Comment

Normotensive primary aldosteronism has not been described with adrenal adenoma, although normotension in the face of aldosterone overproduction by an adrenal carcinoma has been reported.[3] In our patient the reason for the normotension is not clear. It has been suggested that since it is difficult to reproduce the syndrome of primary aldosteronism by administering aldosterone alone there may be other factors, such as the concomitant production of corticosterone by the tumour.[1] Corticosterone levels were not measured in this patient. Induction of hypertension in man by administering large doses of aldosterone alone has been reported,[5] so the explanation of normotension in our patient remains obscure. This case showed the importance of considering the diagnosis of primary aldosteronism in any patient with hypokalaemia whatever the blood pressure. The condition is readily distinguished from Bartter's syndrome by finding a low plasma renin activity.

We should like to thank Dr A F Lever, of the MRC Blood Pressure Unit, Glasgow, and Mr J Haggith, medical physicist, for their help in managing this case, and Mrs Valerie Robson for technical help.

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Secondary dyserythropoietic activity resembling Di Guglielmo's disease in sickle-cell anaemia

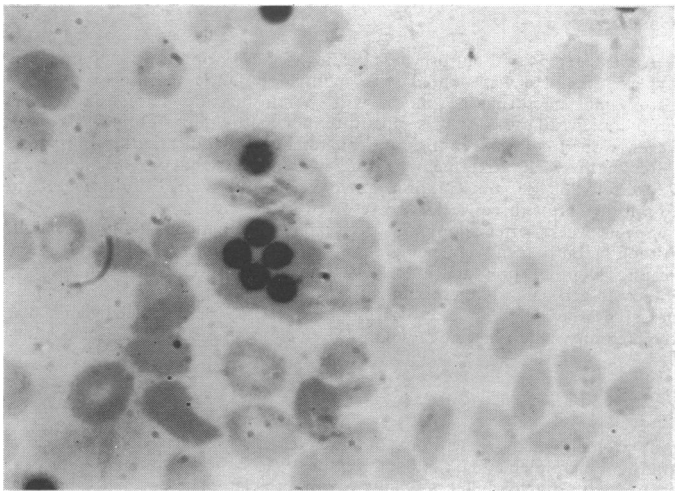
Dyserythropoiesis occurs in many diseases including deficiencies of vitamin B_{12} or folate, iron deficiency,[1] defects of haemoglobin synthesis and other haemoglobinopathies,[2] and primary sideroblastic anaemias.[3] Classic dyserythropoiesis with both morphological and serological characteristics has not been described, so far as we know, in sickle-cell anaemia. We describe three patients with sickle-cell anaemia in which dyserythropoiesis has been seen. In two patients the clinical presentation and haematological appearances, including cytochemical reactions, suggested Di Guglielmo's disease.

Case report

A boy aged 8 years presented with an enlarged spleen, mild jaundice, and extreme conjunctival and buccal pallor. He was undersized for his age and had a fever of about 39 C. Apart from a haemic murmur at the heart there were no other important physical findings. The two other patients had similar histories and physical findings.

Haematological investigations including cold antibody lysis test and the acidified serum lysis test were carried out according to the methods of Dacie and Lewis.[4] Haemoglobin 6·2 g/dl; packed cell volume 0·19%; mean corpuscular haemoglobin concentration 32%; total white blood count 32×10^9/l (32 000/mm^3), normal differentials; platelet count 188×10^9/l (188 000/mm^3); reticulocytes 12%. Haemoglobin A_2 and F levels were not raised beyond normal in sickle-cell disease. Haemoglobin electrophoresis showed the genotype of patients as SS. The cells were agglutinated and lysed by anti-I serum but there was no agglutination with anti-I serum. The acidified serum test result was negative. Morphology of the cells showed sickle forms of red cells with numerous erythroblasts in the peripheral blood. There was erythroblast multinuclearity in the bone marrow smear (see figure). Many of the erythroblasts showed periodic-acid Schiff (PAS) positivity.

Conservative management with folic acid, antimalarials, and analgesics was carried out despite the fact that the erythroblast PAS-positivity with relative leucopenia and clinical presentation suggested that the patients might have erythraemic myelosis of Di Guglielmo's type.



Bone marrow smear showing erythroblast multinuclearity.

Comment

These three cases of sickle-cell anaemia appear to have been complicated by erythroid dysplasia with morphological and serological characteristics suggesting dyserythropoietic activity. Two patients showed PAS positivity in the erythroblasts, leucopenia, and an unusually large number of erythroblasts in both peripheral and bone marrow smears, with marked hepatosplenomegaly. These findings raised the possibility of the rare Di Guglielmo's disease, particularly in view of the intensity of PAS positivity in the erythroblasts.[5] Chemotherapy was contemplated but not carried out, since it had not been shown that PAS positivity does not occur in the erythroblasts of sickle-cell anaemia. PAS positivity has been described in the erythroblasts in several other conditions including thalassaemia,[5] which had been excluded in these patients by the finding of normal haemoglobin A_2 levels. A diagnosis of Di Guglielmo's disease could not be sustained, however, since both patients have steadily improved on the usual conservative management.

The secondary nature of the dyserythropoietic activity is suggested because, although erythroblasts still persist in these patients, both morphological and serological results have changed to normal. Our thesis, therefore, is that in individual cases of sickle-cell anaemia, as in other diseases, impaired deoxyribonucleic acid or ribonucleic acid metabolism may occur. This may lead to both morphological (erythroid multinuclearity, internuclear chromatin bridges) and membrane abnormalities with increased sensitivity to lysis by anti-I serum. As this condition is only secondary to the underlying disease, it will disappear with improved management.

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