PROCESSIONARY CATERPILLAR DISEASE IN AUSTRALIA

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INTRODUCTION

Hairy caterpillars are known to cause animal and human disease in Australia and other parts of the world. The Processionary Caterpillar is the main culprit in Australia but other species might also cause a problem and there are different species in other parts of the world that cause disease. The Eastern Tent Caterpillar in the USA and the Pine Processionary Caterpillar in Europe are examples of these.

BACKGROUND

The hairs of the Australian Processionary Caterpillar (Ochrogaster lunifer) are irritating and if touched or consumed can cause a range of symptoms. The hairs affect humans or animals by direct contact with the caterpillar or their nests. In the nests, multiple caterpillars moult and shed their exoskeleton including the hairs. These nests degrade and contaminate the environment with these hairs. Domestic animals, in particular the horse, often accidentally become exposed to these hairs.

In the season of 2004, a lot of foals were lost in the Hunter Valley due to an outbreak of the disease caused by the Processionary Caterpillar. I had already been conducting research into the effects of these caterpillars on pregnancy which lead me to closely manage and monitor mares at Coolmore Thoroughbred Stud. This farm did not experience the loss of pregnancies from hairy caterpillars that other farms in the Hunter Valley experienced due to my management of these mares. The focus of research into the effect of hairy caterpillars of equine pregnancy lead to the term Equine Amnionitis and Foetal Loss (EAFL). I presented my research in the USA drawing the association and commonality with Mare Reproductive Loss Syndrome (MRLS) which was characterized in Kentucky USA after 2001/2002 season involving the Eastern Tent Caterpillar. Since then our knowledge of the range of diseases and symptoms caused by these hairy caterpillars has grown.

CLINICAL SIGNS

Horses don’t purposely consume hairy caterpillars. They accidentally consume the microscopic hairs while grazing or from contaminated feeds. The hairs are directly irritant and might cause local irritation to mucous membranes that line the mouth or a more systemic reaction such as urticaria (hives) – Photograph 1. The hairs are also capable of penetrating the lining of the intestine and can carry environmental bacteria to deeper organs of the horse. All horses are susceptible to this and cases of peritonitis, abdominal abscesses, uveitis (eye disease), pericarditis and other areas of inflammation and infection can be caused by these migrating hairs.

The pregnant mare is particularly susceptible as the pregnant uterus containing the developing foetus sits directly above the intestinal tract and is often the first organ affected by migrating hairs. A range of clinical signs can be seen during pregnancy from mild placentitis (infection of the placenta) to foetal death and abortion (Photograph 2).
In my own practice in South East Queensland, where these caterpillars are common, we have treated foals born with affected foetal membranes that have required intensive care in order to survive (Photograph 3). How much care these foals need depends on the stage of pregnancy when infection occurred and the severity of the infection (Photograph 4 and 5). A foal affected close to term with a mild infection might need no care and the owner might not even realise that the foal has been affected by the disease. A severe infection earlier in pregnancy may result in overwhelming inflammation and death of the foetus with subsequent abortion.

**MANAGEMENT**

Preventing exposure of horses to the hairs is the only way to eliminate the disease. This is a lot harder to achieve as a reality. The caterpillar is everywhere, nests are often missed (Photograph 6) and feed is often contaminated without readily identifiable signs.

Searching the environment for the nests and carefully removing them (using personal protective equipment) and disposing carefully will reduce local environmental contamination (Photograph 7). Eggs are laid by the adults in October to November. The caterpillars hatch and feed over summer as the nests increase in size. Caterpillars are fully grown by May, they leave the tree and burrow in the ground over winter. The caterpillar then pupates in early Spring and emerges as an adult in late October. Abandoned nests break up and contaminate the environment. The westerly winds that occur at the end of winter are a good source of contamination as they spread the contents of these nests across grazing paddocks (Photograph 8). Another source of contamination is hay paddocks that hairs blow across and they can be incorporated into hay bales fed to horses.

The management of the risk of exposure to hairy caterpillars can be complex and should involve veterinary assistance. Assessing this risk associated with the environment will require detailed knowledge of the caterpillar lifecycle and it biology. Animals, especially pregnant mares, will require monitoring that can include veterinary examination. Examination can be a mixture of physical, laboratory and ultrasound scanning by a suitably experienced veterinarian.

Systemic signs of exposure to the hairs of the Processionary Caterpillar include depression, urticaria (hives) and signs of irritation to the mouth, lips and tongue. If the signs of exposure are missed in the pregnant mare then signs of impending abortion such as precocious bagging up, running milk and loosening of the perineum may develop. Pregnant mares may not show any signs prior to abortion. Mares and environments with a history of producing affected cases might require regular monitoring to identify early disease.

Symptomatic treatment may be administered by a veterinarian along with treatments designed to fight infection, inflammation and provide support.

**CONCLUSION**

Processionary Caterpillars are a reality and cause widespread disease. The recognition of potential risks and managing exposure along with regular monitoring of high risk animals will help to reduce the impact of disease.
Photograph 1. Urticaria (hives) of a horse with raised skin lumps on the side of the face. This mare had urticaria all over her body after exposure to an irritant.
Photograph 2. Ultrasound of a pregnant uterus showing an extensive area of infection. The grey area is a large accumulation of pus between the uterus and placenta. The foal is below this. This will greatly interfere with the function of the placenta to support the foal.
Photograph 3. A foal born early affected by EAFL. Notice the skinny condition of the foal, the yellow stained white bag (amnion), the early passage of meconium from the anus covering the tail (a sign of foetal stress).
Photograph 4. The foal from photograph 3 after 24 hours of intensive care. It is now able to sit up in sternal recumbency but is still requiring feeding through an indwelling stomach tube.
Photograph 5. The foal from photographs 3 and 4 at 72 hours of life. The foal is out of intensive care, able to feed itself and acting like a normal foal.
Photograph 6. An early next of Processionary Caterpillars that emerge and follow each other to feed.
Photograph 7. Close up of a larger nest with a Processionary Caterpillar in the foreground. Exoskeleton containing hairs can be seen to the right and behind the caterpillar.
Photograph 8. A Processionary Caterpillar nest in a tree next to a grazing paddock.