

Equine Veterinary Journal Ltd

Editorial

A Foot in the Horse's Mouth

March 2001

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The recent outbreak of foot and mouth (F & M) disease in the UK has had unfortunate side effects, not for horses themselves, but for those involved in equine activities, such as racing, show jumping and, even, hacking. It is ironic that a highly contagious disease of cloven-hoof animals, infecting neither horses nor human individuals, should be the cause of draconian restrictions of movement to avoid indirect spread. In March, the Cheltenham National Hunt Festival and Badminton Horse Trials were cancelled, and racing brought to a halt in Ireland and France.

The method of control in European Union countries is the slaughter of affected farm animals and those in direct contact. The aim is to maintain these countries free of virus.

In the UK outbreak, so far, over 270,000 farm animals (sheep, cattle and swine) have been killed as a result of 309 confirmed cases (as at 18 March 2001) on differing farms.

The disease is caused by a virus of the family *Picornaviridae*, genus *Aphthovirus* with 7 serotypes (A, O, C. South African (SAT)1, 2 and 3, Asia1). The current outbreak in the UK is due to the highly virulent pan-Asiatic serotype O (Knowles *et al.* 2001).

Foot and mouth disease is not usually transmissible to man. However, in 1834, there is a report of 3 veterinarians acquiring the disease from deliberately drinking raw unpasteurised milk from infected cows (Prempeh *et al.* 2001). The condition should not be confused with the human form of 'hand, foot and mouth disease', caused by an unrelated and usually mild viral infection, principally of children, with coxsackie A virus (Chin 2000).

Schwabe (1978) in '*Cattle, Priests and Progress in Medicine*' records how rinderpest, the highly fatal plague of cattle, is said to have been introduced into Europe from Southern Russia on the feet of Swedish and Russian soldiers. This author argued that, as a result of the rinderpest plague, "The first quarter of the 18th century witnessed a dynamic expansion of effort to promote medical sciences...manifested in the search for a means of preventing and curing cattle disease".

F & M disease cannot be compared with rinderpest, as far as severity of clinical signs and outcome are concerned, but the disease has been elevated into the category of a plague, due largely to its commercial impact and attempts to eradicate its presence by slaughter.

The horse, like the Russian soldier, is one potential means of spread but human action poses the greatest indirect risk. The present outbreak may have started through importing infected food which was fed to pigs in untreated swill. Horses pose a minimal risk, although they are largely rural creatures and may coexist with cattle and other susceptible animals. Undoubtedly, the biggest risk of spread is moving infected farm animals from one location to another.

If the disease spreads in countries where the virus is not usually present, it might have the effect on governments that rinderpest had in the past; namely of stimulating the funding of scientific research; and in the case of F & M, of funding an effective vaccine. This may be, hopefully, the way forward in the 21st century, rather than the funeral pyres now being lit throughout the UK.

The existence of antigenetically different subtypes with little or no cross-immunity is an obstacle to successful vaccination

(Radostits *et al.* 1999).

Segregation, killing of infected individuals, effective vaccines and commonsense precautions to avoid secondary spread, would be an alternative to wholesale slaughter, once an effective genetically engineered recombinant vaccine, distinguishable in the host from natural antibodies, can be achieved. Work on a peptide-based vaccine is currently in progress at the USDA Plum Island facility (Sharp 2001).

We, in the horse world, are fortunate that our charges do not suffer F & M disease; equine conditions which have considerable economic impact include *Strep. equi* infection (strangles), influenza, *Equine herpesvirus* (EHV), *rotavirus* and, in North America, babesiosis (piroplasmiasis) and botulism; all of which cause economic loss and are reduced but not eliminated by vaccination; yet none of which demand a strategy of slaughter.

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