

Scalp of a child with fly infestation



A: Circular ulcers on the child's scalp.



B: Removal of larvae with toothpicks. ♦

A maggoty scalp

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TO THE EDITOR: A 4-year-old girl presented with a flyblown scalp to a district aid post outside Madang, Papua New Guinea (PNG). Coincidentally, we were present at the aid post in our capacity as students and lecturers in the tropical paediatrics module of the James Cook University Masters in Public Health and Tropical Medicine course. The child was otherwise

healthy, and her scalp had been normal until about 2 days previously, when her mother noticed two developing "sores". These had deteriorated into circular, foul-smelling ulcers about 1.5 cm in diameter and 2 cm apart on the crown of her head (Box, A), in which live maggots could be seen squirming.

The child's mother had extracted some maggots with a pair of toothpicks (Box, B), and about 10 more were removed at the aid post with tweezers. When no further movement was apparent in the wounds, they were covered with petroleum jelly to suffocate any "stragglers". No dead larvae were seen the following morning, and the wounds healed rapidly.

We believe the most likely culprit was *Chrysomya bezziana*, or Old World screw-worm fly, although we were unable to preserve a larva for formal identification (by "curing" in very hot water and transporting in 70% ethanol). Old World screw-worm fly is an obligate myiasis-producing fly endemic in PNG. Its larvae are found only in living vertebrate tissues. The child's mother had not noticed a prior lesion, and we assumed entry was through a graze on the scalp.

Although screw-worm fly is endemic throughout tropical and subtropical regions of Asia and Africa, it is not found in

Australia. If it became established here, it could devastate the livestock industry, particularly by striking the umbilical region of newborn calves and infesting their abdominal contents.¹ The fly is known to be able to travel 100 km,² further than the distance between the islands of Torres Strait, but has not yet migrated from PNG to Australia.

It could also be introduced in livestock vessels returning from Asia or the Middle East; the Australian Quarantine and Inspection Service has strict regulations to prevent this, with all returning vessels thoroughly cleaned before reaching Australian waters. This is justified as it has been documented that sheep shipped from Australia arrived in Bahrain with fly infestation. Presumably, flies were attracted to the ship as it passed the coast of Oman or the United Arab Emirates.³ Infestation is self-promoting, as ovipositing females are particularly attracted to the odour of an existing myiasis, resulting in expansion of the lesion. In our patient, the application of petroleum jelly to the lesions fortuitously covered the odour, reducing the likelihood of reinfestation.

Ivermectin is useful in treating affected animals,⁴ as well as humans⁵ when the larvae cannot be physically extracted.

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¹ Australian Government Department of Agriculture, Fisheries and Forestry. Screw-worm fly. <http://www.daff.gov.au/animal-plant-health/pests-diseases-weeds/animal/screw-worm-fly> (accessed Jul 2008).

² Spradberry JP, Mahon RJ, Morton R. Dispersal of the Old World screw-worm fly *Chrysomya bezziana*. *Med Vet Entomol* 1995; 9: 161-168.

³ Kloft WJ, Noll GF, Kloft ES. Introduction of *Chrysomya bezziana* Villeneuve (Dipt., Calliphoridae) into new geographic regions by transit infestation. *Mitt Dtsch Ges Allg Angew Entomol* 1981; 3: 151-154.

⁴ Spradberry JP, Tozer RS, Drewett N, Lindsey MJ. The efficacy of ivermectin against larvae of the screw-worm fly (*Chrysomya bezziana*). *Aust Vet J* 1985; 62: 311-314.

⁵ Shinohara EH. Treatment of oral myiasis with ivermectin [letter]. *Br J Oral Maxillofac Surg* 2003; 41: 421-422.