

## Live female *Enterobius vermicularis* in the posterior fornix of the vagina of a Korean woman

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**Abstract:** A 33-year-old Korean woman, para 2, visited an obstetrics and gynecology clinic, Kumi-shi, Kyongsangbuk-do, due to postcoital spotting and flank pain. She had a tubal ligation 7 years before and demonstrated back pain during menstruation. She revealed a foul smelling discharge without complaint of itching. *Enterobius vermicularis* eggs were demonstrated during microscopic examination of a smear taken from the posterior fornix of the vagina. On endoscopic examination of her vagina, a live worm was found in the posterior fornix. The worm was removed and identified as a female *E. vermicularis* based on morphology. This is the first case report of vaginal enterobiasis in Korea.

**Key words:** *Enterobius vermicularis*, eggs, adult worm, Korean woman, vagina

*Enterobius vermicularis* has the widest geographic distribution and is the most common helminthic parasite in temperate regions. The adult pinworms inhabit the cecum. Gravid females migrate to the rectum, emerge on the perianal skin and perineum at night, and deposit eggs. Ectopic enterobiasis occasionally occurs in school-girls, but is rare in adults (Kacker, 1973). Gravid females also may migrate into the reproductive system of women (Deshpande, 1992) where the ova (Shipton *et al.*, 1973; Moscolo *et al.*, 1979; Garud *et al.*, 1980; Bhambhani *et al.*, 1985; Demirezen and Karayazgan, 1986) or larvae (Cristobal and Mundi, 1976) of the pinworm are observed in cervicovaginal smears. Invasion of the human ovary (Beckman and

Holland, 1981) and salpingitis (Saffos and Rhatigan, 1977) by the pinworm are infrequently reported. Several cases of ectopic enterobiasis in the peritoneal cavity of patients also have been recorded (Beddoe, 1956; Campbell and Bowman, 1961; Brooks *et al.*, 1962; Broderick, 1963; Leigh and Saylor, 1964; Arthur and Tomlinson, 1968; Sjovall and Akerman, 1968; Fitzgerald *et al.*, 1974). While there have been limited case reports of ectopic enterobiasis throughout the world, this is the first ectopic enterobiasis case reported from Korea.

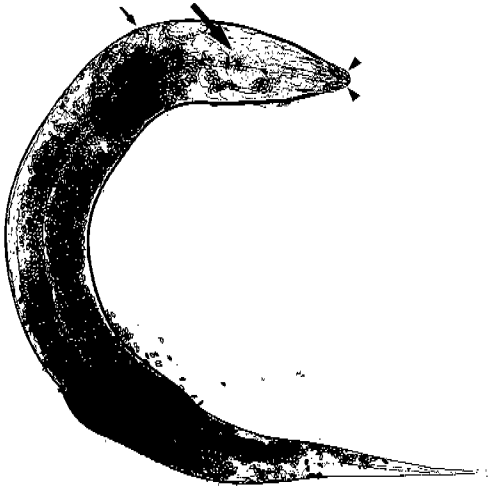
A 33 years old Korean woman, para 2, visited an obstetrics and gynecology clinic, Kumi-shi, Kyongsangbuk-do, due to postcoital spotting and flank pain. She had had a tubal ligation 7 years ago and demonstrated back pain during menstruation. She revealed foul smelling discharge, but complained of no itching. *E. vermicularis* eggs were demonstrated during microscopic examination

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**Fig. 1.** An embryonated egg of *Enterobius vermicularis*. Bar indicates 20  $\mu$ m.



**Fig. 2.** An adult female *E. vermicularis* recovered from the posterior fornix of vagina. The worm shows circumoral alae (arrow heads), esophageal bulb (large arrow) and vaginal opening (small arrow).

of a smear taken from the posterior fornix of the vagina (Fig. 1). On endoscopic examination, erosion of the cervix was observed and a live worm was found in the posterior fornix of the vagina. The worm was removed, transferred to our laboratory, and identified as a female *E. vermicularis* based on morphology. The morphological features were as follows.

The worm measured 8.96 mm in length and 0.64 mm in width and was dorsally curved (Fig. 2). The anterior end had circumoral alae.

The tail sharply pointed. The esophagus dilated posteriorly into a bulb. The vulva opened ventrally at the anterior one third. The vagina extended posteriorly from the vulva, branching and forming paired uteri. The uteri markedly distended, but about half filled with eggs. Some eggs were also distributed in the posterior end of the uterus.

We were unable to provide medical follow-up on the patient. It is unclear whether the patient's symptoms were ascribed to the pinworm infection or other causes. However, the pinworm at ectopic sites may no doubt lead to inflammation and other symptoms, though its invasiveness to tissue is regarded minimal. Vaginal enterobiasis like the present case may give rise to leukorrhoea. It was fortunate to remove the worm before the requirement for surgery due to complications. It is necessary to pay more attention to ectopic enterobiasis in females with regard to potential surgical complications.

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=초록=

### 한국 성인 여성의 질에서 발견된 요충 성충

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1995년 12월 2일 33세의 한국 여성이 성교 후 점상 출혈과 복통을 주소로 경상북도 구미시의 한 산부인과원을 방문하였다. 환자는 2회의 출산을 하였고, 7년 전 난관결찰을 시술 받은 바 있으며, 월경 시에는 요통이 있었다고 하였다. 환자 질 분비물은 악취가 났으나 가려움증을 호소하지는 않았다. 질의 후원개에서 채취한 검체 도말에서 요충란이 관찰되었다. 질 내시경으로 질의 후원개에서 살아있는 충체를 검출하였고, 형태학적 관찰에 의거하여 요충의 자충으로 동정하였다. 이 증례는 한국 성인 여성에서 발생한 요충의 질내 이소기생충의 제1례이다.

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