

INVESTIGATION INTO THE AETIOLOGY AND TREATMENT OF PICA*

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Pica could be defined as a perversion of appetite with persistent and purposeful ingestion of one or more of a large variety of unsuitable substances, seemingly of no nutrient value. It is associated with the passage of these substances unchanged in the stool, or with radiological evidence of their presence in the gut when they are radio-opaque. The word is derived from the Latin meaning magpie. Pica is world-wide in distribution. It occurs at all ages and is not limited to childhood. The incidence of pica is far greater than is commonly realized.

Aetiological Concepts

For centuries writers have recorded observations on the subject, but the most recent reports still leave the matter of therapy an unsolved problem. The purpose of this investigation was to assess the importance of various aetiological concepts of the past and in consequence to suggest a simple and effective remedy for this alarming aberration from the normal behaviour pattern of childhood.

Twelve children under 7 years of age were investigated. In most cases pica was severe, and children had to be restrained. Sand, soil, pieces of brick, stones, pieces of wood, black coal and clay were ingested in varying combinations and amounts. Apart from pallor of mucosae in 5 children, the children appeared to be 'normal' on physical examination.

The nutrition, as assessed from the serum-protein levels, was adequate and better than that of a control series. Mean total serum protein in the pica group was 7.19 g.% as compared with 5.67 g.% in a control series. This difference is statistically highly significant.

Consideration of their family income revealed that the pica group was better off financially. The mean weekly income assessed on *per capita* basis was 26.13 shillings in the pica group as compared with 13.08 shillings in a control series.

Studying the birth weight of the pica group revealed a statistically significantly higher birth weight in the pica group as compared with a control series of normal infants. The mean birth weight in this series was 7 lb. 15 $\frac{1}{2}$ oz., as compared with 6 lb. 15 $\frac{1}{2}$ oz. in a control series.

Children suffering from pica were mentally normal, of average intelligence, and did not suffer from other behaviour problems.

A significantly higher incidence of worm infestation (83%) was found in the pica group as compared with a control series (20%).

Radiological examination carried out on 8 cases showed opaque

material compatible with sand or stones in the gastro-intestinal tract in 5 cases. In 1 of these cases the appendix was outlined and filled with sand. This is the first time that an X-ray examination of the abdomen has been used in confirming the diagnosis and response to therapy in children with pica.

The most important and constant abnormality found in the pica group was iron-deficiency anaemia. The mean haemoglobin level in the pica group was 7.89 g.% as compared with 10.52 g.% in a control series of the same age and background. The other haematological investigations (P.C.V., M.C.H.C. and peripheral smear), coupled with the response to iron therapy, confirmed that the anaemia was of the iron-deficiency type.

Treatment

Once the foregoing investigations had been completed, therapy was commenced. Intramuscular iron-dextran compound (imferon) in doses varying from 200-400 mg. was given in 9 cases. Blood transfusion was administered to 2 cases and oral ferrous gluconate to 1 case. It must be emphasized that at the time of the treatment of the pica no other medicaments (e.g. vermifuges or antibiotics) were employed. No psychological advice was given and the condition was treated purely as anaemia.

The results of treatment, on the whole, were highly gratifying. There was a marked rise in haemoglobin level in nearly every case. The mean haemoglobin level on completion of treatment was 11.43 g.%, showing a mean rise of 3.54 g.%. There was a rapid and dramatic cure of the pica, usually within 1-2 weeks of commencement of treatment. A control case, initially treated with intramuscular sterile water, failed to respond until iron therapy was given. There was an indication that although blood transfusion restored the haemoglobin to normal, it contained insufficient iron to meet the needs of restoration and iron storage to cure the pica.

The 5 cases which before treatment had shown radio-opaque material in the bowel, showed complete radiographic clearing in every case within 10 days. This was confirmatory evidence of response to therapy. They all showed the usual beneficial effects of iron therapy on the appetite, behaviour, and sense of well-being of the child.

Conclusion

The conclusion is drawn that iron-deficiency acts as a physiological urge initiating pica, that it is consequently the major cause of pica, and that iron therapy is curative.

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