NOTES ON THE DIFFERENTIATION OF CAPILLARIA HEPATICA AND VISCERAL LARVA MIGRANS

Following a report on the incidence of solitary granulomas of *Capillaria hepatica* in man from Czechoslovakia (Šlais J., Štěrba J., Folia parasit. (Praha) 10: 373—374, 1972), P. C. Beaver (personal communication) agreed in that the nematodes under consideration are members of the genus *Capillaria* and, evidently, the species concerned is *Capillaria hepatica*. He kindly drew our attention to the paper by Sumner D. and Tinsley Ellis G. H., Encephalopathy due to visceral larva migrans. J. Neurol. Neurosurg. Psychiat. 30: 580—584, 1967, describing the case of a 57-year old woman, a pathological hoarder who, as a result of this, had lived for some years in considerable squalor. The woman had never been outside England (her home country), and had kept neither dogs nor cats. She was admitted to hospital with encephalopathy which, however, did not appear to be directly related to the longstanding psychological abnormality. The disease started with a temperature followed by a state of confusion. The cerebrospinal fluid was normal, the EEG showed some diffuse abnormalities, eosinophilia was remarkably high (47 %) and persisted at these levels. Parasitological examination of the stool and stomach juices was negative. An x-ray examination of the chest suggested an enlargement of the liver, and also liver tests were abnormal. Therefore, three weeks after admission to the hospital, a needle biopsy of the liver was made. A small, white nodule was seen which, microscopically consisted of an inflammatory granuloma some 3 mm in diameter. The nodule was both histologically and metrically consistent with our finding of solitary liver granulomas due to *C. hepatica* (Šlais J., Folia parasit. (Praha) 20: 149—161, 1973).

Embedded in the necrotic mass was a nematode larva. The greatest length of the larva seen in any of the sections was 620 μm, the maximum diameter was 54 μm. Only its body wall was distinguishable, the inner structure was unidentifiable. The larva appeared to be in a process of dissolution. Biopsy of the deltoid muscle was negative. Specimens of serum were sent for serological tests (filariasis, hydatid disease, ascariasis), all were negative. Skin tests with specific *Trichinella* antigen were positive, *Ascaris* gave a doubtful positive, *Toxocara* and Hydatid antigens negative reactions. Over the course of the next few weeks the patient's confusion cleared spontaneously, three months after the start of the disease, there was only 1 % of eosinophils in the blood. Parasitological examinations of stools were negative.

The authors themselves admitted that the measurements of the nematode larva surpassed those given by R. L. Nichols (J. Parasit. 42: 349—362, 1956) for the second stage larva of *Toxocara canis*, and only once a similar larva was described as the fourth stage larva of *Ascaris lumbricoides*. In this case typical granulomas were found in the liver, but the larvae were seen in the bronchioles only, in association with characteristic inflammatory changes (Beaver P. C. and Danarai T. J., Amer. J. trop. Med. Hyg. 7: 100—111, 1958).

The figure in the paper by Summer and Tinsley (a histological section) is not, as inferred by the authors, a longitudinal section through the complete larva, but only a section through the bent portion of the nematode, the structure and measurements of which are similar to our finding. An interpolation of body diameter to length indicates that the worm under consideration is a *Capillaria*-like nematode measuring approximately 27 mm in length; of this, a small part only has been encountered by needle biopsy. In support of the correctness of our conclusion are all negative serological tests, and the marked positivity of the *Trichinella* skin test due to the close relationship of these nematodes to capillarids. The authors were correct in suggesting that encephalopathy was a form of allergic reaction associated with a reinfection with this nematode for which man is an unnatural host. A high incidence of larvae is indicated by the enlargement of the liver and also by successful needle biopsy.

Conclusion: Our analysis of a case described by D. Summer and Ellis G. F. Tinsley in J. Neurol. Neurosurg. Psychiat. 30: 580—584, 1967 indi- cates that infection was caused by *Capillaria hepatica* and not by visceral larva migrans. This is another observation on liver capillariosis in Europe occurring under similar epidemiological conditions to those described in our observations.

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