

CLINICAL PRACTICE

Mebendazole is the current drug of choice for pinworm infection. Although it may temporarily alleviate the symptoms of *Dipylidium caninum*, it will not eliminate the tapeworm.⁷ Misdiagnosis is quite common and it is difficult to find data concerning misdiagnosis studies involving pinworm and *Dipylidium caninum* infections. Laboratory testing for pinworm infection ranges from \$26-\$50 and treatment with Mebendazole ranges from \$50-\$100.^{12,13} These costs are in addition to doctor/hospital visit fees. Often, a young patient is misdiagnosed two to three times before a correct diagnosis of *Dipylidium caninum* is achieved. This case should raise awareness that *Dipylidium caninum* can mimic pinworm infection, and appropriate laboratory diagnosis should be pursued to avoid unnecessary healthcare costs.

Some recommendations for prevention of *Dipylidium caninum* infection are:^{4,6}

- ~ Avoid allowing children to play with animals that have fleas.
- ~ Monitor and control flea infestation in pets. Periodic administration of products available to prevent fleas will reduce the risk of infection.
- ~ Avoid exposure to dog or cat feces (especially in public recreational areas & sandboxes).
- ~ Avoid allowing pets to kiss or lick children.

CONCLUSION

Human infections with *Dipylidium caninum* are often underdiagnosed and can easily be confused with pinworm infections. Since pinworms are a more common pediatric problem, it is often diagnosed based on clinical symptoms. Laboratory testing should be pursued in order to make an accurate diagnosis. The presence of characteristic egg packets and/or proglottids confirms the diagnosis of *Dipylidium caninum*. For treatment purposes, it is important to make a differential diagnosis between pinworm and *Dipylidium caninum*. Treatments other than Praziquantel or Niclosamide may not be effective in completely eliminating *Dipylidium caninum*. It is important to prevent infections by controlling interaction between

children and pets, maintaining an environment free of fleas, and keeping pets healthy.

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REFERENCES

1. Kiser KM, Payne WC, Taff TA. Clinical Laboratory Microbiology: A Practical Approach. Boston: Pearson, 2011.
2. Koneman EW, Allen SD, Janda WM, Schreckenberger PC, Winn WC. Color Atlas and Textbook of Diagnostic Microbiology. 5th ed. Philadelphia: Lippincott, 1997.
3. Mahon CR, Lehman DC, Manuselis G. Textbook of Diagnostic Microbiology. 4th ed. Missouri: Saunders, 2011.
4. Garcia LS. Diagnostic Medical Parasitology. 5th ed. Washington D.C.: ASM Press, 2007.
5. Neafie RC, Marty AM. Unusual Infections in Humans. Clin. Microbiol. Rev. 1993;January(6):37-9.
6. Hodgson E, Knapp E. 2003. *Dipylidium caninum* [Internet], Animal Diversity Web. Accessed June 28, 2010 at http://animaldiversity.ummz.umich.edu/site/accounts/information/Dipylidium_caninum.html.
7. Samkari A, Kiska DL, Riddell SW, Wilson K, Weiner LB, Domachowske, JB. *Dipylidium caninum* Mimicking Recurrent *Enterobius vermicularis* (Pinworm) Infection. Clinical Pediatrics [Serial online]. 2008 May;47(4):397-9. Available from CINAHL plus with full text, Ipswich, MA. Accessed February 19, 2010.
8. DPDx: *Dipylidium caninum* infection. Available at: http://www.dpd.cdc.gov/dpdx/HTML/ImageLibrary/Dipylidium_il.htm. Accessed May 6, 2011.
9. Ash L, Orihel TC. Atlas of Human Parasitology. 4th ed. Chicago: American Society of Clinical Pathologists; 1980.
10. Molina CP, Ogburn J, Adegboyega P. Infection by *Dipylidium caninum* in an Infant. Arch Pathol Lab Med. 2003 March;127:157-9.
11. Drugs.com. Praziquantel: Wolters Kluwer Health. 2009 [Cited 2011 May 6]. Available at <http://www.drugs.com/ppa/praziquantel.html>.
12. Mebendazole: Every Day Health. 1996-2011 [Cited 2011 June 21]. Available at <http://everydayhealth.com/drugs/mebendazole>.
13. Lab Test: Pinworm Preparation: The Ohio State University Medical Center [Cited 2011 June 21]. Available at <https://clinicallabs.osumc.edu/Lists/Lab%20Tests/DispForm.aspx?ID=922>.

ERRATA: In the Spring 2011 Volume of Clinical Laboratory Science on page 85 in the Introduction it states "There are two forms of the illness...*Trypanosoma brucei rhodesiense* (west african)...*Trypanosoma brucei gambiense* (east african)". These should instead state east and west respectively.