NUTRITIONAL ANAEMIA IN THE EAST END OF LONDON

BY

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The investigation described in the present communication was undertaken in an attempt to gain some idea of the incidence of so-called nutritional anaemia among the poorer-class children of the East End of London. The subjects of the study comprised some 290 patients admitted during the past two years under my care to the Princess Elizabeth of York Hospital for Children. It might be argued, of course, that this is not suitable material for the purpose, and admittedly complicating factors such as hydraemia and anhydraemia may be introduced and so obscure the true state of affairs. However, much of our knowledge of the physiological has been obtained from a study of just such material, and the uniformity of the findings would seem to go some way in disposing of this objection. Nevertheless, the nature of the material must be borne in mind when evaluating the results and attempting any application to the population as a whole. In this regard it was felt at the outset that in view of the current belief that anaemia increases the morbidity rate a specially high incidence of anaemia would be found in this particular section of the population, but, as will be seen from the records which follow, this expectation was not fulfilled.

There has been no selection of the material excepting that a few examples of leukaemia, acholuric jaundice, anaemia following haemorrhage of the newborn, purpura haemorrhagica, and coeliac disease (all conditions in which nutrition does not play a specific part) have been excluded. Children suffering from acute pulmonary disease (pneumonia), pyelonephritis, meningitis, rheumatic infection, gastro-enteritis, and debility are, however, included. A certain proportion of the children presented absolutely no signs of disease and had come under observation because of indefinite malaise. The children, varying in age between a few days and 14 years, all underwent one blood examination within a day or so of their admission to hospital, and in the classification of the results no distinction is drawn between the sexes, because it was found that the curves for boys and girls were identical.

The patients admitted to the Princess Elizabeth of York Hospital come from the poorest stratum of society, the fathers for the most part being casual labourers, 25 to 30 per cent. of whom were during the time of the inquiry the victims of unemployment. It is also worth remembering in this connexion that the district surrounding the Princess Elizabeth of York Hospital was quoted in the recent Government survey of housing as the black spot of the country for overcrowding. Here surely, if anywhere, nutritional anaemia might well be expected to abound.

The blood was taken from the ear, except on a few occasions when the finger was the source, and the haemoglobin was estimated in all instances by Haldane's method, the test colour being standardized at least every four months. As the object of this investigation is to obtain some measure of the incidence of anaemia, and of its severity when present, it is apparent that this can be attained only by finding how the individual figures fall in relation to the normal or physiological limits. An average of the findings would not only be quite useless for such a purpose but might be quite misleading, because

with such a method any unduly low readings might be more than compensated for and obscured by others abnormally high. Hence in the charts (I and II), demonstrating the findings, the individual estimations are shown in relation to the accepted range of the normal, the lower level of which is represented by a continuous line. This lower level—the borderline of anaemia—corresponds to a level of 10 per cent. below the average given by Hutchison (1909) and by Holt and McIntosh (1933) as found in healthy children. In this connexion it may be pointed out that this level is in close agreement with the minimal findings recorded in healthy children by Merritt and Davidson (1933) of New York, Drucker (1923) of Copenhagen, and by Perlin (1903) of Berne.

Haemoglobin Content

In Chart I are plotted the individual haemoglobin estimations, shown for each month during the first year of life and for each year thereafter up to 14 years. The continuous line on the chart shows, as already noted, the lower limit of normality according to the findings of various authors in large numbers of healthy children resident in Europe and America. It will be noted that the general trend of the haemoglobin reveals the well-known high level present immediately after birth, the rapid fall during the early weeks of life but tapering off later, and the recovery during the later months of infancy, which is continued throughout childhood.

It will be noticed also that a certain number of estimations fall below the level of normality. The majority of these, however, occur during the first months of life, and these examples of anaemia are probably the result of congenital causes. In many instances the low reading may be simply an expression of haemolysis of the newborn, whatever the cause of this may be, which is acting in an abnormal degree. In some cases the cause may be prematurity, with a consequent insufficient store of iron at birth, or it may have been due to anaemia of the mother and her inability to supply the normal needs of the foetus. How far these different aetiological factors were at work in our cases we cannot say, but in some of them the anaemia was due to severe maternal haemorrhage during labour, or undue bleeding from the cord, both of which factors, we think, are not sufficiently considered in attempts to account for anaemia in the very young infant.

We have had under observation during the first week of life twins, one of which (the first born) was quite normal, whereas the other (the second born) was markedly anaemic, and the only discoverable aetiological factor was a severe uterine haemorrhage between the delivery of the first and second twin. But whatever may be the cause of these examples of anaemia during the first three months, a dietetic factor (deficient intake of iron) cannot be invoked, as it has never been found possible to prevent the fall in haemoglobin at this age by the administration of iron in ample amounts. One specially remarkable feature in the results is the extreme rarity of low readings during the latter half of infancy (6 to 12 months) in view of the current opinion that nutritional anaemia is very common at this age.

Although the majority of pathological findings in the cases here recorded were during the first three months of life, a few were met with throughout the whole period of childhood. This, of course, is not to be wondered at, since many of the children were moderately ill on admission to hospital and suffering from such conditions as pyelonephritis, septic bronchiectasis, bronchopneumonia, and rheumatic carditis and pericarditis. But the really striking feature of the investigation is that for the most

CHART I.—Showing haemoglobin estimations. The black line shows lower limit of normal. CS = congenital syphilis. M = meningitis. B = bronchopneumonia. P = Pylonephritis. CHD = congenital heart disease.

CHART II.—Showing red cell estimations. The black line shows lower limit of normal. M = meningitis. P = pyelonephritis. BP = bronchopneumonia. A = septic arthritis. N = nephritis. B = bronchiectasis. C = congenital syphilis.

part the readings fall within the range of the physiological, and therefore do not suggest any great incidence of anaemia of a nutritional or any other variety.

Red Cell Count

In Chart II the red cell estimations are represented in the same manner as were those for haemoglobin. The continuous line delimits the lower range of the physiological according to Hutchison (1909) and Holt and McIntosh (1933), and thus it is only those readings which fall below this level that can be taken as evidence of anaemia. The red cells show the same general behaviour as the haemoglobin—a fairly wide variation, a high initial value, and a fall during early infancy with a later recovery, which is continued throughout childhood. In the case of the red cells, just as was noted with regard to the haemoglobin, the great majority of the figures fall within the range of the physiological. And again, the majority of anaemic readings are during the first months of life, although an occasional slightly subnormal value is observed at every period of childhood. But it will be noted that for the most part these low readings were found in examples of severe toxic conditions, in which a more probable aetiology is seen than in that of a deficient iron intake. Another feature deserving comment is the parallelism between the haemoglobin and red cell estimations, a fact which by itself militates against any idea of nutritional anaemia.

Conclusions

1. Examination of the blood of the sick child in the East End of London reveals for the most part normal haemoglobin and red cell values.
2. Anaemia when present during infancy is most frequent during the first three months, and is probably the result of congenital causes or of haemorrhage at birth.
3. Anaemia occurring during later infancy and childhood is rare, and, when present, is probably the result of toxic conditions.
4. There is no evidence from the section of the population studied that nutritional anaemia is common.

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DIAGNOSIS OF MALIGNANT DISEASE OF THE PHARYNX

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It is now about a quarter of a century since the technical difficulties of the surgical treatment of cancer of the pharynx were solved. The chance of cure which lateral pharyngotomy holds out might have been expected to stimulate interest in the early diagnosis of this common form of malignant disease. It is a fact, however, that recognition of these growths in their early stages, upon which any successful application of surgical excision depends, is still a rare event.

Before describing in detail the symptoms of carcinoma of the pharynx there are two points which I wish to emphasize. The first is that the early symptoms of this disease are trivial in nature, but although superficially resembling trivial symptoms of less significance they have certain peculiarities which should always arouse suspicion of malignancy. The lack of familiarity with these early symptoms is doubtless largely due to the overwhelming nature of the major symptoms which always supervene sooner or later. The patient with severe dysphagia, urgent dyspnoea, or continual pain is unlikely to dwell on the minor disturbances which preceded them, and in the presence of an obvious case of malignancy there is little temptation to the busy practitioner to probe into the past history.

The second point is that in the majority of cases, when symptoms first appear, some abnormality can be seen by