

Case Study: Hydatid Disease in Kangaroos in the Perth Hills

Hydatid disease is caused by the tapeworm parasite, *Echinococcus granulosus*. The parasite causes cysts to develop in internal organs, usually the lungs or liver. Western Grey Kangaroos (*Macropus fuliginosus*) in the Perth Hills were found to have hydatid disease during a survey conducted by Murdoch University's School of Veterinary Studies in the mid-1980s. This was very unusual in an urban area. While the origin of the outbreak was uncertain, it was thought to have come from dogs used for pig hunting.

Murdoch University researchers were surveying livestock in Western Australia for hydatid disease. This disease was considered uncommon in livestock, with 0.8% of cattle and 0.2% of sheep statewide found to be infected between 1985 and 1987.¹



During the livestock survey, the researchers received hydatid cysts from a western grey kangaroo that had been shot close to Perth. This finding prompted a survey of kangaroos and feral pigs in the Perth Hills for hydatid infection. Twenty-one western grey kangaroos and 24 feral pigs were examined for the presence of hydatid cysts.

Cysts were found in six kangaroos (29%) and 11 feral pigs (46%).¹ The kangaroos were heavily infected with cysts, most of which contained parasite larvae. The cysts in the feral pigs were small and showed signs of degenerating. This meant that, although both kangaroos and feral pigs were exposed to infection, the kangaroos were more prone to hydatid disease and more likely to transmit further infection.

Photos: Top: Hydatid cyst in lungs of a kangaroo, Source: Murdoch University
Kangaroo Photo: Kimberley Page

During the survey, a domestic dog used for pig hunting in the Perth Hills was found to have *Echinococcus granulosus*, as well as a dingo killed on a sheep farm approximately 100km south-east of Perth.



Hydatid disease may have been introduced into the Perth hills area from outside Western Australia. At the time the researchers were advised by a number of local authorities that hunters from Eastern Australia were hunting pigs in Perth water catchment areas with their dogs.¹ It is possible that these dogs introduced the *Echinococcus granulosus* infection into the area.

Pig hunting is a popular pastime in the Perth Hills. Hunters catch pigs to get meat for human consumption. Although pigs are usually caught live by dogs, kangaroos are often shot to provide meat for the dogs, to sell as pet food and/or for sport. Kangaroo carcasses left in the bush can be eaten by domestic dogs, exposing them to infection.

Dogs become infected when they eat the organs of infected livestock or wild animals, particularly the liver and lung, which contain hydatid cysts with the parasite larvae inside. The cysts then develop into adult tapeworms. Herbivores such as kangaroos or livestock then become infected when they eat eggs from the adult tapeworms which are passed out with faeces from infected dogs.

The best way to control hydatid disease is to eradicate the infection in dogs by ensuring they do not eat offal and/or meat from shot kangaroos and feral pigs and by treating them for tapeworms. This will also help to prevent hydatid disease in kangaroos and break the cycle of disease transference between dogs and wildlife.

Source:

¹RCA Thompson, AJ Lymbery, RP Hobbs & AD Elliot (1988), *Hydatid disease in urban areas of Western Australia: an unusual cycle involving western grey kangaroos (Macropus fuliginosus), feral pigs and domestic dogs*, Australian Veterinary Journal, Vol. 65, No. 6., 188-190.

About Healthy Wildlife

The 'Healthy Wildlife Healthy Lives' – A One Health project aims to educate the public about people's interaction with wildlife in urban areas, particularly how people and domestic animals spread diseases to wildlife, such as birds, quenda (bandicoots), native fish, bobtails and kangaroos. The project informs people about how to avoid harm to wildlife, create positive interactions with wildlife and protect and conserve the environment. The aim is to keep wildlife healthy for a healthier world.

The project is a partnership between Eastern Metropolitan Regional Council and Murdoch University, supported by Lotterywest.

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