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ABDOMINAL ANGIOSTRONGYLIASIS – AN UNDER-DIAGNOSED DISEASE

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Abdominal angiostrongyliasis is a nematode infection caused by *Angiostrongylus costaricensis* Morera & Céspedes, 1971. Rodents are the main definitive hosts, specially the "cotton rat" – *Sigmodon hispidus* Say & Ord, 1825 in Central America. Species of veronicellid slugs are implicated as intermediate hosts (Morera, P., 1973. *Am. J. Trop. Med. Hyg., 22:* 613-21). In Brazil, we have recently detected the infection of *Phyllocaulis variegatus* Semper, 1885 with larvae of *A. costaricensis.* In the vertebrates, the larvae penetrate the intestinal wall, migrate through the lymphatic vessels and become adults as they invade the ileo-colic branches of the mesenteric artery (Morera, P., 1973. *Am. J. Trop. Med. Hyg., 22:* 613-21).

The disease was first described in Costa Rica (Céspedes, E. et al., 1967. *Acta. Med. Cost., 10:* 235-55; Morera, P., 1967. *Acta Med. Cost., 10:* 257-65) and cases have been reported or are known to occur from the United States to the north of Argentina (Morera, P., 1986. In J. A. Spittel Jr, *Clinical Medicine.* Harper & Row, Philadelphia, vol. III, p. 1-4).

In Brazil, reports came from Brasília, São Paulo, Paraná, Santa Catarina e Rio Grande do Sul (RGS). In the southernmost state (RGS), 27 cases have been found in a survey made in Pathology Services, which allowed us to do epidemiological, clinical and pathological studies (Graeff-Teixeira, C., 1986. M. Sc. Thesis, Universidade Federal do Rio de Janeiro, 137 p.).

The children and young adults are predominantly affected in Central America, with no clear sex or race predisposition.

In south Brazil, both adults and children are affected and most of the patients live in rural areas. Abdominal pain, fever, anorexia, nausea and vomits are common manifestations of the disease; sometimes a mass in the right inferior abdominal quadrant can be palpated. The leucogram shows leucocytosis with eosinophilia up to 82% (Morera, P., 1982. In R. Veronesi, *Doenças Infecciosas e Parasitárias.* Guanabara Koogan, Rio de Janeiro, p. 968-71).

The barium enema may demonstrate irregularities and thickening of the intestinal wall (Morera, P., 1986. In J. A. Spittel Jr, *Clinical Medicine.* Harper & Row, Philadelphia, vol. III, p. 1-4).

It's important to stress that both *Schistosoma mansoni* and *Angiostrongylus costaricensis* are intra-vascular parasites, but with different location: the venous vessels in the former and the arteries in the latter. From its intra-arterial localization, *A. costaricensis* promotes a huge eosinophilic infiltration throughout the intestinal wall, vascular abnormalities and granulomatous reaction. Macroscopically two patterns can be seen: hyperthrophic-pseudotumoral and ischemic-congestive (Graeff-Teixeira, C., 1986. M. Sc. Thesis, Universidade Federal do Rio de Janeiro, 137 p.).

No larvae have been found in human feces. A latex agglutination test is available in Costa Rica for serological diagnosis, with high sensibility and specificity (Morera, P., 1986. In J. A. Spittel Jr, *Clinical Medicine.* Haper & Row, Philadelphia, vol. III, p. 1-4).

Without the aid of a serological test, the diagnosis depends on the examination of biopsy fragments or surgical ressections. Unfortunately, many surgical specimens, specially those diagnosed clinically as "appendicitis" are not send to pathological study.

Otherwise, many cases of abdominal angiostrongyliasis could have been mis-diagnosed as "eosinophilic enteritis or appendicitis" in Pathology Services, because most pathologists

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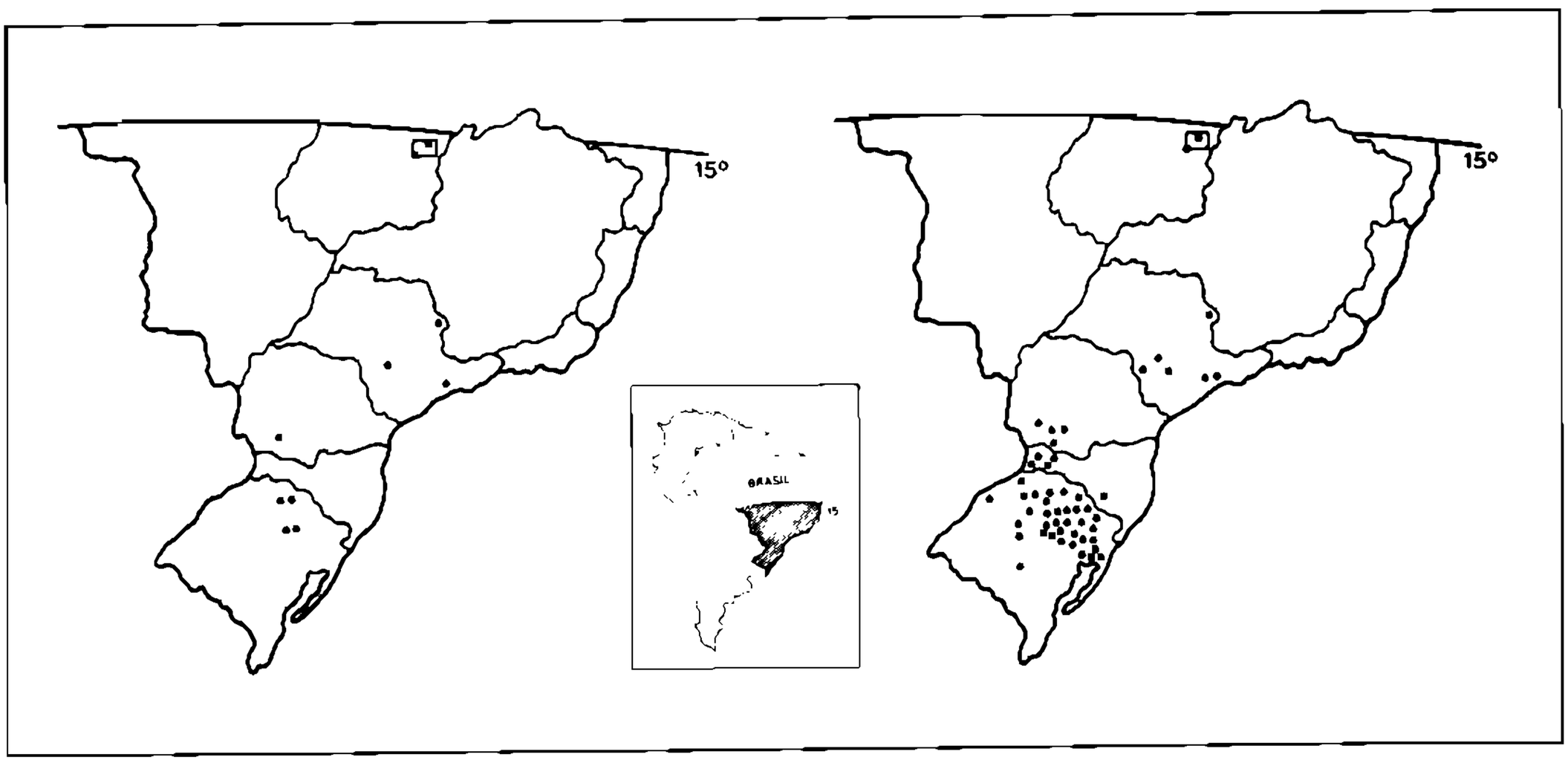
were unware of the disease. In fact, this type of incorrect diagnosis occurred sixteen times in the material examined by us (Graeff-Teixeira, C., 1986. M. Sc. Thesis, Universidade Federal do Rio de Janeiro, 137 p.).

Patients with mild disease, that cures expontaneously and does not require surgical treatment are probably common in the north of Rio Grande do Sul. They may seek the medical services with recurrent abdominal painful episodes. The eosinophilia seen in the leucogram is attributed to other intestinal parasites.

For these reasons, the abdominal angiostrongyliasis is an under-diagnosed disease. In south Brazil, as the awareness of the disease is increasing among the medical personnel, many new cases have been found lately (Fig.).

A better knowledge of the distribution of this human infection will depend on the existence of physicians able to suspect and diagnose it and on seroepidemiological surveys.

With the recent recovery of *A. costaricensis* from *P. variegatus* collected in RGS, we suceeded in maintaing the cycle in the laboratory. We have already began the antigen production, in cooperation with Dr Pedro Morera (University of Costa Rica). Soon we hope to get results that enable us to better evaluate this disease in South Brazil. The prevalence figures of the human disease in Costa Rica – 12/100.000 (Morera, P., 1985. *Parasitology Today, 1:* 173-5) should alert us to the "public health problem" that this parasitosis may represent in our country.



Distribution of cases in south Brazil – 1984 and 1987.