AN ASCARIS INFECTION.

A Case in which the diagnosis and cure were effected by mistake.

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Cases presenting difficulties in diagnosis are not uncommon; from each some lesson may be learned. The case presented below has many points of interest and is perhaps worthy of record.

Z. A., male, aged 42, an Algerian rug-hawker, was admitted to hospital on July 16th complaining that for seven weeks past he had been losing weight and strength, that he had some cough and suffered from nausea and constipation and that he had severe rheumatic pains in the trunk and limbs, most severe in the legs, fever and drenching sweats.

On examination the skin was found to be brownish in colour and the conjunctivæ slightly discoloured but no jaundice was manifest. The man looked ill and he had a rather anxious expression. There was slight cough and an occasional rhonchus could be heard in the chest, otherwise the lungs appeared normal. The heart was normal. The edge of the liver could be felt projecting two finger-breadths below the right costal margin and the patient complained of tenderness to pressure and of constant dull pain in the hepatic region. The spleen was not enlarged and nothing otherwise abnormal was detected in the abdomen. The tongue was thickly coated. An irregular pyrexia was present but the pulse was notably slow. No diagnosis was made. The following clinical pathological examinations were made and repeated by Dr. Schwabacher in the hope that some light might be thrown on the case.

Urine no abnormality: *Blood* Meinike test negative: *Sputum* negative. *Blood*; R.C. 4,180,000, Hæmoglobin 83 per cent., Colour index 0.9, W.C. 11,600. Neutrophile 76, Lymphocytes 20, Eosinophile 1 per cent.; no malarial or other

parasites: *Blood culture* sterile: *Widal* reactions for the enteric fevers negative. *Stool* examination revealed no protozoa, no helminths, no ova; the faeces were

pale in colour. *Serum reactions* for *Melitensis* and *Abortus* infections, kindly carried out by Professor Wilson, were negative.

The progress of the case was downhill; in four weeks there was a loss of nearly a stone in weight and the patient looked toxic. Fever of somewhat varied type persisted, during the latter half of the third week and the fourth week the temperature ranged between 102° and 104° F. as shown on the chart. The most noticeable feature of the case was, however, that the pulse remained slow. Still no diagnosis had been made. At the end of four weeks the case was carefully reviewed and in discussing the differential diagnosis the use of the exploratory needle in cases of suspected amoebic abscess of the liver was mentioned, with no idea, however, that such a measure was warranted in this case.

An enthusiastic House Physician, however, after my departure from the hospital needled the liver, which resulted in rather severe collapse on the part of the patient and, to the astonishment of all concerned, in the expulsion of two ascaris in the stools two days later!

After an interval of three days santonin was administered and three more adult ascaris lumbricoides were evacuated. Improvement at once set in, the temperature reached normal in a week, the tongue cleaned, the stools regained their normal colour, the pain and tenderness in the hepatic region subsided, and convalescence was uninterrupted.

To recall in brief the life-history of ascaris lumbricoides: the egg containing the embryo is swallowed, in the small intestine the larva is set free which, entering the wall of the bowel, finds its way, either *viâ* the blood vessels or connective tissues of the mesentery, to the liver; from the liver it passes in the blood stream to the lungs often there setting up an inflammatory reaction; about the eighth day after infection the grown larva passes up the trachea to be again swallowed and once more reach the small bowel where it grows into the adult worm, from egg to adult stage taking some six weeks. When mature the female discharges eggs which can normally be demonstrated in the faeces.

The number of worms found is commonly five or six but they may run to many hundreds. The vagaries of the worm and the variety of the symptoms which may occur, even though infections in this country are uncommon, can never afford to be forgotten. Symptoms may be chiefly abdominal (abdominal pain, distension, vomiting, diarrhoea, etc.) or nervous, anything from giddiness, blindness, etc., to convulsions, paralysis and meningism have been described.

The worms are commonly passed per anum but they may wander into the œsophagus, the nose, the eustachian tube, etc., and thus be expelled. Similarly, they may find their way into any of the biliary passages or gall-bladder, causing hepatic or more rarely pancreatic troubles.

In the present case, one in which infection was acquired in this country, it seems probable that the worms lay in the biliary passages within the liver causing a hepatitis but without secondary infection and that any ova produced were prevented from reaching the gut.

Further it would seem probable that, when the liver was explored, the needle impinged on the worms themselves and that thus stimulated they wriggled their way down the bile-duct to the bowel.