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## Abstracts

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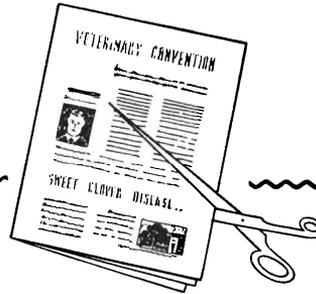
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# ABSTRACTS



**URETHRAL CALCULI IN CALVES.** Occurrence of urethral calculi in male calves up to one year of age is greatest in the late fall and winter. The cause is not completely understood.

Variable symptoms include straining to urinate a few drops of urine, restlessness, depression, and deposit of precipitated salts on the preputial hairs. Rectal examination should be made if possible to determine if the bladder is distended. If the distended bladder is not evacuated, either the urethra or bladder ruptures. In case the urethra ruptures, urine collects in the subcutaneous tissue of the ventral surfaces of the abdominal and thoracic cavities. The sloughing that usually results sometimes can be prevented in early cases by making an incision in the skin at the most ventral part and breaking down subcutaneous fibers and permitting the urine to escape.

Gradual bilateral distension characterizes bladder rupture. Possibly some of these animals may be saved by establishing an opening from the urethra and passing a needle through the abdominal wall to drain urine from the bladder and abdominal cavity.

Surgical treatment is as follows: epidural anesthesia and local anesthesia by infiltrating skin and deeper tissues; an incision just above the scrotum; penis is pulled out of the incision and divided transversely; urethra incised for 2 in. and the edges sutured to the corresponding edges of the skin incision.

If the bladder has been distended for a long time, it is advisable to introduce

a sterile needle through the abdominal wall to remove the urine and transudate.

[Frank, E. R. Urethral calculi in calves. No. Am. Vet. 30: 645-647. (Oct.) 1949.]

**CANINE LEPTOSPIROSIS.** Canine leptospirosis, with a mortality rate of up to 85 percent, ranks among the most serious diseases of dogs.

The leptospirae can be seen with the microscope by dark field illumination as very thin filaments, with a hook at one end or at both ends, and very fine spiral coils. Separation into types indicates that in about 90 percent of the cases the type *Leptospira canicola* is responsible for canine leptospirosis, *Leptospira icterohaemorrhagiae* in the rest of the cases.

Most of the dogs that clinically recover from leptospirosis shed organisms for a long period in the urine, usually for from four to six months. This is an important factor in transmission. The breeding act, contaminated food and water, and rats are other possible means of infection.

Leptospirosis is a rather acute disease with a usual incubation period of from 4 to 12 days. A rise in temperature, indicating a septicemic condition, may mark the onset of the disease. Next, symptoms of a general intoxication are observed. Decreased blood pressure, a very conspicuous injection of the pericorneal conjunctivae (without discharge), red throat, varying degrees of hemorrhagic diathesis with petechiae in the mucous membranes, constipation or hemorrhagic enteritis, hematuria and urobilinuria can

be observed. The main damage is done to the kidney by organisms localizing on the inner walls of the convoluted tubules; albuminuria with hyaline and granular cylinders, epithelial cells and leukocytes in the urine indicate toxic nephrosis. In fatal infections the cause of death is usually the retention uremia; the uremic coma develops during the second week of the disease.

Apart from the clinical symptoms, which are very often not conclusively diagnostic, the demonstration of the organisms in the blood is the only means of making a certain diagnosis early enough to help in the choice of specific treatment. A positive agglutination titer develops only after the sixth day. A rise in agglutination titer and later the demonstration of the organisms in the urine lead to the conclusive diagnosis.

Penicillin has been used successfully in the treatment of canine leptospirosis, but it does not destroy the organisms in the liver and kidneys. Data from the Hooper Foundation provide evidence that chronic renal leptospiral infections in hamsters and dogs can be successfully cured with streptomycin. The results suggest that this antibiotic can be used to advantage in the treatment of acute leptospirosis, as well as in prevention during possible exposure. Further experiments showed that a vaccine made with killed and concentrated *L. canicola* gives adequate protection against massive infection with the homologous strain, but not against heterologous strain.

[Brunner, Theodor K. Canine leptospirosis. No. Am. Vet., 30: 517-519. (Aug.) 1949.]

**TRANSMISSIBLE GASTROENTERITIS IN BABY PIGS.** Although transmissible gastroenteritis probably is not the most important cause of baby pig mortality, it has caused, in individual herds, losses as high as 80-100 per cent of the pigs farrowed. The experiments conducted by Bay and associates, involved a total of 250 pigs, 1 to 19 days old. These were used to determine the following: transmissibility of gastroenter-

itis by using ground organs and Berkeley N filtrates of some organs and tissues of affected pigs, blood cell changes, dilution of ground intestinal tract necessary for infection, effect of age of pigs and route of exposure on susceptibility, heat and phenol sensitivity of causative agent, the effect of normal gastrointestinal tract on baby pigs, and the method of treatment of the disease. All phases of the experimental work were carefully planned, and control animals were run with each trial made.

A study of the results of the experiments reveals the fact that the disease developed following *per os* exposure to ground tissues of the gastrointestinal tract, kidney, liver, brain, spleen and lungs of infected pigs. This indicates that the causative agent is widely distributed in the body of the infected animal. The blood cell changes showed a 49 percent increase in leucocytes on the fourth day after exposure. This increase in leucocytes may be attributed chiefly to an increase in neutrophils. A marked increase in the band forms of the neutrophils probably indicates a rapid production of neutrophils to meet the demand of the body defenses. Dilutions of gastrointestinal filtrates as high as 1:1,000,000 in physiological salt solution reproduced the disease experimentally. This small amount of infected material necessary to cause the disease perhaps explains its rapid transmission from litter to litter on an infected farm. Experimental results and field observations lead to the conclusion that susceptibility is greatly decreased as pigs get older. Older swine are frequently affected, but they rarely die. Heat inactivated the causative agent if a temperature of 56°C. was maintained for 45 minutes. A 0.5 percent phenol concentration in the filtrates of the gastrointestinal tract also inactivated the causative agent if incubated for 30 minutes at 37°C. Ground gastrointestinal tract of healthy pigs, when fed, did not cause any disease. Streptomycin, 125 mg. administered intramuscularly morning and evening for three days or until death, and sulfa-

methazine, 0.5 gr. per pound of body weight injected intraperitoneally twice daily for two days, failed to act as an effective treatment for the disease.

[Bay. W. W., Hutchngs, L. M. Doyle, L. P. and Bunnell, Doris E. Transmissible gastroenteritis in baby pigs. J.A.V.M.A. 115: 245-248 (Oct.) 1949.]

## **ALPHA-NAPHTHYL THIOUREA (ANTU) POISONING OF DOGS.**

The clinical aspects of poisoning by alpha-naphthyl thiourea (ANTU) are very characteristic and are usually sufficient to differentiate it from other chemical poisonings. Clinical symptoms include vomiting, rapid and difficult breathing, cold extremities, cyanotic and anemic mucous membranes and conjunctiva, extreme heart exertion, general weakness and severe pain. A subnormal temperature is a fairly good index that the animal will die. As the terminal stage approaches, weakness is more evident and the dyspnea is more extreme. Thoracic percussion reveals dullness. The animal does not respond to external stimuli. Most of the deaths occur in two to four hours after symptoms appear; many patients die within one hour. The prognosis should always be considered unfavorable.

When poisoning occurs, the necropsy findings are sufficiently characteristic so that a diagnosis can be made on the basis of them. The important postmortem lesions are: (1) hydrothorax found to some extent, at least, in 100 percent of cases; (2) severe pumonary edema in 98 percent; (3) catarrhal gastroenteritis in 95 percent; (4) unusual amounts of bile in the intestine found in a high but not accurately determined percentage of cases; and (5) very severe renal hyperemia well marked in 82 percent and existing to some degree in 100 percent of cases examined.

Conclusions derived from experimental toxicity trials were: (1) mature and old dogs were considerably more susceptible to the toxic effects of ANTU; (2) a tolerance to the acute poisonous effects of ANTU was readily developed in immature dogs by oral administration

of the drug; (3) dogs rendered tolerant by previous oral ingestion of ANTU were susceptible to ANTU injected intravenously or intraperitoneally; (4) plumonary edema and excessive hydrothorax were the immediate causes of death in the dogs poisoned orally with ANTU.

The use of thiourea test reagent of Grote is suggested for the probable indentification of alpha-naphthyl thiourea (ANTU) in biological materials collected ante mortem or post mortem from dogs. A positive test would indicate strongly that ANTU is present because of the improbability of finding other thiourea type compounds. Limited data are reported to support use of the test. The test reagent has some inherent disadvantages which limit its use.

[Jones L. Meyer, Smith Dwight A., and Smith, Hilton A. Alpha-naphthyl thiourea (ANTU) poisoning of dogs. Am. J. Vet. Res., 10: 160-167. (April) 1949.]

## **LABORATORY AND FIELD TECHNIQUE TO DETERMINE FERTILITY IN THE BULL.**

Since a veterinarian is often called to make evaluations of a stud bull's fertility, he should be familiar with the technique involved and should possess the necessary laboratory equipment. Clinical examination should precede the semen examination, and one must remember that no one test is accurate in itself.

### **Clinical examination**

An examination should be made to detect any anatomical abnormality of the prepuce, penis, testicles, epididymus, accessory organs, and inguinal rings. This examination should include a consideration of the diseases causing infertility, of which three chief causes of abortion in the female and transmissible by the male are *Trichomonas foetus*, *Brucella abortus*, or *Vibrio foetus*.

### **Semen examination**

When the semen has been collected, the initial motility, appearance, and quantity tests must be conducted im-

mediately. The semen is then protected from temperature shock and may be transported to the laboratory for the remaining tests. Acid-base concentration, methylene blue reduction (for activity determination), enumeration of spermatozoa, morphology, alive-dead stain, longevity (for vitality determination), and bacterial counts are tests run in the laboratory. Motility, quantity, pH, and appearance tests, which may be conducted with a minimum of difficulty, often will determine a bull's usefulness. Other tests may be used to supplement these if they are questionable.

Collectively, with a clinical examination, the laboratory semen tests may be used with reasonable assurance that a bull's fertility can be accurately estimated. It must be remembered that pregnancy is the only positive test of a bull's fertility.

[Herrick, John B. Laboratory and field technique to determine fertility in the bull. J.A.V.M.A. 115: 87-90 (Aug.) 1949.]

### Anthrax Treatment

The American Journal of Medical Sciences has a report on "Anthrax: 36 Human Cases of the External Type Treated Successfully with Penicillin." The doses of penicillin varied from 100,000 to 200,000 units daily administered intravenously or intramuscularly. Most of the cases were among wool workers. Twenty-seven of 30 cases had negative cutaneous lesions after three days of sodium penicillin treatment. The penicillin had "no direct immediate effect on the tissue damaging factor of cutaneous anthrax."

It is reported that concrete made with a cement into which about 1 percent of pentachlorophenol has been mixed, has proved practically germ free under working conditions, when untreated sections of the same floor were heavily contaminated with bacteria.

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