

A 4-year-old girl is brought to the office for evaluation of "itchy private parts" for the past week. Her mother first noticed the scratching at bedtime but not during the day. The patient does not have urinary symptoms and defecates once every other day. Her medical history is notable for a urinary tract infection at age 3 and atopic dermatitis. The patient lives at home with her mother, step-father, and 13-year-old step-brother, none of whom have similar symptoms. On physical examination, the vulva is erythematous and there is no vaginal discharge. The perianal area is excoriated and erythematous. The remainder of the examination is notable for dry, erythematous skin in the antecubital and popliteal fossae. What is the most likely cause of this patient's symptoms?

- ☐ A. Atopic dermatitis
- ☐ B. Candidal vulvovaginitis
- ☐ C. Helminth infection
- ☐ D. Lichen sclerosus
- ☐ E. Sexually transmitted infection
- ☐ F. Urinary tract infection

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- ☐ A. Atopic dermatitis [37%]
- ☐ B. Candidal vulvovaginitis [8%]
- ☒ C. **Helminth infection** [45%]
- ☐ D. Lichen sclerosus [6%]
- ☐ E. Sexually transmitted infection [4%]
- ☐ F. Urinary tract infection [0%]

[Proceed to Next Item](#)**Explanation:**

User Id: [REDACTED]

<i>Enterobius vermicularis</i> (pinworm)	
Symptoms	Perianal pruritus, especially at night
Diagnosis	Eggs on tape test
Treatment	Albendazole OR pyrantel pamoate for patient & all household contacts

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Pinworm (*Enterobius vermicularis*) infection is common in school-age children and typically presents with **nocturnal perianal pruritus** (pruritus ani). Vulvovaginitis may also be a presenting symptom in prepubertal girls. Transmission occurs via contact with contaminated objects (eg, bedding, clothing) or unwashed hands after scratching the

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Diagnosis is made via the "**tape test**" in which an adhesive is pressed on the perianal area (ideally in the morning or at night) and eggs and/or pinworms are visualized on the adherent material under microscopy. Treatment with **albendazole** or **pyrantel pamoate** is recommended for the patient and the household to avoid reinfection.

(Choice A) Atopic dermatitis in school-age children presents as dry, thickened, erythematous plaques on flexor surfaces (eg, popliteal and antecubital fossae). The groin and genitals are typically spared, and symptoms would be present throughout the day.

(Choice B) Candidal vulvovaginitis presents with vaginal pruritus, erythema, and discharge. A healthy, prepubertal patient commonly has a history of recent antibiotic use, and physical examination would not show perianal abnormalities.

(Choice D) Lichen sclerosus can cause perianal and vulvar pruritus as well as vaginal discharge or bleeding. Physical examination may show hypopigmentation and ecchymoses of the affected area. This patient's physical examination is not consistent with lichen sclerosus.

(Choice E) Sexual abuse and sexually transmitted infections can present with vulvar and perianal symptoms; however, other typical physical examination findings include abrasions, bleeding, and vaginal discharge. This patient does not have signs of trauma, and her nocturnal symptoms are consistent with pinworm infection.

(Choice F) Urinary tract infections can present with dysuria, suprapubic pain, and/or fever. Perianal pruritus and excoriation would not be present.

Educational objective:

Pinworm infection presents with nocturnal perianal pruritus and occurs most commonly in school-age children. Both vulvar and perianal erythema may be present, and diagnosis is confirmed by visualization of organisms on the "tape test."

References:

Pinworm (*Enterobius vermicularis*) infection is common in school-age children and typically presents with **nocturnal perianal pruritus** (pruritus ani). Vulvovaginitis may also be a presenting symptom in prepubertal girls. Transmission occurs via contact with contaminated objects (eg, bedding, clothing) or unwashed hands after scratching the perianal area. Although adult worms live in the intestines, females migrate distally to deposit eggs onto the perianal skin, primarily at night, causing symptoms.

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References:

1. [Pruritus ani: an approach to an itching condition.](#)