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Case Report

Case History –A Painful Toe

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 parasitological infestation of *T. penetrans* is called tungiasis.

Tungiasis affects people walking barefoot on sandy beaches or sub-soils. The infection is acquired in locations where *T. penetrans* is found and can penetrate unprotected skin. The sand (or jigger) flea attacks between toes and under toenails. The female flea burrows into the outer layer of the skin, in an asymptomatic burrowing process, creating a characteristic white papule or nodule with a central black point. Once in situ, the flea increases in size over 10 to 14 days, creating an itchy and painful nodular lesion. In due course eggs and faeces are excreted from the nodule when the flea dies and is sloughed off the victim's skin over several weeks.

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

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 staph, strep, enterobacteria, tetanus, 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, booster for tetanus [4].

References

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