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Urethral Calculi in the Bovine Species

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distended with pus, there is ground for serious fear that breeding is at an end.

The hymen is a transverse membranous expanse stretching across the genital canal marking the boundary between the vagina and vulva. It represents the partition between the termination of the hind gut and the proctodeum of the embryo, which has failed to disappear in the lower or genito-urinary division of the cloaca. Generally it atrophies and completely disappears in our domesticated animals before their birth, but at times it persists as a broad expanse closing one-half or more of the genital canal.

**Imperforate Membrane**

The hymen sometimes persists as an imperforate membrane. In Great Britain it is common in a certain strain of white cattle, so it has become known as “the white heifer disease.” In any animal, imperforate hymen inevitably leads to the accumulation of menstrual and other debris in the vagina, which becomes a great retention cyst. Estrum may be regular, but copulation is impossible, because the penis of the male is prevented from entering the vagina. As soon as the vagina becomes fully distended, discomfort and pain result, causing colicky symptoms and expulsive efforts. During expulsive efforts the hymen may be forced back into the vulva and become visible between the vulvar lips.

Of interest in this case is the fact that imperforated hymen in the mare is apparently very rare. There occur a few rather vague descriptions of imperforated hymen in the mare in veterinary literature.

**REFERENCE**

1. The diseases of the genital organs of domestic animals, by W. L. Williams, 1921. G. E. Riley, '45

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Urethral Calculi in the Bovine Species. On December 14, 1944, an 8-month-old Hereford steer was presented at the Stange Memorial Clinic with the following history. The steer had been noticed about five or six days previously showing difficulty in urination. The patient could urinate some but only slightly. There was no blood noticed in the urine and there was considerable straining during micturation. Rumination had stopped two days before he was brought to the clinic. The owner of this calf has had several cases similar to this in this feeder calves every year.

The patient was examined and the following symptoms were noted. The abdomen was distended. A very small amount of clear urine was passed with no evidence of blood in the urine. The feces were drier than normal but otherwise defecation was normal. No odor of urine could be detected on the breath and there were no signs of severe uremia. A diagnosis of urethral calculi was made.

The steer was placed in a stanchion and the perineal region was clipped and scrubbed. The area was then cleansed with ether and alcohol and tincture of iodine was applied. Epidural anesthesia was induced using 10 cc. of a 2 per cent solution of procaine hydrochloride injected into the epidural space between the last sacral and the first coccygeal vertebrae.

**Incision**

An incision was made on the midline approximately four inches below the floor of the ischium. The incision was four inches long and extended inward to the penis. The root of the penis was isolated and transected about eight inches from its attachment. The amputated end of the penis was brought to the dorsal commissure of the incision and was sutured to the skin. The wound was then dusted with sulfanilamide powder. A probe was introduced into the urethra and it was found to be open up to the ischial floor.

Two trocars (10 gauge) were placed on either side of the abdomen so that they penetrated the wall of the abdomen to the peritoneal cavity and provided adequate bottom drainage. Several quarts of clear watery fluid with a distinct urine odor was drawn off. The animal was then replaced in the stall and a grave prognosis was made.

The patient was observed the following day and he appeared much brighter. On December 18, a trocar was inserted into
the abdominal cavity but very little fluid was obtained at this time. A dog catheter was passed up the urethra on December 20 and the urine expressed by manipulation of the bladder by way of the rectum.

The following day the patient was observed to urinate a small stream for over two minutes. Micturation was also observed the next day but only a small amount of water had been consumed by the steer. Two gallons of warm water was given via stomach tube which was followed by the intravenous injection of 350 cc. of a 50 per cent dextrose solution.

The steer was discharged from the clinic December 22 and an uneventful recovery took place. This operation made it possible for the owner to carry the calf on until market time with only slight loss due to the urethral calculi. Several calves suffering from urethral calculi have been treated in this manner at the Stange Memorial Clinic and the operation has proven very successful.

R. Vaughn Lewis, ‘45

Traumatic Gastritis Involving the Spleen. Occasionally there comes to the attention of the veterinarian an animal with a pathological condition which is very difficult to diagnose. Such was the case of an 8-year-old Holstein cow that was presented for treatment at the Stange Memorial Clinic on January 11, 1945.

History

The history of this cow indicated that before the last parturition she had been a normal, healthy animal from a regularly-tested herd. However, immediately after giving birth to a viable calf, the owner noted the animal developing a rather depressed attitude and for the next four weeks she became increasingly weak and emaciated. Further information revealed that the animal had a ravenous, in fact an almost depraved, appetite, but her milk flow was very scant.

After the first examination, acetonemia, tuberculosis, and pyelonephritis were considered as tentative diagnoses, but upon further examination of the animal these probabilities were abandoned. The patient was showing a normal temperature, pulse and respiration. Laboratory studies disclosed a few nematode ova contained in the feces, a slight albumin reaction in the urine, and a normal erythrocyte count. The most significant observation made in the study of the blood was the abnormally high white blood cell count, which was 18,280 per cu. mm., or nearly double that of the normal cow. However, the unsegmented neutrophils were in normal proportion to the segmented neutrophils; thus it was an atypical, septicemic blood picture, and the significance of the leukocytosis was not recognized.

An assortment of hardware found in the reticular contents.

A manual rectal examination revealed a slightly enlarged left kidney. A bacterial examination demonstrated a pure culture of Bacillus subtilis to be present in the urine. Further analysis demonstrated the presence of erythrocytes and leucocytes, as well as desquamated epithelial cells in the urine. The fecal material was normal in consistency and amount.

The animal continued to become weaker and eventually could not easily get to her feet. After seventeen days no positive diagnosis had been made, nor had any treatment been given. It was decided by the attending clinicians that the animal should be destroyed to alleviate its suffering.

The carcass was taken to the post-mortem laboratory where a careful autopsy was made. Among the interesting observations was a various assortment of hardware, ranging from cartridge cases to nails, found in the reticular contents and