

Clinical signs of atrophic rhinitis (AR) in swine severely affected by the disease are easily detectable. However, in piglets, these symptoms are not always clear. DONE (1972), and BERCOVICH & JONG (1976) suggested that brachygnathia superior (BS) may be used as a tool in AR diagnosis in young pigs. The least authors claimed success in AR control by the elimination of pigs which had BS.

This condition was defined as a congenital defect by DUTHIE (1947), DONE (1977) and HOUSTON (1978). This defect is observed more frequently among Large-White (DUTHIE, 1947; DONE, 1977). BRITO *et al* (1982) used BS as one of the screening test for AR diagnosis in a study of prevalence. They found different levels of diseases among Large-White (LW) and Landrace (L) breedings. These different levels may be associated to the genetic constitution or to the difficulties with clinical diagnosis of AR. Thus, the objective of the present work was to evaluate BS as a tool in the AR diagnosis.

Material and Methods:

Animals-From 4 herds, 1216 swines LW (302), L (603) and crossbred LWxL (311) were examined for BS and AR lesions.

Clinical examination: At age of 8 weeks, each pig was examined for clinical signs of AR. BS and others symptoms were recorded according to BERCOVICH & JONG (1976).

Evaluation of turbinate atrophy: Pigs were evaluated for AR lesions when they weighed 90 to 100 kg. Turbinate atrophy was examined after cross sectioning of the nose at level of the first premaxillary tooth (SWITZER & FARRINGTON, 1975).

Statistical analysis: Chi-square test was used to compare data from the occurrence of lesions and to the association between BS and turbinate atrophy.

Results and discussion

Table I summarizes the results of BS and turbinate atrophy lesions. There were no association between AR lesions and BS in the purebred breedings examined. However, this association was observed with the crossbred LWxL breeding. Data from these crossbred animals were used to determine the sensitivity and specificity of the BS in the diagnosis of AR. Sensitivity () is defined as the chance that the test will be positive when applied to someone known to have the disease. Specificity () is defined as the chance that the test will be negative when applied to someone known to be disease-free. The minimum criterium for a screening test to be accepted as a test for a disease is that it detects disease better than chance alone. Although BS passed throughout this test (), the prevalence of diseased pigs among those which were BS positive was 0.38. This result is not enough to indicate BS as a screening test because the chance of a diseased pig given a positive test was less than half (ROGAN and GLADEN, 1978). Thus, BS can not be used as a screening test for AR diagnosis.

Table II summarizes the results of AR lesions among LW, L and crossbred LWxL breedings. Data pointed out that the incidence of the disease was higher among LW swines. DUTHIE (1974) reported that BS in LW swines is the result of selective breeding having

as its objective the shortening of the LW head. In the same paper, the author cited that shortening the nasal passages is a predisposing factor in the development of chronic atrophic rhinitis in man. This fact may explain why there were higher incidence of AR among LW breeding.

Selected references: BERCOVICH, Z. & JONG, M. F. (1976). Tijdschr. Diergeneesk. 101 (18): 1011-22; BRITO, J.R.F.; BRITO, M.A.V.P.; PIFFER, I.A. & FREITAS, A.R. (1982). Arg. Esc.Vet.UFMG. 34 (1): (in press); DONE, J.T. (1972) 2nd IPVS Congress.Proc.; DONE, J.T. (1977). Vet. Annual 17: 96-102; DUTHIE, R.C. (1947) Can.J.Comp. Med.Vet.Sci. 11: 250-9; ROGAN, N.J. & GLADEN, B. (1978). AmJ. Epidemiol 107 (1). 71-6; SWITZER, W.P. & FARRINGTON, D.O. (1975). Diseases of Swine. 4th Ed. I.S.U. Press, P.687

Table 1- Score severity of brachygnathia superior (BS) and presence of AR lesions.

Breedings	atrophy	Turbinate Severity of BS			
		Normal No. %	Grade 1 No. %	Grade 2 No. %	
LW	Present	110 73.3	77 78.6	45 43.3	83.3
	Absent	40 26.7	21 21.4	9 9	16.7
	Sum	150 100.0	98 100.0	54 100.0	
L	Present	184 35.3	28 41.8	8 53.3	
	Absent	337 64.7	39 58.2	7 46.7	
	Sum	521 100.0	67 100.0	15 100.0	
Crossbred LWxL	Present	21 17.6	13 18.8	61 49.6	
	Absent	98 82.4	56 81.2	62 50.4	
	Sum	119 100.0	69 100.0	123 100.0	

Table 2- Occurrence of AR lesions among LW, L, and crossbred LWxL.

Breeding	Number of animals	AR lesions			
		Presence		Absence	
		No.	%	No.	%
LW	302	232 ^a	76.82	70 ^a	23.18
L	603	220 ^b	36.48	383 ^b	63.52
LWxL	311	95 ^b	30.55	216 ^b	69.45
TOTAL	1216	547	44.98	669	55.02

1- Letters in a column with different superscripts are significantly different at p 0.001