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SHORT COMMUNICATION

PORCINE ATROPHIC RHINITIS IN MALAYSIA

SUMMARY: Sectioning of snouts from 163 pigs slaughtered in Selangor showed the prevalence of atrophic rhinitis to be 79.1 percent. About 36 percent had moderately severe turbinate atrophy. There was no correlation between the severity of atrophic rhinitis and extent of lung pathology.

Keywords: atrophic rhinitis, pigs, Malaysia

INTRODUCTION

Atrophic rhinitis (AR) in pigs is an infectious disease associated with varying degrees of atrophy of the nasal turbinate bones. The disease occurs in most parts of the world where there is an intensive pig industry. It is considered to be a common and economically important disease of pigs in Europe and North America (Switzer, 1981). In the United States, it was estimated that up to 40 per cent of slaughtered pigs had turbinate atrophy (Switzer, 1981) while in the United Kingdom, it was believed that the prevalence in slaughtered pigs was about 75% (Taylor, 1981). Not much is known about the prevalence of AR in Malaysia.

Attempts to determine the association of pneumonia with turbinate atrophy have given conflicting results. In one study, there was a greater frequency of pneumonia in pigs that had turbinate atrophy than in those that did not (Flesja and Ulveosoeter, 1980) while other workers were unable to confirm this finding (Backstrom *et al.*, 1982; Straw *et al.*, 1983).

This study was undertaken to determine the prevalence and severity of AR, and establish a relationship, if any, between turbinate atrophy and pneumonic lesions, in pigs slaughtered in the Shah Alam Abattoir in Selangor.

MATERIALS AND METHODS

A total of 163 slaughtered pigs at the Shah Alam Abattoir were selected at random within a three-month period in 1987. Their snouts were sectioned transversely at the level of the first or second premolar tooth using a hack saw. The degree of turbinate atrophy and septal deviation was assessed on a scale of 0 to 5, using the scoring system described by Done *et al.* (1964).

Lungs from these pigs were examined for lesions of pneumonia. The extent of pneumonia was estimated as a percent of lung volume; the apical, cardiac and intermediate lobes were each considered to represent ten per cent of the lung and the diaphragmatic lobes were 25 percent each.

RESULTS

The prevalence and severity of turbinate atrophy, indicated by a score of 0 to 5, is shown in Table 1. Of 163 pigs examined, 129 (79.1%) showed evidence of AR. About 43.6 per cent showed mild lesions of turbinate atrophy while 36.2 per cent showed more severe lesions. Pneumonic lesions with varying degrees of lung involvement were seen in 106 pigs (65%) (Table 1). Of these, 96 had lesions characteristic of swine enzootic pneumonia i.e. consolidation of the anterioventral lobes while six had pleuropneumonia. There appeared to be no correlation between severity of turbinate atrophy and extent of pneumonic lesions.

DISCUSSION

The presence of AR in Malaysia has been known for a long time. However, if the

TABLE 1

The prevalence and severity of atrophic rhinitis and its relationship with pneumonic lesions in pigs examined in the Shah Alam Abattoir

Snout grade AR	No. pigs (%)	No. of pigs with pneumonic lesions in relation to percent lung involvement				
		0%	1-20%	21-40%	41-60%	>61%
0	34 (20.9)	14	13	6	1	0
1	46 (28.2)	15	21	5	4	1
2	24 (14.7)	10	9	5	0	0
3	27 (16.6)	7	13	6	1	0
4	23 (14.1)	4	14	5	0	0
5	9 (5.5)	7	1	0	1	0
Total	163	57	71	27	7	1

concern (or rather lack of it) shown by pig farmers and field veterinarians in the past is any guide, the disease was considered of little consequence to the industry. Nevertheless, in recent years, verbal reports from practitioners suggest that clinical atrophic rhinitis, particularly among the densely populated pig farming areas in and around the vicinity of the Bukit Pelanduk and Sungai Buloh area, has been increasing. The clinical syndrome of sneezing in young pigs and distortion of the upper jaw has been reported by several farmers. The findings in this small survey that a large proportion (79.1%) of pigs slaughtered in the Shah Alam Abattoir in Selangor, had lesions of turbinate atrophy would appear to corroborate the visual observations of others. The prevalence rate in this small sample appears to be extremely high but it remains to be seen if a countrywide survey would reveal a similarly high rate.

There appeared to be no correlation between the severity of turbinate atrophy and extent of pneumonic lesions in this study, a finding which is in agreement with that of other workers (Backstrom e*t al.*, 1982; Rutter *et al.*, 1984; Straw *et al.*, 1984). The belief that the turbinates play an important role in the trapping and removal of respiratory pathogens from inspired air in pigs may need to be reviewed.

Although regarded as a disease of major economic importance in many countries especially in Europe and North America (Switzer, 1981), there is some controversy about its effects on production. While some workers (Shuman and Earl, 1956; Pedersen and Barford, 1982; Backstrom e*t al.*, 1982) believe that AR has a retarding effect on growth rate, others have reported no significant increase in the length of time required to reach market weight (Straw *et al.*, 1983; Love *et al.*, 1985). In the present study, the authors were unable to determine whether AR had any effect on the age of marketing because it was not possible to determine the exact age of the pigs in this study. This and other problems related to the peculiar nature of the marketing system in this country, need to be overcome in future studies to assess the true extent of economic losses due to AR in Malaysia.

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RINGKASAN

RINITIS ATROFI PORSIN DI MALAYSIA

Keratan hidung 163 ekor babi yang disembelih di negeri Selangor menunjukkan prevalens rinitis atrofi adalah 79.1 peratus. Lebih kurang 36 peratus mempunyai keterukan atrofi turbinate yang sederhana. Kajian ini menunjukkan tidakadanya kaitan di antara keterukan rinitis atrofi dan patologi paru-paru.