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Case History: Jigger infestation

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A 21 year old man was complaining of pain in a toe with swelling, which was interfering with his walking. The lesion was itchy and nodular. He thought he had been bitten and the insect had left a bump and black mark on the skin. Over a few days the lesion had shrunk in size, turned brown, and wrinkled. He had recently returned from a Caribbean holiday and had been swimming and walking bare foot on the sands.

He had been bitten by a sand fly. *Tunga penetrans* (chigoe flea or jigger) is a parasitic insect found in most tropical and sub-tropical climates. It is native to Central and South America, and has been introduced by humans to sub-Saharan Africa. In its parasitic phase it has significant impact on its host. A parasitical infestation of *T. penetrans* is called tungiasis.

Tungiasis is a result of penetration of the skin by a sand (or jigger) flea usually between the toes or under toenails. The infection is acquired by walking barefoot in regions where *T. penetrans* is found (beaches or sandy soil).The tiny female flea (approx. 1 mm), burrows into the outer layer of the skin, generating the characteristic white papule or nodule with a central black point. The burrowing process is asymptomatic, but the flea increases in size in about two weeks, creating a pruritic or painful nodular lesion from which eggs and faeces are excreted. Then the flea usually dies and is sloughed with the hosts' skin over several weeks.[1]

T. penetrans is the smallest known flea and is a minute arachnid most recognizable in its parasite phase. It lives mainly 2 to 5cm below sand surface. Tungiasis lesions almost always occur on the feet (97%), but may occur on any part of the body.[2] The toes are afflicted over 70% of the time, with periungual folds a preferred site.[1]

As the flea loses its signs of vitality and nears death, the lesion shrinks in size, turns brown, and appears wrinkled. After the death of the flea the body begins to eliminate the parasite through skin repair mechanisms (e.g. shedding and subsequent skin repair). If the flea is left within the skin, complications can occur including secondary infections from trapped bacteria such as staphylococcal, streptococcal and tetanus bacteria. Lingering effects may include loss of toenails and toe deformation, especially where heavy infestations combine with unsanitary conditions and poverty.[3] The most useful treatments in this setting are oral antihistamines, topical steroids, antibiotics effective against bacterial skin infection, and a booster for tetanus.[4]

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