

Travel history is important! - A Case of *T. cruzi* Identified by Placental Examination

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Citation for this version and the definitive version are shown below.

Citation to Publisher Heller, Debra, Romagano, Matthew P., Alzate-Duque, Luis, Rubenstein, Sara T., Williams, Shauna,
Version: Madubuko, Adaoro, Algarrahi, Khalid & Faye-Petersen, Ona. (2018). Travel history is important! - A Case of *T. cruzi* Identified by Placental Examination. *Pediatric and Developmental Pathology*.

Citation to this Version: Heller, Debra, Romagano, Matthew P., Alzate-Duque, Luis, Rubenstein, Sara T., Williams, Shauna, Madubuko, Adaoro, Algarrahi, Khalid & Faye-Petersen, Ona. (2018). Travel history is important! - A Case of *T. cruzi* Identified by Placental Examination. *Pediatric and Developmental Pathology*. Retrieved from <http://dx.doi.org/doi:10.7282/T3NV9NND>.

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Travel history is important!-A Case of *T. cruzi* Identified by Placental Examination

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Running title: ***T. cruzi* Identified by Placental Examination**

Disclosure: none

Conflicts of interest: none

Figures 1

Precise: A rare case of placental *Trypanosoma cruzi* is presented

Keywords: Placental diseases, chronic villitis, pregnancy, *T.cruzi*, neonatal death

Dear Editor:

A recent twin placenta revealed an unexpected diagnosis of *Trypanosoma cruzi* (*T.cruzi*). In retrospect, the mother was recalled to be Argentinean and to have intermittently resided there.

A dichorionic-diamniotic twin pregnancy with preterm premature rupture of membranes delivered at 24 4/7 weeks. Twin A had had ascites, pleural effusion, and intrauterine growth restriction (IUGR). Twin B had mild ventriculomegaly. Both twins expired within hours of birth.

Placenta A showed acute chorioamnionitis, funisitis and erythroblastosis. Placenta B showed acute chorioamnionitis, necrotizing villitis, and numerous villous amastigotes within pseudocysts in necrotic foci (fig 1). Immunohistochemical and PCR assays for *T.cruzi* were positive.

At autopsy, both twins showed extensive extramedullary hematopoiesis, erythroblastosis, and rare *T. cruzi* organisms.

Congenital Chagas disease is endemic in Argentina, transmitted hematogenously through the placenta.¹ Placental inflammation may be acute, chronic, or granulomatous, and often necrotizing. The organisms may be present in villous trophoblast and Hofbauer cells,^{1,2}. Fetal organisms may be within the reticuloendothelial system, smooth muscle, and heart, with associated myocarditis. Congenital Chagas can also present with megaesophagus or megacolon.

Most pregnant women with *T. cruzi* infection are chronically infected and asymptomatic. The majority of individuals are from the endemic regions of Latin America; however, Chagas disease is increasingly recognized in non-endemic areas such as the U.S.³ Congenital infection is associated with low birth weight, fetal hydrops and neonatal death, but can be asymptomatic⁴.

Treatment of Chagas disease is not recommended during pregnancy. Identification and treatment of infected women of child-bearing age prior to becoming pregnant is critical⁵.

It is important to inquire about and consider patients' countries of origin and travel histories when developing a differential diagnosis, lest conditions uncommon to one's own region be overlooked.

References:

- 1-Bittencourt AL. Congenital Chagas Disease. *Am J D Child* 1976;130:97-103.
- 2-Carlier Y, Truyens C. Congenital Chagas disease as an ecological model of interactions between *Trypanosoma cruzi* parasites, pregnant women, placentas and fetuses. *Acta Tropic* 2015;151:103-15.
- 3-Coura JR, Vinas PA. Chagas disease: a new worldwide challenge. *Nature* 2010;465(7301):S6–S7.
- 4-Congenital transmission of Chagas disease – Virginia, 2010. *MMWR Morbidity and mortality weekly report* 2012;61:477-479.
- 5- Carlier Y, Torrico F, Sosa-Estani S, et al. Congenital Chagas disease: recommendations for diagnosis, treatment and control of newborns, siblings and pregnant women. *PLoS Negl Trop Dis* 2011;5(10):e1250.

Legends:

Fig 1-Placenta B showed marked necrotizing villitis(1a), with numerous villous amastigotes within pseudocysts in necrotic foci(1b)(arrows). Immunohistochemistry for *T. cruzi* labeled numerous amastigotes within villi(1c).

Disclaimer: The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Acknowledgements: The authors thank Theresa Benedict of the Parasitic Diseases Branch, for performing the PCR assays, and the histology and immunohistochemistry teams of the Infectious Diseases Pathology Branch, at the Centers for Disease Control and Prevention.

Funding:

The authors received no financial support for the research, authorship, and/or publication of this article.

Declaration of Conflicting Interests:

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

