CONGENITAL TOXOPLASMOSIS*

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Human toxoplasmosis has been recognized since 1939. Since then many probable and proved cases have been described in the United States, South America, Europe, and the United Kingdom (Wolf, Cowen, and Paige, 1939; Pinkerton and Henderson, 1941; Dow, 1945; Jacoby, 1948).

There are two types of chronic infection—congenital and acquired. Congenital infection is by far the more common, its cardinal features being hydrocephalus, chorioretinitis, and cerebral calcification. The most characteristic radiological appearances are curvilinear streaks in the region of basal ganglia or the optic thalamus, or rounded deposits in the same regions. The following cases have some noteworthy features.

Case Reports

Case 1, a schoolgirl, aged 12, who was referred to the refraction clinic for routine examination of her glasses, had been attending the clinic annually since the age of 5 for defective vision.

Examination.—Visual acuity was 6/36 in the right eye and 6/60 in the left; there was no improvement with correcting lenses in either eye. The conjunctiva and cornea were clear. The pupillary reactions were normal, and the media clear. The fundus appearances are shown in Figs 1 and 2.

![Fig. 1.—Case 1, right fundus—disc pale, margins blurred. Irregular patch of chorioretinitis, three disc diameters across. Coarse pigment scattered on periphery. Fine pigment along supero-nasal and infero-nasal branches of central retinal artery.](image1)

![Fig. 2.—Case 1, left fundus—disc pale, margins blurred. Irregular patch of chorioretinitis, three disc diameters across, with coarse pigment scattered all over the area. Two tiny patches of choroiditis just above optic disc.](image2)

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Rays of the Skull (Figs 3 and 4).—Several calcified foci were disseminated in the anterior and posterior parts of the cerebral hemispheres. Some of these had a curvilinear outline, and the radiological appearances were those of toxoplasmosis.

X Rays of the Chest and Right Femur.—There were no significant pulmonary changes, and no evidence of calcified foci was seen in the muscles.

Toxoplasma Antibody Tests.—Dye test 1/20; complement-fixation test negative; blood count—no evidence of eosinophilia. Wassermann reaction and gonococcal complement-fixation test negative.

Family.—(1) Her mother, aged 35 years, had visual acuity 6/5 in each eye, clear media, and nothing abnormal in the fundi.

X Rays of the Chest, Skull, and Dorsal Spine.—Faint calcification was seen in the neighbourhood of the pineal body, but the outline was not characteristic of toxoplasmosis. There were no significant changes in the lungs. The dorsal spine shows a slight scoliosis, but no significant bony abnormality.


(2) Her sister, aged 3 years, visual acuity 6/6 in each eye, clear media and healthy fundi.

X Rays of the Chest and Skull.—No evidence of any abnormality.

Toxoplasma Antibody Tests.—Dye tests 1/8, complement-fixation test negative.

Case 2, a schoolboy, aged 7 years, had been attending the school clinic for defective vision in the right eye and right concomitant convergent strabismus, since the age of 3 years.

Examination.—Visual acuity was 6/36 with glasses +0.75 in the right eye and 6/9 with glasses +0.75 = 6/6 in the left. The right and left conjunctiva and cornea were clear, the pupillary reactions normal, and the media clear. The right fundus showed juxtapapillary choroiditis about four disc diameters across with coarse pigment scattered around the muscular region. The left fundus was normal.

X Rays of the Skull.—Several calcified foci were seen as rounded bodies (Figs 5 and 6, opposite).

Dye test 1/30; complement-fixation test 1/2, 1/4 partial; Wassermann reaction and gonococcal complement-fixation test negative.
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Figs 5 and 6.—Case 2, x rays of skull, showing a number of calcified foci as rounded bodies.

Family.—(1) His mother had visual acuity 6/6 in each eye, and normal fundi. Dye test 1/25, complement-fixation tests negative, X ray of skull normal.
(2) His sister, aged 2 years and 3 months, had normal fundi and x ray of skull, dye test within normal limits, and complement-fixation test negative.

Discussion

The mode of transmission in the congenital type of infection can only be surmised.

The mother contracts the primary infection and develops primary parasitaemia during pregnancy. The mother of an infected child seldom complains of any suspicious illness during pregnancy. It is significant that only the first child in these two families is infected. The second child shows no evidence of disease. Either the parasitaemia is transitory during pregnancy or neutralizing antibodies are quickly formed in the maternal blood so that further calamity is avoided. This explains why subclinical infection is widespread though congenital infection is relatively rare. I think one is justified in reassuring the mother that there is no danger of infection in any subsequent pregnancies.

It has been suggested that congenital infections are common in the early part of the year* (these two children were born in the months of January and February respectively), and this may have some bearing on the epidemiology.

REFERENCES


*Private communication from Prof. C. P. Beattie, Bacteriology Department, University of Sheffield.