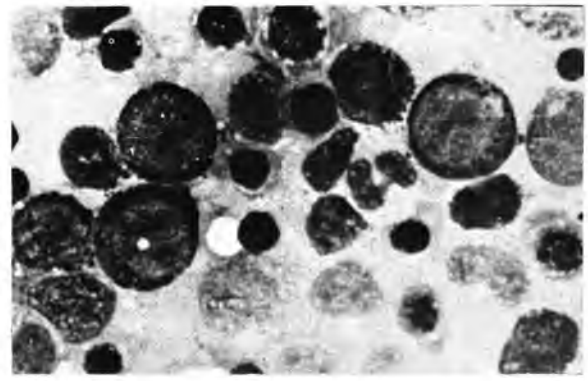

Fig 3
Mrs. R.B.M. bone marrow showing megaloblastic erythropoises (Leishmann stain x 1800).

3). In about 50% cases, megakaryocyte series was moderately hypoplastic and a considerable number of them showed degenerative changes in the cytoplasm and nucleus.

Discussion

Clinically hemorrhagic retinopathy was the constant striking feature present in this series. Cases of hemorrhagic retinopathy associated with megaloblastic anemia are well documented in the literature (Macan Markar et al, 1969).

In severe megaloblastic anemia, peripheral blood picture is usually typical characterised by normochromia with marked macrocytosis, presence of numerous tear-drop or pear-shaped erythrocytes, nucleated red cell and hypersegmented neutrophil but sometimes it may be atypical (Wills, 1948 and Hall, 1953). Macan Markar et al (1969), in their large series of megaloblastic anemia, have reported normal or atypical peripheral blood picture in about 50% of cases, the find-

ing of which is comparable to our series.

Normochromic and mildly macrocytic changes in red cells may be caused by megaloblastic anemia as well as by various diseases without B12 or folic acid deficiency. Therefore, it is more likely that cases of megaloblastic anemia would be missed frequently in this part of the world unless marrow biopsy is performed in such instances.

Summary

Twenty-six cases of severe megaloblastic anemia, of which 25 occured in Malays, are reported here. Most of them were associated with hemorrhagic retinopathy. In most instances, the peripheral blood picture was atypical, characterised by normochromia with mild macrocytosis or ovalocytosis and occasional nucleated red cells. Performance of marrow biopsy in every case of normochromic and mildly macrocytic or ovalocytic anemia in order to exclude or confirm the diagnosis of megaloblastic anemia is emphasised.

Acknowledgement

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