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Brief Communication

THREE CASES OF SEGMENTAL APLASIA OF THE UTERUS IN INBRED GILTS

Several comprehensive studies of developmental abnormalities of the female reproductive organs in pigs have been carried out. These reports clearly indicate that segmental aplasia of the uterus is the least commonly encountered developmental abnormality (*Warnick et al.* 1949, *Wilson et al.* 1949, *Teige* 1957, *Nalbandov* 1964, *Einarsson & Gustafsson* 1970). In this communication information on three cases of unilateral segmental aplasia of the uterus in gilts is presented.

During the course of an experiment to produce homozygous carriers of a translocation in pigs a heterozygous boar was mated with two heterozygous full-sibs. The offspring from the two litters (Fig. 1) were karyotyped, the males were castrated and the 11 females saved to be used in a later experiment. One of the females (No. 10) was eliminated because she was found to be an intersex (XX/XY), the others were observed through three cycles (20±2 days) and mated. Seven gilts (Nos. 1, 2, 3, 5, 7, 12 and 13) were slaughtered five to six days after mating, out of these, two (Nos. 5 and 13) were found to have unilateral segmental aplasia of the uterus. Two (Nos. 14 and 15) became preg-

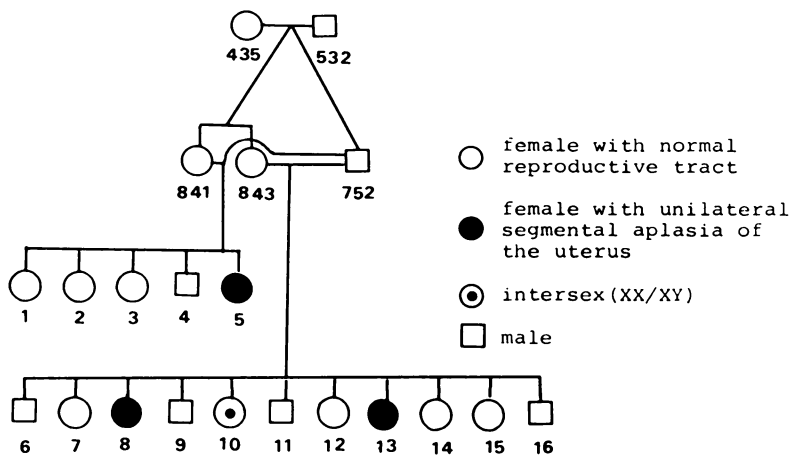

Figure 1. Pedigree showing segregation of unilateral segmental aplasia of the uterus in gilts.

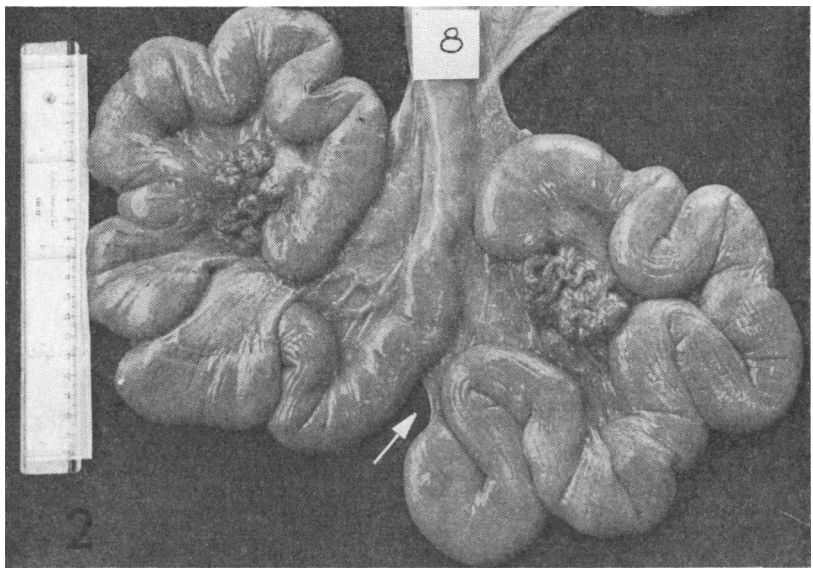

Figure 2. Reproductive tract from an affected gilt, the arrow indicates the missing segment of uterus.

nant and farrowed normally. They were mated following heat after weaning, slaughtered 10 days later and found to have normal reproductive tracts. The remaining gilt (No. 8) returned to service after 31 days. This female was mated a second time and returned to service after 25 days. Following the third mating she was slaughtered and found to be missing a segment of the uterus (Fig. 2). Fertilized eggs were found in the normal horn and unfertilized eggs in the affected horn of all three gilts.

The cases reported previously were similar to these reported here in that the segment was completely missing, only one horn was affected, fluid accumulation occurred in the blind horn and fertilized eggs were recovered in the opposite horn while pregnancy was not maintained. *Nalbandov* suggested that sterility in pigs with unilateral segmental aplasia is due to failure to implant rather than failure to fertilize and that the accumulation of fluid in the blind horn influences the endometrium of the opposite horn. In cattle segmental aplasia of the uterus and cervix, often referred to as white heifer disease, is well known in Bos taurus breeds (*Roberts* 1971) and reported in Bos indicus breeds (*Linares* 1975). This condition is inherited as a single recessive gene which is thought to be linked to the genes deter-

mining white coat colour (*Roberts*). No information is available on the pedigrees of the previously reported cases in pigs. The females reported here (Fig. 1) all arose from the mating of full-sibs which had morphologically normal reproductive tracts. The ratio of normal to affected (3:1) in both litters is in agreement with the expected ratio resulting from crossing two heterozygotes for a recessive gene. It is most probable that this condition in pigs, as in cattle, is controlled by a recessive gene. However, it is clear that the translocation, which is associated with lowered fertility, is not connected with this abnormality since segmental aplasia of the uterus was found both in animals which were chromosomally normal and in carriers of the translocation.

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W. A. King
The Department of Animal Breeding and Genetics, and

T. Linares
The Department of Obstetrics and Gynaecology, Swedish University of Agricultural Sciences, Uppsala, Sweden.

REFERENCES

Einarsson, S. & B. Gustafsson: Developmental abnormalities of female sexual organs in swine. Acta vet. scand. 1970, *11*, 427—442.

Linares, T.: Observaciones de tres casos de aplasia segmentaria del conducto de muller. (Observations of three cases of segmental aplasia of the Müllerian ducts). Agron. Tropical. 1975, *25*, 511—516.

Nalbandov, A. V.: Anatomic and endocrine causes of sterility in female swine. Fertil. and Steril. 1964, *3*, 100—120.

Roberts, S. J.: Veterinary Obstetrics and Genital Diseases. 2nd Ed., Ithaca, New York 1971, 460—461.

Teige, J.: Congenital malformations of the Müllerian ducts and sinus urogenitalis in pigs. Nord. Vet.-Med. 1957, *9*, 609—629.

Warnick, A. G., R. G. Grummer & L. E. Casida: The nature of reproductive failures in repeat-breeder sows. J. Animal Sci. 1949, *8*, 569—577.

Wilson, R. F., A. V. Nalbandov & J. L. Krider: A study of impaired fertility in female swine. J. Animal Sci. 1949, *8*, 558—568.

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Reprints may re requested from: Wm Allan King, the Department of Animal Breeding and Genetics, Swedish University of Agricultural Sciences, S-750 07 Uppsala 7, Sweden.