

Medical Mysteries of the 100-Acre-Wood

Children around the world have been entertained by activities in the 100-acre-wood for decades. But at what cost to the animals? What kind of example is this setting given the obvious medical and ethical problems present in these animals? As protectors of animal health and welfare, and fully cognizant of the ethical requirements put upon us by the Veterinarian's Oath, we feel bound to address these issues and call for immediate action.

Winnie the Pooh may be a lovable creature, but he clearly has numerous health problems. Despite being born in 1926, Winnie the Pooh appears not to have grown to adult height. This stunted size may be the result of a primary growth hormone deficiency, but we suspect that it is solely the result of inadequate nutrition. His body mass index is excessive, in large part from his inadequate diet. A diet based solely on honey is inadequate for a growing bear. The caloric density is a main factor in this animal's obesity. As well, it is virtually guaranteed that Pooh has, or will soon have, numerous nutritional deficiencies based on this diet. Pooh also seems rather 'slow on the uptake' which may be the result of inadequate omega-3 fatty acid



intake. Unlike many other bears feasting on wild salmon and other sources of these important fatty acids, Pooh's omega-3-deficient diet has not provided him with the neuroprotective and developmental benefits that omega-3s provide. Sadly, this is irreversible and Pooh will never be able to obtain his true genetic capacity for intelligence. Despite the irreversible nature of his improper brain development, there are other areas that can be improved and his diet must be addressed immediately. This may not be easy, given decades of inadequate diet and conditioning to only eat honey. While some may recommend the use of mirtazapine to stimulate his appetite along with provision of a normal diet, we disagree and believe that a more natural approach involving complete restriction of honey along with providing an adequate diet will be successful. Use of mirtazapine may be unnecessary, particularly once hunger sets in. Further, this would be an off-label use of the drug and we have little confidence in available ursine dosing data. There is always concern regarding the metabolic efforts of dietary restriction in overweight animals, but we are unable to find any published reports of fatty liver syndrome in obese bears being weaned from a honey-only diet, so this absence of published evidence clearly indicates that this is a completely safe approach. We do, however, recommend a complete hepatic evaluation prior to feed restriction because of the marked yellow pigmentation of this bear.

Eeyore clearly has a significant undiagnosed metabolic disease, given his body condition, poor muscle mass and lethargy. While equine metabolic syndrome has been poorly investigated in donkeys, it is a likely explanation for the excessive body condition. The slow



purposeful movements exhibited by this animal also suggest the presence of a primary muscular disorder such as polysaccharide storage myopathy. At a minimum, muscle biopsy is indicated to determine the cause of his unwillingness to move beyond a crawl. Certainly, the slow movement and vocalization could be the result of a brain lesion but, sadly, Eeyore's girth is too excessive for him to fit into existing MRI or CT scanners. Only with proper control of his metabolic disease and a good nutritional program will there be any ability to diagnose any cerebral component. Blind brain biopsy is not recommended due to the invasive nature of this diagnostic test and the rather low likelihood of actually identifying brain tissue in a donkey.



At the opposite end of the spectrum is Tigger, the hyperactive tiger whose incessant jumping and twitching likely indicates the presence of a cerebellar disorder. In the absence of advanced imaging (which would obviously require travel beyond the 100-acre-wood) one must make a presumptive diagnosis of cerebellar hypoplasia from fetal infection with feline panleukopenia virus. Unfortunately, there are no therapeutic options and there is a grave prognosis for clinical improvement. He must also have an additional neurological abnormality affecting his cerebral cortex since he has repeatedly shown an unwillingness to recognize readily available food sources, most notably a young pig.

Roo is an active young kangaroo. While his excitable, bouncy nature may simply be the exuberance of youth, we are concerned about the sustained energy. This concern is heightened by the fact that all images of this animal show profound papillary dilation to the point that his eyes appear completely black. This sign clearly indicates the potential for illicit drug exposure. Drug testing is required. His mother, Kanga, appears to be a loving, caring mother, with no apparent health problems. Despite this, she must be investigated as a potential source of Roo's drug exposure because her attitude seems too persistently cheerful for someone spending all her time around a hyperactive youngster.



Piglet's most obvious abnormality involves vocalization. There are many potential causes of vocalization abnormalities in pigs, including behavioural and neurological etiologies. Piglet appears to be the only piglet left from his litter, so congenital or neonatal infection that killed his siblings and left him with a serious stutter must be considered. We are hesitant to speculate about specific causes or the potential food safety risk. CT or MRI would be required to explore this further, but it is questionable whether this is justifiable given the cost involved for a pig. Further, consumer concerns about irradiated meat may preclude CT scanning.



Rabbit, while exhibiting classical signs of dominance, does not manifest his behaviour in bites or other serious outcomes. His dominating personality is more directed at controlling the daily activities of his cohorts, without obvious negative impacts. That, combined with limited pharmacokinetic or safety data for drugs like fluoxetine (Prozac) in rabbits lead us to recommend no treatment for this disorder. However, given the high prevalence of *Encephalitozoon cuniculi* shedding by rabbits, we must assume that he is carrying this animal and human pathogen in his kidneys, and ensure that contamination of the environment with urine is avoided. Concerningly, there consistently appears to be a dearth of hand hygiene opportunities in the 100-acre-wood, with few sinks and complete absence of hand sanitizers. This infection control deficiency must be addressed to contain the multitude of pathogens that appear to be present in this toxic environment.



And finally, on to Christopher Robin. While a minor, Mr. Robin is clearly the caretaker of this ragtag group of animals and certainly bears (pun intended) responsibility for their health and welfare. His obvious failure to provide adequate veterinary care is of significant concern and should result in immediate investigation. The potential for Christopher Robin to be the source, intentional or otherwise, of Roo's illicit drug exposure raises numerous additional concerns. At a minimum, thorough veterinary examination of all animals and review of animal management practices should be mandated by regional authorities to ensure the health and welfare of these animals, as well as children around the world that are learning from Christopher Robin's example.



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