

Imported cutaneous myiasis in a child and her father

A 5 years old female presented to the Emergency Department complaining a pruritic and painful nodular lesion on the left preauricular area of the face which appeared about two weeks before the admission to the hospital. While in lack of fever or any other constitutional symptoms, she reported an uncomfortable "movement" sensation localized within the lesion. At the physical examination, the lesion appeared erythematous with an ulcerated surface, firm but mobile on the underlying stages (Fig. 1, A). The remaining findings were normal except for a slight cervical and bilateral lymphadenopathy. The echography showed an hypointense area of 2×1 cm, including an hyperintense formation with vascularization and apparent inherent movements (Fig. 1, B). The history revealed a recent travel in Costa Rica and the presence of a similar lesion on the scalp of the patient's father. When the parent's lesion was examined, it showed a draining central stoma on the surface from which a fusiform maggot could be seen protruding periodically (Fig. 1, C1–C2). The surgical procedure performed on the girl resulted into the excision of a stage III larva of *Dermatobia hominis* and led to an immediate relief of the described symptoms (Fig. 1, D).

Myiasis (Greek, myia = a fly) is defined as the invasion of humans, other mammals and birds by the larvae of dipterous insects (two-winged flies). Clinical manifestations of cutaneous myiasis could be different and include open-wound myiasis, subcutaneous tunnels or "creeping eruption," subcutaneous myiasis with migratory swellings, and furuncular myiasis, each one depending on the anatomic location of the invasion and the relationship established between the larvae and the host [1].

Dermatobia hominis, also known as the human botfly is the most common cause of furuncular myiasis in Latin America. This fly spends 5–10 weeks of its life cycle parasitizing as larval form both birds and mammals. When the adult *D. hominis* female is ready to oviposit, she captures a blood-sucking arthropods (usually a mosquito) and uses it as a vector in a method of egg delivery called *phoresis*. She lays eggs to the body of the captured carrier by using a glue-like substance, then releases the vector unharmed. When the vector lands on a mammalian host for a blood meal, the larvae emerge from their egg membranes to enter the skin of the host. The entrance is characteristically painless, usually accomplished on exposed skin sites through the insect puncture site, as well as by invading intact skin or hair follicles. Once a larva penetrates, it will feed in a subcutaneous cavity over a period of 5–10 weeks while undergoing three instars. First, it embeds itself inside the host's flesh using its hooked mouth to form a breathing hole from which it can be seen protruding periodically. As it matures, the developing larvae enlarge its subcutaneous cavity and moves deeper into the tissues. This migration along with the movements of the organism, is responsible for the sensation which many hosts describe as a "crawling" sensation, often associated with pain. When fully grown, the larva emerges through its breathing orifice, to drop into the ground, and enters the soil where it

completes its metamorphosis to pupa and adult fly [2,3].

The characteristic presentation of *D. hominis* infestation is a single furuncular lesion located on exposed body sites such as head, scalp, neck, face, ears or eyes. The extremities are often involved while less frequently lesions are found on the back, gluteus, penis and scrotum. The lesion appears within 24 hours from the larva deposition and usually resembles an insect bite, being erythematous and dome-shaped. As it indurates and enlarges, it may begin to discharge small amounts of serous, serous-hematic or purulent secretion by the first or second week. At this stage the patient can experience pruritis and a crawling sensation within the lesion associated with localized pain [4].

Although cases of visceral infestations are possible, the human botfly typically does not pose serious threats beside being extremely irritating. *Dermatobia hominis* may resemble folliculitis, a furuncle, an epidermal cyst, a foreign body with secondary impetigo. The diagnosis is based upon clinical presentation plus history of travel to endemic areas. Laboratory findings are usually normal or may indicate systemic inflammation, peripheral eosinophilia, and elevated immunoglobulin E levels. Ultrasound may confirm the infestation and facilitate the complete removal of the larva [5].

Treatment typically involves surgical removal of the larvae with possible, but not always necessary, administration of systemic antibiotics. After extraction of the larvae, symptoms generally disappear and the recovery is typically complete. Other therapeutic options include manual removal of larvae sometimes preceded by the application of suffocating occlusive substances which restricts oxygen flow and forces the larvae to move on the surface for respiration. Secondary infections are rare [6].

Skin diseases are responsible for the 8–12 % of all reported medical problems among tourists. Out of them, myiasis is in the top five of most common dermatologic conditions, representing 7.3–11 % of skin diseases that occur while traveling to endemic areas [7]. The actual increase of international travels calls for widespread myiasis awareness, necessary for identification of this disease especially in countries where the infestation is unusual. A timely diagnosis is important not only to alleviate the patient's symptoms, but also to avoid unnecessary administration of antibiotics. *D. hominis* need to be included in differential diagnosis when patients present with a pruritic or painful papule, reporting a recent travel in tropical destinations.

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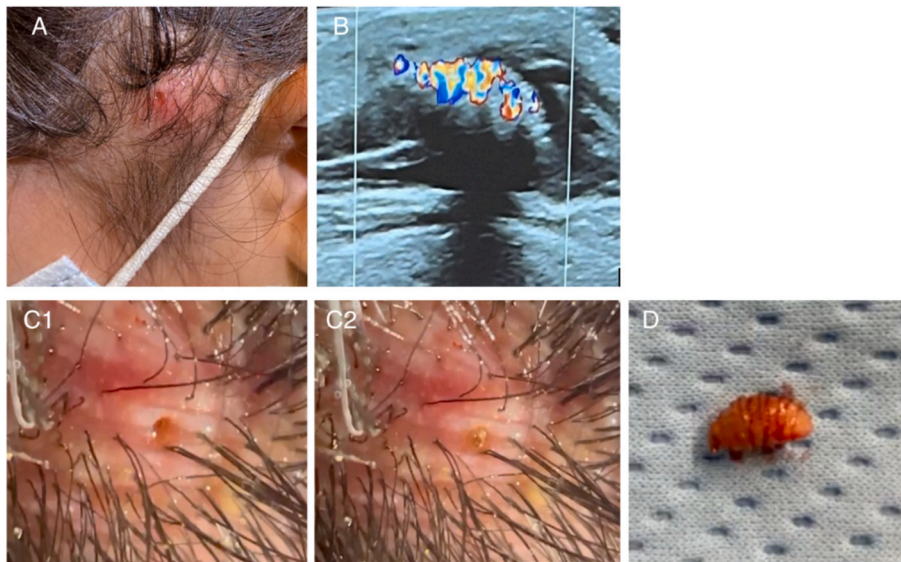


Fig. 1. Written informed consent from patient was obtained for the publication of this case.

Declaration of competing interest

Nothing to declare.

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