

Enterobius vermicularis Ova in a Vaginal Smear

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Enterobius vermicularis is one of the most common parasites found in the intestine of humans. The gravid female worms migrate outside the anus to release eggs on the perianal skin. Rarely, they migrate to the genitourinary tract in female patients. We present a case in which pinworm eggs were found in a cervicovaginal smear of a 37-year-old woman. The eggs were elongated oval shaped and flattened on one side. The thick, double contoured birefringent shell stained bright yellow or orange. Some coarsely granular embryos or curved larvae were enclosed in the refractile shell. Empty eggs or wrinkled shells with clumped granular material were also present. Although pinworm eggs are easily identified because of their characteristic morphologic appearance, careful screening is needed due to the frequent masking by inflammatory cells.

Key Words : Enterobius; Ovum; Vaginal smears

Enterobius vermicularis is commonly called pinworm, and this is the most common helminthic parasite of humans. Pinworm infection is initiated by the ingestion of the infective eggs which hatch in the small intestine and develop into the adult worms in the cecum. The fertilized female worms migrate down to the perianal and perineal region at night to lay eggs. They also may migrate into the vagina, so the ova or larvae are sometimes observed in the cervicovaginal smears. We present here a case of pinworm ova that were found in routine Papanicolaou smears.

CASE REPORT

A 37-year-old woman attended the hospital for an annual check-up. She had no clinical symptoms like vaginal discharge or itching. The cervicovaginal smear with Papanicolaou staining demonstrated grouped or individually scattered pinworm eggs in an inflammatory background (Fig. 1). The eggs were elongated, oval shaped and flattened on one side. The thick, double contoured birefringent shells stained bright yellow or orange. The refractile shells contained coarsely granular embryos or curved

larvae (Fig. 2). A small numbers of empty shadow eggs or wrinkled shells enclosing clumped granular material were present (Fig. 3). No eosinophils or histiocytes were seen. The patient didn't undergo stool examination or a peripheral blood eosinophil count.

DISCUSSION

E. vermicularis is one of the intestinal parasites. The fertilized female worms migrate to the perianal skin and perineum to lay eggs. Sometimes, they also migrate into the reproductive system of women. Limited cases of ectopic enterobiasis have been reported in the vagina, ovary, salpinx and peritoneal cavity throughout the world.¹⁻³ In Korea, a live pinworm has been previously reported in the vagina of a 33-year-old woman.⁴

Vaginal parasite or eggs can cause vaginitis and vaginal discharge, but they do not always produce symptoms. Less than 30% of the reported case had clinical symptoms. Massive acute inflammatory exudates found in a pap smear suggest the probability of worm infestation of the vagina, whereas pinworm ova in the clean background could be contamination from an adjacent

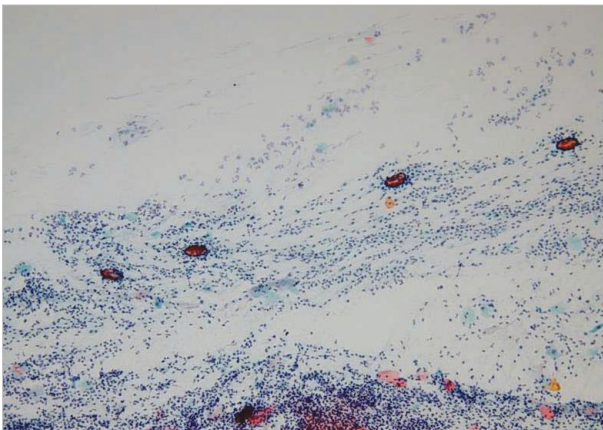


Fig. 1. The pap smear shows many inflammatory cells and scattered eggs.

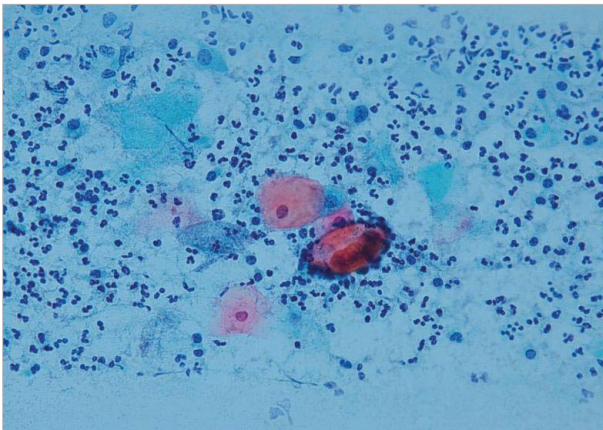


Fig. 3. The egg has a wrinkled shell and clumped granular material.

infected site, such as the perineal area. Cytologic examination might be the only method to detect parasitic infection in asymptomatic cases. The reported parasites found in cervicovaginal smears are *Entamoeba histolytica*, microfilaria, *Strongyloides stercoralis*, *Schistosoma hematobium*, *Trichuris trichiura*, *Enterobius* and *Ascaris* ova.^{5,6}

Pinworm eggs have a characteristic morphologic appearance. They have an elongated shaped and they are flattened on one side; they measure 55-60 μm in length by 25-30 μm in width. Some coarsely granular embryos or curved larvae are enclosed in the thick, double contoured birefringent shell. Fragmented eggs with emerging coarse granules or coarse granules without shells have been described as uncommon morphologies.⁷ This present case

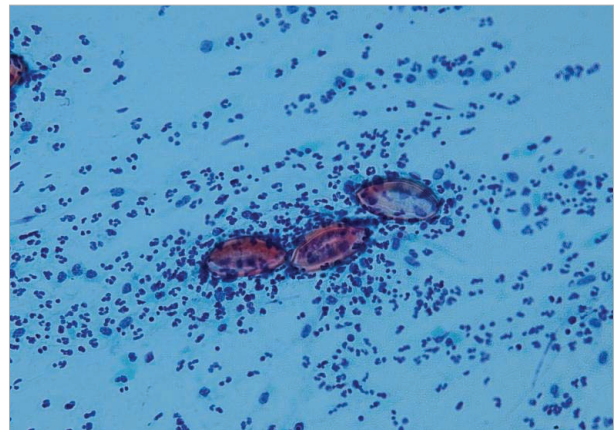


Fig. 2. The pinworm eggs are elongated, oval shaped and flattened on one side and they have curved larvae.

also showed empty eggs or wrinkled shells with clumped granular material.

The observation of pinworm eggs in a cervicovaginal smear may be an incidental finding. They should not be confused with other parasite ova or with contaminant vegetable cells.

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