

OCCURRENCE OF MULBERRY HEART DISEASE IN AN ORGANIZED PIG FARM IN INDIA

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The conditions associated with Vitamin E and /or selenium deficiency in swine are Mulberry heart disease, Hepatosis dietetica, Skeletal muscle degeneration and Exudative diathesis (Sharp *et al.* 1972). In pigs, Vitamin E is necessary for the optimum function and metabolism of the nervous, muscular, circulatory and immune systems and Selenium is an essential nutrient and a part of an enzyme called glutathione peroxidase which also acts as an antioxidant and thus has a complementary role to vitamin E. The less selenium in the diet, the greater is the requirement for vitamin E in feed (The pignote). Past few years' problems associated with either the lack of availability of vitamin E and selenium or absolute deficiencies have become major problems in swine farms that have been maintained with exclusively with swill feeding especially for fattener stock in India.

CASE HISTORY AND OBSERVATIONS

A rare condition of Mulberry Heart Disease was observed in Pig Breeding Unit of Post Graduate Research Institute in Animal Sciences, TANUVAS, Tamilnadu during the year of 2009-2010. A Three-way synthetic male pig (Large White Yorkshire X Landrace) X Duroc, castrated at the time of weaning (56th day) and put into swill feeding for fattener pig production.

The grower male pig was apparently good looking, active and alert, taking the swill food effectively and weighing around 65 kg at 6th month of age. One fine morning, the grower pig was died suddenly, without any prior clinical signs and routine post-mortem

was done to find out the cause of death. During the post-mortem, following lesions were identified in the internal organs.

The lesions were not suggestive for any infectious diseases and the first time we had observed this kind of lesions particularly involves only heart and their muscles

Post-mortem findings

Large amounts of pericardial fluid around the heart

Severe haemorrhagic areas in heart muscle (epicardium)

Presence of light to dark yellow coloured fibrin (in pericardial fluid) mass around the heart

Lesions are correlated, through browsing in internet; we came to conclusion that the cause of death in pig might be due to Mulberry Heart Disease. The literature pertaining to the information regarding Mulberry Heart Disease in pigs is very scanty in India.

DISCUSSION

In our study, the dead pig was in swill fed, usually the swill feed comprises of more of carbohydrates, energy and the availability of essential micro nutrients is very minimal. Hence, this might be cause of death in swill fed pig alone.

The post-mortem lesions were also reported by some of the websites (<http://www.pigprogress.net/health-diseases/m/mulberry-heart-disease-mhd-56.html> and <http://www.vetsweb.com/diseases/mulberry-heart-disease-mhd->

d171.html), such as, post-mortem findings may be used to confirm a diagnosis and heart lesions are characteristic in mulberry heart disease. The pericardial cavity is full of gelatinous fluid and fibrin and the surface of the heart is streaked with haemorrhages running from the base to apex. Similar haemorrhages occur in the endocardium. The carcass is usually in good condition with fluid and shreds of fibrin in all body cavities

In future, the swill feed lot pigs were injected with alpha-tocopherol-selenium preparations to prevent the occurrence.

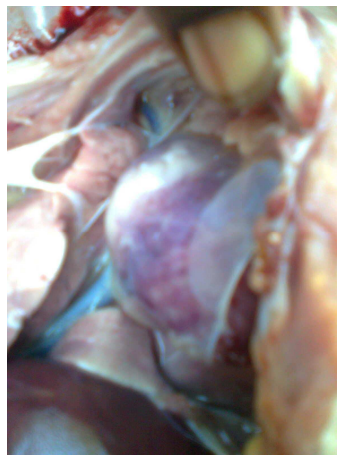


Fig-1 (c) Peeling of Pericardial membrane



Fig-1 (a) Pericarditis with fibrin mass



Fig-1(d) Part of Epicardium with



Fig-1(b) Epicardium showing extensive



Fig-1 (e) Swill feed in the plastic containers

Prevention

In case of swill feeding, add commercially available mineral mixture powder at the rate of 30g/pig at weekly intervals and followed with Vitamin AD₃E injection once in a month or the addition of 0.1 ppm selenium to commercial concentrate feed (Moir and Masters, 1979) appeared to be an effective prophylactic measure to prevent the occurrence. We got the very good result and followed a standard regimen for pigs that fed with swill feeding.

Management control

Check the levels of vitamin E and selenium.

Check the levels of vitamin A. If more than 10,000 IU/kg this may be increasing the requirement for vitamin E.

Rapid growth may be a contributing factor

Reduce stocking densities if pigs are over crowded

Check there are no parasite burdens

Grains stored with high moisture content in high temperatures and with fungal growth may have low levels of vitamin E

Do not breed from animals that carry the stress gene

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