A Painful Furuncle-like Nodule on the Scalp

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CASE REPORT

A 40-year-old healthy male physician presented with a painful erythematous swollen nodule on the scalp for a two-week's duration after returning from a trip to Peru. He didn't recall any insect bite during the trip. Approximately one week after returning home he noticed a small papule with intermittent episodes of pain on the scalp. He thought that the lesion might be a folliculitis and topical antibiotic was applied. However, the lesion didn't improve and progressed to a nodule with some bloody discharge. In addition, patient occasionally felt a sensation of slight movement within the lesion. His wife said that there seemed to be something emerging from the lesion. At the initial visit, the clinical diagnosis was furuncle or inflamed follicular cyst and oral and topical antibiotics were prescribed for 10 days without any clinical response. Incision and drainage was performed. During the procedure, a white moving tube-like process protruded out from the incision site. A whitish worm was gently extracted from the nodule. The patient was then referred to our department's clinic for further evaluation. Examination of the scalp revealed a small crusted lesion on the scalp (Fig. 1). The worm had three rows of black, backward-pointing spines on the body (Fig. 2).

Fig. 1
A crusted lesion on the scalp.

Fig. 2
An intact 1.3 cm whitish worm with three rows of black, backward-pointing spines on the body.

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DIAGNOSIS: Cutaneous Myiasis due to Dermatobia hominis

DISCUSSION

Myiasis is an infestation of human organs or tissues by the larva of dipterous (two-winged) flies that feed on living or necrotic tissues. Several fly species must develop in the living tissues of a host. This is termed obligate myiasis. The flies have a unique way of delivering eggs to a new host. The adult D. hominis fly is a non-biting insect. The adult female captures and tightly holds a mosquito or other biting arthropod and glues up to 30 eggs to its abdomen. The carrier insects later feed on warm-blooded hosts such as cattle, domestic stocks or humans, then the eggs hatch into the first-stage larvae and penetrate the host's skin within 5 to 10 minutes. The first-stage larvae develop into second-stage and third-stage larvae and reach maturity inside a subdermal cavity of the host and breathe through a breathing tube opening to the external air. In about 5 to 10 weeks the mature larvae exit the host and drop to the soil, and pupate. The worm extracted from the present patient was a second-stage larva based on the morphology.

Cutaneous myiasis occurring in humans due to Dermatobia hominis (human botfly) is an obligate myiasis and a common disease in endemic and tropical regions including Mexico and Central and South America. The usual host of D. hominis is livestock mammals; humans are accidentally infested. The disease can be fatal in cattle infested with hundreds of larvae, but it is usually an uncomplicated self-limited disease in humans.

All clinical cases due to D. hominis reported in Europe and Asia are imported from Central and South America. Clinically, cutaneous myiasis resembles a common insect bite at first. The lesions are most commonly seen on unprotected areas including the hands, legs, head and neck. The larvae cause an inflammatory reaction, resulting in a furuncle-like nodule with pain or sensation of movement while the larvae move. The lesions are often confused with insect bites, folliculitis or furuncle, although secondary bacterial infection may occur. Cutaneous myiasis is easily misdiagnosed in non-endemic areas such as Taiwan because of its rarity and unfamiliarity. Cutaneous myiasis should be considered in those patients who present with furuncle-like lesions unresponsive to antibiotic treatment and have been in endemic areas recently.

The treatment of choice is removal of the larvae followed by administration of systemic and topical antibiotics to control or prevent secondary infection. The larvae must be gently extracted for fear of rupturing them and causing secondary infection, foreign body granuloma or calcification. Another alternative treatment is to suffocate the larvae by occluding the breathing opening with sealing ointment and then forces the larvae to migrate out of the skin.

REFERENCES