

# A Disease of Nursing Pigs Previously Unreported in Ontario

By C. K. Roe and T. J. L. Alexander\*



Fig. 1. Chronically affected pig 11 weeks of age. Symptoms first observed at 6 weeks of age.

In the fall of 1957, a disease of nursing pigs characterized by high morbidity, vomiting, anorexia, constipation and severe progressive emaciation was observed in Ontario swine herds. Since that time, the disease has reached epidemic proportions in Southern Ontario.

The purpose of this article is to describe the condition and to compare it with Transmissible Gastroenteritis, a virus infection of swine which has been present in the United States for many years but which has not been reported in Canada.

## The Disease in Ontario

The disease in Ontario has been observed to occur throughout the nurs-

ing period and in sows suckling affected litters. No other age groups appear to have been affected.

Morbidity has been high. Spread was rapid throughout all or most of the nursing litters during outbreaks on farms. Occasionally litters in direct contact with sick animals were completely unaffected. This was also true of individual pigs in affected litters. Many sows nursing sick litters appeared to remain well. Others manifested mild transient symptoms.

The mortality has been high also and few affected pigs have recovered sufficiently to be of economic value.

In some outbreaks, the most prominent symptom has been repeated retching and vomiting of a yellow and foul smelling vomitus. This occurs most readily after feeding or drinking. In other out-

\*Ontario Veterinary College, Department of Medicine & Surgery, Guelph, Ontario.

breaks, vomiting has been minimal.

Rapidly the pigs lose any desire to nurse and huddle together in the straw. After a few days, most pigs become severely constipated. However, in a few outbreaks, a yellowish, watery diarrhoea has been noted.

Sometimes a marked thirst has been evident. Affected pigs have been observed to stand against water bowls, grinding their teeth and dipping their mouths in the water, but drinking little, if any at all.

Occasionally in outbreaks where it has been possible to observe the disease closely, an initial rise in temperature up to 105 degrees has been noted. Within 24 to 48 hours the temperature returns to the normal range. Usually, however, the temperatures of the affected pigs examined have been in the normal range.

Acute cases have been observed mainly in pigs under three weeks of age. Vomiting and severe depression may be the only symptoms noted before death. More frequently the disease tends to become chronic. The affected pigs lose their appetites and rapidly become emaciated (Fig. 1). This unthrifty state may persist for several weeks until they die of starvation or secondary diseases. Very few recover.

Sows suckling affected litters soon cease to produce milk. Observers are not agreed whether this is because the pigs stop suckling or whether it is due to the direct effect of the disease upon the sow. Some sows show transient symptoms immediately prior to or during the onset of symptoms in the litter. They become lethargic, have reduced appetites and sometimes show a slight fever. They rarely vomit. The udders of affected sows appear to become flaccid even before the pigs lose interest in nursing.

The majority of autopsy examinations carried out on chronically affected animals revealed no significant gross or microscopic lesions. In some acute cases, there was a gastro-enteritis with an ac-

cumulation of yellow or greenish ingesta.

*Escherichia coli* is the only organism that has been isolated consistently in large numbers from the intestinal tract of affected pigs. Lack of response to antibiotics or chemotherapeutic drugs, usually effective against this organism, suggests that the organism is not significant in this disease.

To date, although many treatments have been attempted, none have proved of much value. A few reports have been received which indicate that sows which had been through an outbreak and were subsequently rebred produced and weaned normal litters.

The disease has been successfully reproduced by feeding susceptible nursing pigs crude suspensions of intestine and content from infected pigs.

#### Discussion

Doyle and Hutchings (1) described Transmissible Gastroenteritis (TGE) as a disease primarily of suckling pigs. Since then, various workers (2, 3, 4, 5) have established the cause to be an infectious filterable agent. The disease encountered in Ontario bears a resemblance to TGE; however, in certain respects there appear to be marked differences.

In TGE, the age incidence is reported to be much wider than the disease observed in Ontario. Young growing pigs, in addition to nursing pigs and lactating sows, may be affected with TGE, whereas the condition seen in Ontario has been observed only in nursing pigs and in the sows suckling them.

In most outbreaks of TGE, pigs over three weeks of age rapidly develop an age immunity and are only transiently affected, whereas, in the disease reported here, morbidity and mortality are high throughout the nursing period. Another striking difference is that the many pigs which survive the initial vomiting phase of the disease in Ontario suffer a prolonged period of inappetance and emaciation. In TGE, this is not a feature.

Various workers (1, 6) have reported that, in TGE, severe diarrhoea is a prominent symptom; most of the pigs studied by the authors have been constipated.

At autopsy, a higher percentage of pigs dying of TGE show distinct lesions of gastro-enteritis than were observed in the pigs autopsied in Ontario. Chronically affected pigs frequently showed no changes in the gastro-intestinal tract.

The disease has been reproduced experimentally. Further experiments are under way to establish the exact nature of the causative agent.

On the basis of available evidence, it is as yet too soon to conclude whether the disease in Ontario is TGE or a distinct entity.

### Summary

A disease of suckling pigs, characterized by vomiting, anorexia, constipation and prolonged wasting, has been described. It has been compared with TGE.

### REFERENCES

1. DOYLE, L. P., and HUTCHINGS, L. M. A Transmissible Gastroenteritis in Pigs. *J.A.V.M.A.*, 108:257-259 (1946).
2. FEENSTRA, E. S., THORP, F., GRAY, M. L., and McMILLEN, W. N. Transmissible Gastroenteritis of Baby Pigs. *J.A.V.M.A.*, 113:573-575 (1948).
3. BAY, W. W., DOYLE, L. P., and HUTCHINGS, L. M. Some Properties of the Causative Agent of Transmissible Gastroenteritis in Swine. *Am. J. Vet. Res.*, 13:318-321 (1952).
4. BAY, W. W., DOYLE, L. P., and HUTCHINGS, L. M. Transmissible Gastroenteritis of Swine—A Study of Immunity. *J.A.V.M.A.*, 122:200-202 (1953).
5. YOUNG, G. A., HINZ, R. W. and UNDERDAHL, N. R. Some Characteristics of Transmissible Gastroenteritis (TEG) in Disease-Free, Antibody-Devoid Pigs. *Am. J. Vet. Res.*, 16:529-535 (1955).
6. BAY, W. W. Transmissible Gastroenteritis in Swine—Field Herd Studies. *J.A.V.M.A.*, 120: 283-286 (1952).

## Abstracts

**Kaplan, W. Ringworm in cats caused by *Microsporum Gypseum*.**

*Vet. Med.* 52:347-349, 1957.

The clinical and mycologic findings in four cats spontaneously infected with *Microsporum Gypseum* are described. The specimens were cultured on a special selective isolation medium containing the antibiotics, cycloheximide, penicillin and streptomycin. The animals exhibited obvious skin lesions at the time diagnoses were made.

**Brewer, N. R. The Use of sustained-action quinacrine tablets in the treatment of dogs infected with common tapeworms.**

*J. Amer. vet. med. ass.* 132:340-342, 1958.

Dogs used in the tests in the experimental laboratories of the University of Chicago were of mixed breeds obtained from municipal dog pound. After a preliminary test on 80 dogs, treatment of 23 infected dogs with quinacrine HCl in delayed-action form (Keybrin) indicated that one dose of the drug was effective in eliminating the two species of tapeworms found. In 7 of the 23 dogs, follow-up studies substantiated the find-

ing. Only 1 of the 103 dogs treated showed nausea.

**Grau, C. R., Kratzer, F. H., and Newlon, W. E. Principles of nutrition for chickens and turkeys.**

*Circ. Calif. Agric. Exp. Sta. Ext. Serv. No.* 450, pp. 16, 1956.

In the sections on carbohydrates and fats; proteins and amino acids; vitamins; and minerals, the authors describe the functions that these nutrients perform in the body, the foods which supply them, the symptoms of deficiency, and, in tabular form, the amounts needed at various stages of life.

**Paterson, R. A. New aspects of equine lameness.**

*Br. Vet. J.* 113:292-294, 1957.

The author reports on antibiotic therapy for lameness in horses. There is very little risk of septic arthritic when normal aseptic techniques are followed. Results obtained in this study indicate that hydrocortisone administered intra-auricularly gives favourable response and is superior to firing.