

## Abnormal *Trichuris trichiura* eggs detected during an epidemiological survey

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Abnormal eggs of *Trichuris trichiura* were found in the stools of one of the patients during a study on the prevalence of intestinal parasitoses among an institutionalized population. The abnormalities observed included great variation in shape, size, and color. Similar atypical whipworm eggs have been reported in patients after treatment with mebendazole, thiabendazole, tetrachloroethylene, and dithiazanine. Apparently some

anthelmintics have an effect on the reproductive system of female *T. trichiura*, resulting in production of abnormal eggs, which could lead to misdiagnosis of the infection, since they can be mistaken as eggs of other parasites or artifacts.

*Key words:* *Trichuris trichiura*, Abnormal eggs, Epidemiological survey.

**T***richuris trichiura* infestation is cosmopolitan in distribution, with the highest prevalence in tropical areas where poor sanitary conditions are present. This parasite is the third most prevalent nematode of humans after ascariasis and hookworms, affecting approximately 800 million people worldwide (1). The diagnosis of trichuriasis is routinely made by coproscopy, finding typical barrel shaped eggs with unstained polar plugs that measure 50 to 54 mm by 22 to 23 mm (Figure 1). During an epidemiological study, conducted in an institution for the mentally retarded in Puerto Rico to determine the prevalence of intestinal parasites among patients and staff, one of the patients was detected to be infected with *Trichuris* that produced abnormal eggs. The fecal sample was examined by direct smear (2), zinc sulfate flotation-concentration method (3) and by Harada-Mori culture (4). No adult worms were recovered from the patient.

### Case description

A male patient who had been in an institution for the mentally retarded for many years was found harboring *Trichuris* that produced abnormal eggs. The patient

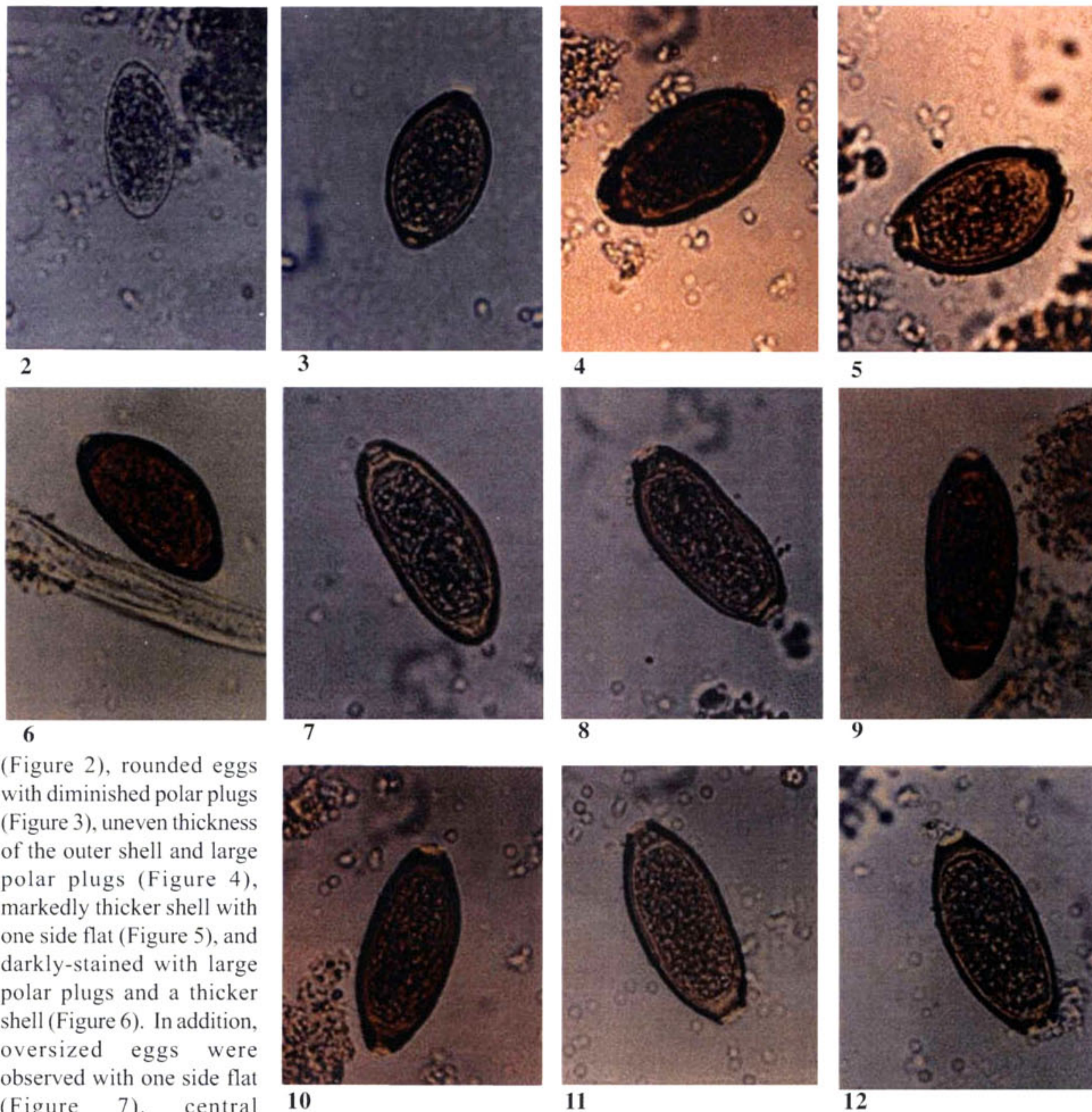
received mebendazole three years prior to the stool examination and was currently taking several other medications, including Thorazine® (Clorpromazine), Axid® (Nizatidine), Librax® (clordiazepodal concludinium), Maalox®, and Reglan® (metaclopramide). Most of the *Trichuris* eggs observed varied in shape, size, and color from typical *T. trichiura* eggs (Figure 1). The abnormalities included: eggs lacking the outer shell and polar plugs



**1**  
**Figure 1.** Typical *T. trichiura* egg

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(Figure 2), rounded eggs with diminished polar plugs (Figure 3), uneven thickness of the outer shell and large polar plugs (Figure 4), markedly thicker shell with one side flat (Figure 5), and darkly-stained with large polar plugs and a thicker shell (Figure 6). In addition, oversized eggs were observed with one side flat (Figure 7), central constrictions (Figure 8), darkly-stained with unequal polar plugs (Figure 9), narrow polar plugs (Figure 10), and eggs with uneven polar plugs (Figures 11-12).

### Discussion and Conclusions

Examination of the patient's medical records revealed that he received mebendazole three years prior to the stool examination. The production of abnormal *T. trichiura* eggs could be attributed to mebendazole, however, since the patient was currently taking several other medications,

**Figures 1-12.** *T. trichiura* eggs (750 X). Typical egg (Figure 1). Atypical eggs (Figures 2-12). including Thorazine® (Clorpromazine), Acid® (Nizatidine), Librax® (clordiazepodal concludinium), Maalox®, and Reglan® (metaclopramide), the effect of the other medications on the worms cannot be ruled out. Only few investigators have detected abnormal *T. trichiura* eggs after antihelminthic treatment with mebendazole (5), thiabendazole (6), tetrachloroethylene (7) or dithiazanine (8). Most of the abnormalities in the eggs of *T. trichiura* that were observed in this study were comparable to those previously reported. Some similarities are enlarged and diminished eggs, absence of one or both polar plugs, eggs

with reduced polar plugs, and asymmetry of the sides and poles, including flat sides. The unipolar and tripolar eggs discovered after treatment with mebendazole (5) and thiabendazole (6) were not found in this study, nor were the quadrangular eggs seen after treatment with mebendazole (5) and tetrachloroethylene (7).

This report describes a case of trichuriasis in which morphological alterations in the eggs of *Trichuris* were observed after antihelminthic treatment, and suggests the possibility of malformation of eggs in adult female worms after therapy. The presence of oddly shaped *T. trichiura* eggs could lead to misdiagnosis of the infection, as they can be mistaken for other eggs of other parasites, e.g. *Capillaria hepatica*, *Trichuris vulpis* and *Eucoleus gastricus* or artifacts. It is important to alert both the diagnostic personnel and the physicians that certain human parasites, especially those with hologonic ovary, can produce abnormal eggs after therapy. The awareness of this fact is necessary to ensure accurate diagnosis of the infections and proper management of infected patients.

### Resumen

En un estudio para determinar la prevalencia de parásitos intestinales en una población institucionalizada en Puerto Rico, se detectó que uno de los pacientes producía huevos de *Trichuris trichiura* con alteraciones morfológicas. Entre las irregularidades se observaron variaciones en forma, tamaño y color. Huevos atípicos similares a éstos han sido reportados en pacientes tratados con mebendazol, tiabendazol, tetracloretileno y dithiazanine. Aparentemente algunos antihelmínticos pueden afectar el sistema reproductor femenino de *T. trichiura*, resultando en la producción de huevos anormales, lo cual puede llevar a un diagnóstico erróneo ya que los mismos pueden confundirse con huevos de otros parásitos o artefactos.

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