

CHAGAS' DISEASE IN PANAMA: REPORT OF THREE CASES*

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More than two decades have elapsed since Chagas' disease, or American trypanosomiasis in the human being, was first discovered in Brazil by Dr. Carlos Chagas¹ (1907) and later (1909) reported by him. Since that date, a few cases of what appeared to be the same disease have been reported from time to time in other parts of the Western Hemisphere. This may indicate either a slow spread of the disease or a better knowledge of the clinical manifestations and greater use of the laboratory as an aid in diagnosis. It is likely that the geographical extent of the disease is much greater than has been previously suspected, since it is found usually in children and the period of time that parasites can be demonstrated in peripheral blood films is relatively short, thus making a diagnosis by this means largely a matter of chance.

*Geographical Distribution.*²—Cases have been recorded in Brazil (provinces of Minas Geraes, Sao Paulo and Goyaz), in Venezuela (states of Trujillo and Miranda), in Argentine (Tucumen and Jujuy), in Peru and in Salvador.

Trypanosoma cruzi, or trypanosomes resembling it, have been found in bugs (*Triatoma* and *Rhodnius*) in the Argentine and in California,

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but they are said not to transmit the disease to man in these regions.

Robertson³ reports *T. cruzi* (1929) in an opossum captured near Tela, Honduras, C. A. It seems strange, with cases reported both below and above Panama, that no cases have been previously discovered in Panama or the Canal Zone, particularly in view of the fact that vast numbers of routine blood film examinations have been made in the hospital, dispensary and field services. The first case reported here is from the service of Dr. Rodolfo Arce, of the Hospital Santo Tomas. It was discovered purely by chance in the routine examination of blood films for malaria. The other two cases were discovered by the Gorgas Memorial Laboratory while conducting a blood film survey for malaria in the basin of the Chagres River. All of these cases came from the village of Aguas Buenas or its immediate neighborhood. This village is located on the new Madden Dam Road near the Canal Zone boundary. The first patient lived about two miles from the village and about 50 yards from the Madden Dam Road. The other cases are members of a family that lives in Aguas Buenas. The homes of the patients are of the typical rural native type, consisting of palm leaf roofs and cane walls with a dirt floor, the sleeping quarters being in the attic of the house on split bamboo or board ceiling.

*Case 1 (Hospital Santo Tomas Case 111463).—*E. B., a female infant of Panaman parents, aged 18 months, was born in San Francisco de la Montana, near Santiago de Veraguas, and had lived for the previous two months on the Madden Dam Road near Aguas Buenas. She was admitted to the Hospital Santo Tomas November 28, 1930, with a diagnosis of acute gastroenteritis. The history of the illness could not be obtained, as no member of the family has visited the hospital since the child was admitted. The child was poorly nourished and poorly developed. The facial expression was dull and mask-like. The scalp was covered with a lot of dirty gray crusts and numerous pustules. The skin of the entire body was covered with scars, apparently the result of old insect bites.

The eyes were normal. The thyroid gland showed no evidence of enlargement. The posterior cervical glands were large and hard and were somewhat more enlarged on the left side than the right. The left axillary and both inguinal sets of glands were palpable, but not so large as the cervical sets. The heart and lungs were normal. The abdomen was distended, pendulous and thin walled. A small umbilical hernia was noted. The spleen could not be palpated.

The temperature on admission to the hospital was 100° and it has since remained between 96.4° and 98.8°.

The pulse was 120 on admission and has remained between 100 and 130.

The respiratory rate has remained between 20 and 30.

Electro-cardiographic examinations showed no variation from the normal.

Laboratory Examinations.—Carlos de Seda, of the Santo Tomas Hospital Laboratory, while examining a thick blood film of the child on December 1, 1930, found eight trypanosomes. These parasites varied in number in the blood films, but reached a maximum of 296 per thick blood film on the thirteenth day after admission and then gradually diminished in number until they disappeared from the peripheral blood films on the twenty-eighth day after admission. The films for the past three months have remained negative for trypanosomes.

BLOOD COUNT

Hemoglobin 30 per cent

Red blood cells 1,600,000

Color index 0.93

Leucocytes 9,000

Polymorphonuclears 58 per cent

Small lymphocytes 20 per cent

Large lymphocytes 3 per cent

Large mononuclears 7 per cent

Eosinophils 12 per cent

One estivo-autumnal gamete parasite was found.

The blood Wassermann test was negative.

A slight trace of albumin was the only variation from the normal that was found in the urine.

There was a heavy infestation of the stool with *Ascaris lumbricoides* and a light one with *Trichocephalus trichiurus*.

Treatment.—No specific treatment directed at the trypanosomiasis. After a vigorous treatment for the intestinal parasites the patient showed a steady general improvement.

Case 2 (Hospital Santo Tomas Case 115922).—T. R., a female child of Panaman parents, aged 2 years, was

born at Aguas Buenas and has lived there continuously except for the second six months period of her life, which she had passed in the city of Panama. This patient was admitted to the service of Dr. Jose M. Nunez in the Hospital Santo Tomas on March 9, 1931, with the diagnosis of Chagas' disease.

The past history was negative except for the record of occasional attacks of fever and the passage of worms in the feces.

Physical Examination.—The child was well developed and nourished. Its facial expression was bright.

Numerous scars, apparently from old insect bites, were found on the arms and legs.

The thyroid gland was normal.

The axillary and inguinal lymph nodes were slightly enlarged.

There was a slight clear discharge from the eyes and nose.

The lungs were normal.

The heart rate was 120 and slightly irregular. A systolic blow was recorded. The abdomen was pendulous and soft. There were no masses. The spleen was non-palpable. The temperature ran a normal course with a range of 97.2 to 99°. The pulse averaged 100. The respiratory rate averaged 24. There were no physical signs of disease other than those shown by laboratory findings.

Electro-cardiographic examination was normal.

Laboratory Examinations.—Joseph J. Romanchek, of the Gorgas Memorial Laboratory, found a trypanosome in the blood film taken from this child on March 3, 1931. Since that date one or two have been found in routine hospital examinations.

BLOOD COUNT

Hemoglobin 65 per cent

Red blood cells 4,330,000

Leucocytes 9,200

Polymorphonuclears 67 per cent

Small lymphocytes 23 per cent

Large mononuclears 5 per cent

Transitionals 3 per cent

Eosinophils 2 per cent

No malaria parasites were found.

The urine was normal.

The stool was positive for *Ascaris lumbricoides*, *Strongyloides stercoralis* and *Trichocephalus trichiurus*. Light infections were indicated.

Treatment.—No specific treatment for trypanosomiasis was instituted.

Case 3 (Hospital Santo Tomas Case 115923).—J. R., a male infant of Panaman parents, aged 6 months, was a brother to the second case. He was admitted to the service of Dr. Jose M. Nunez at the Hospital Santo Tomas on March 9, 1931, with the diagnosis of Chagas' disease.

The past history was negative except for attacks of fever and the history of passing worms in its stools. *T. cruzi* was found in blood film during a malaria survey by Joseph J. Romanchek. This child was born in Aguas Beunas and has lived there continuously.

Physical Examination.—The child was well developed and nourished. Its facial expression was normal.

There were many scars over the body and extremities suggestive of old insect bites.

The thyroid gland was normal.

The right cervical lymph nodes and the inguinal lymph nodes were moderately enlarged.

There was a slight discharge from the eyes and nose and a cough of mild degree.

The heart was normal.

The abdomen was pendulous, soft, and contained no masses.

The spleen was non-palpable.

The temperature was 96.4 to 99°.

The pulse was 90 to 120 per minute.

The respiratory rate was 22 to 30 per minute.

Electro-cardiographic examination was normal. There were no physical signs of serious illness.

Laboratory Examinations.—Since admission to the hospital the blood films have shown one or two trypanosomes in each thick film.

BLOOD COUNT

Hemoglobin 60 per cent

Red blood cells 3,820,000

Leucocytes 8,200

Polymorphonuclears 65 per cent

Small lymphocytes 27 per cent

Large mononuclears 4 per cent

Transitionals 2 per cent

Eosinophils 2 per cent

No malaria parasites were found.

The urine was normal.

In the stool many ova of *Ascaris lumbricoides* were found.

Treatment.—No specific treatment for trypanosomiasis was given.

Morphology of the Trypanosome.—The trypanosomes found in the blood films of all three cases were morphologically similar to *T. cruzi*, and tissue sections of the heart muscle in an animal infected with the parasite showed a typical localization of leishmania forms.

A detailed report will be made at a later date by the staff of the Gorgas Memorial Laboratory, where research work is in progress regarding an entomological survey of the local area where these cases were found, as well as a study of the disease in wild and domestic animals.

SUMMARY

(1) Three cases of Chagas' disease are reported, found for the first time in the Republic of Panama. All came from one focus in the basin of the Chagres River.

(2) The trypanosomes found in the three cases are believed to be *T. cruzi*.

(3) The trypanosomes disappeared spontaneously from the peripheral blood films without the action of any specific drug in the course of a few weeks. No opinion will be ventured regarding the final outcome of the attacks in these three children.

(4) The symptoms and physical signs of Chagas' disease presented by these cases were essentially negative.

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