

Ontario

Inonophore (maduramicin) toxicity in pigs

Between January 1 and 8, 1991, about 550 weaned, 6-12-week-old pigs died on a 210-sow, farrow-to-finish farm. **Clinical signs exhibited by the affected pigs followed a progression of anorexia, respiratory distress, lethargy, ataxia, recumbency, unwillingness to stand even when assisted, and death.** Significant gross lesions were not seen in the 15 pigs submitted for necropsy during the first three days of the illness. Histologically, severe degenerative myopathy involving muscles of the fore and hind limbs, back and diaphragm was seen. Degenerative changes included swelling, hyper eosinophilia and loss of cross-striations of myofibers, and coagulation necrosis, fragmentation and formation of retraction caps in more severely damaged areas. Values for aspartate aminotransferase (δ 10,000 IU/L) and creatine kinase (δ 20,000 IU/L) were greatly elevated in sera from all five pigs tested. A diagnosis of ionophore toxicity was made.

All affected pigs had been in the starter barns. Clinical signs were not seen in sows, grower pigs or pigs that had been weaned for less than two weeks. On this farm, weaned pigs were fed a prestarter ration for about two weeks after weaning, and were then fed a starter feed. This procedure immediately identified the starter feed as the likely source of the problem. All starter feed was removed immediately. Four pens of starter pigs were simultaneously offered an uncon-

taminated preweaner feed which they commenced eating avidly. The more severe overt clinical signs in survivors subsided during the next two weeks, but most of the surviving starter pigs remained unthrifty.

Assays on the starter feed were negative for monensin, narasin and salinomycin, but revealed maduramicin (Cygro, Cyanamid Canada Ltd, Markham, Ontario) at a level of 35.7 mg/kg. Maduramicin is an ionophore antibiotic licensed for use as an anticoccidial agent in poultry feeds at 5 mg/kg (1). Proprietary data on maduramicin documented levels of up to 5 mg/kg as non toxic to nontarget species, including pigs (1). There are no reports of tests at levels higher than 10 mg/kg in nonpoultry species. The markings and labels on Cygro bags are clear and distinctive. However, they do share some similarities in coloring with those of bags of oxytetracycline that were being mixed into the starter feed. It is assumed that bags of Cygro, instead of the bag of oxytetracycline, were inadvertently added to the starter ration at the feed mill.

Reference

1. American Cyanamid Company Agricultural Division. Cygro technical manual. 1984.

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Alberta

Suppurative orchitis associated with *Haemophilus somnus* in a calf

A two-week-old calf with marked scrotal enlargement was presented to a veterinary practitioner. There was no other clinical abnormality in the calf. Bilateral suppurative orchitis and epididymitis with abscesses were found during castration. One testicle submitted to the laboratory contained a large abscess that oozed a yellow, creamy exudate. Histologically, the testicle had large pyogranulomas characterized by purulent exudate surrounded by a band of epithelioid macrophages and a narrow band of fibrosis. No normal testicular tissue remained. The epididymis was also involved, as tubules contained purulent exudate, and mixed populations of leukocytes were prominent in interstitial areas.

A moderate growth of *Haemophilus somnus* was recovered in pure culture from the testicular abscess. *Haemophilus somnus* is the cause of thromboembolic meningoencephalitis (TME) and has been associated with various reproductive disorders, respiratory disease, septicemia, myocarditis, polyarthritis, otitis, mastitis and conjunctivitis in cattle (1). The reproductive tract, in fact, is considered to be the ecological

niche or reservoir of *H. somnus* in adult cattle (1). **Although *H. somnus* has been recovered from the prepuce, accessory sex glands and semen of bulls, it has not been isolated from testis or epididymis, and is not associated with lesions of the genital tract (2).** There is one other report of chronic suppurative orchiepididymitis associated with *H. somnus* (3). This three-week-old calf had an enlarged, abscessed right testicle. The epididymis and proximal spermatic cord were also affected. The pathogenesis of orchitis in the case reported in the literature, or in that described here, remains unclear.

References

1. Harris FW, Janzen ED. The *Haemophilus somnus* disease complex (Haemophilosis): A review. *Can Vet J* 1989; 30: 816-822.
2. Humphrey JD, Little PB, Stephens LR, Barnum DA, Doig PA, Thorsen J. Prevalence and distribution of *Haemophilus somnus* in the male bovine reproductive tract. *Am J Vet Res* 1982; 43: 791-795.
3. Metz AL, Haggard DL, Makomaki MR. Chronic suppurative orchiepididymitis associated with *Haemophilus somnus* in a calf. *J Am Vet Med Assoc* 1984: 1507-1508.

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