

SHORT COMMUNICATION

OBSTRUCTIVE UROLITHIASIS IN A HERD OF PIGS IN KENYA

NG'ANG'A C.J.; KARANJA D.N.R. and WANDERA J.G.

INTRODUCTION

Urolithiasis is among the most important urinary tract problems in domesticated animals and man. In the domestic animals, it is of great importance in ruminants, dogs and cats, but rarely important in horses and pigs⁽¹⁾. Uroliths are formed when calculogenic materials are present in urine in sufficient quantities and predisposing factors are right. These factors have been investigated to some extent in ruminants⁽²⁾ and in dogs⁽³⁾, but in pigs, they remain largely unknown. In piglets, ingestion of large numbers of leukocytes in milk from sows with mastitis coupled with intercurrent infections were said to be responsible for uric acid urolithiasis⁽⁴⁾. However, in adult pigs the pathogenesis is not clear. Some investigators^(5,6) were of the opinion that feed concentrates may precipitate the condition as it does in steers and withers.

In pigs, it is mostly reported in piglets^(4,7,8) and occasionally in adult pigs^(5,6,9). These cases exclusively affect large white breed of pigs. The affected piglets show nervous signs, fail to thrive and die during the first few weeks of life^(7,8). In adult pigs, obstructive urolithiasis is the main clinical entity characterized by anorexia, depression or retention of urine, excruciating pain, straining, abdominal distension and death. Uroliths at post-mortem are encountered in the renal tubules, renal pelvis, ureters, urinary bladder and urethra. The calculi are composed of urates and uric acid in piglets^(4,7), phosphates, carbonates or oxalates in adult pigs^(5,9,10,11).

In Kenya, going by the post-mortem reports of the University of Nairobi, Faculty of Veterinary Medicine (1970-1993), only one case of urolithiasis in pigs has been encountered. This paper reports a similar disease problem in a herd of

twenty pigs affecting six weaners, one pregnant sow and one breeding boar. The pigs were showing depressed urine production, straining when urinating and a white chalky material in urine. Two of these weaner pigs died one week after the onset of clinical signs.

The post-mortem picture for the two pigs indicated a fluid filled abdominal cavity from a ruptured urinary bladder. The fluid had a strong urine smell. Yellow coloured pasty material containing sand-like granules was observed at the neck of the urinary bladder and the urethra. Haemorrhages were seen on the urinary bladder mucosa and the urethra where the crystals were found. The kidneys appeared apparently normal. Chemical analysis of the calculi revealed the presence of calcium (13.3%), magnesium (15.0%) and phosphorus (6.2%).

In the present report, the pigs were fed on swill from hotels and market places, but adequate amounts of water were lacking. It was postulated that the feeds contained calculogenic substances that were not identified as the results from the chemical analysis were inconclusive. This together with dehydration precipitated the condition.

This report and others indicate that urolithiasis in pigs although rarely reported could have serious economic implications mainly in mortality rates^(4,5). Most of the affected pigs die of ureamia resulting from kidney failure or rupture of urinary bladder^(5,6,7,8).

References

1. Jubb, K.V.F., Kennedy, P.C. and Palmer, N. (1985). Pathology of Domestic Animals. Academic Press Inc., London. Vol. 2. pp. 392.
2. Blood, D.C., Radostits, O.M. and Henderson, J.A. (1983). Veterinary Medicine. Bailliere, Tindall, Eastbourne (6th edn). pp. 360.
3. Osbourne, C.A. (1986). *Vet. Cl. North Am.* **160**, 1.
4. Edwards, B.L. (1977). *Vet. Rec.* **101**, 432.