

Bovine Case Review

By
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Case 1

A 2-3 year old Guernsey cow was admitted on Dec. 8, 1969, with a history of losing flesh, off feed except for hay, and labored respiration of 6 weeks duration. The tentative diagnosis of the referring veterinarian was of traumatic gastritis (hardware).

Clinical examination revealed extreme dyspnea with abdominal respiration. Temperature of 102° ranging up to 104°. Auscultation revealed a strong heart sound on the right side along with moist rales on the same side. The left side was abnormally silent. Thoracocentesis demonstrated a serosanguinous fluid on the left side. A bacterial culture of this fluid was negative.

Day by day the dyspnea became worse, being relieved only by the withdrawal of large quantities of fluid (1 to 15 liters per day).

On rectal examination, greatly enlarged iliac lymph nodes were palpated. An exploratory laparotomy was performed to do a lymph node biopsy. The biopsy results were the presence of numerous lymphocytes and many mitotic figures.

An extremely fetid diarrhea developed with large quantities of mucous contained within.

Clinical pathology revealed the following:

CBC

Hb 10.3 gm.%
PCV 30.5%
RBC 6,450,000
WBC 10,300
Seg. Neutro. 43%
Band Neutro. 2%
Lymphocytes 49%
Monocytes 6%

RBC morphology slight anisocytosis and poikilocytosis

BUN 14.8 mg.%

Urinalysis

yellow color
Sp. Gr. 1.029
Albumin 1+
Acetone slight positive
Sugar negative
Blood trace
Protein 3.1 gm.%

The cow died on Dec. 17, 1969, and was sent to post mortem. Post mortem revealed no gross lesions of the skin or subcutis. The left lung was very small and dark red. The anterior lobes were replaced with infiltrating tissue. The pleura was markedly thickened. The mediastinal and pelvic lymph nodes were enlarged with areas of necrosis. The liver was swollen, yellow, and soft. The uterine wall near the cervix was also markedly thickened. Histopathology revealed many lymphocytes and numerous mitotic figures as did the lymph node biopsy.

From the data given one could make the correct diagnosis of malignant lymphoma (lymphosarcoma). The clinical signs of this disease condition are extremely variable due to the numerous and quite variable tissues involved. Infiltration of many tissues have been observed with no definite tissue being especially predisposed. In the bovine some tissues that are quite commonly involved are the heart, abomasum, lymph nodes, and the uterus.

At the present there are no known practical treatments for this condition, therefore the prognosis is always extremely grave.

In all reality the only method of specifically diagnosing the disease is with a histopathological examination of a biopsied tissue or of post mortem specimens. In these one may observe the increased

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numbers of lymphocytes and the numerous mitotic figures. Infiltration of the various tissues is due to the lymphocytes that are proliferating.

Case 2

A six year old Angus bull was admitted to the clinic on Feb. 7, 1970 with a history of a chronic diarrhea of 6 weeks duration. The bull was very emaciated and depressed.

The physical exam revealed a temperature of 101.6° F, heart rate of 72 per minute, and a poor hair coat with an infestation with lice. Rectally, a thickened rectal wall, large intestine, and enlarged lymph nodes were palpated. At this time three tentative diagnoses were put forth:

- 1) lymphosarcoma
- 2) paratuberculosis
- 3) tuberculosis

An exploratory laparotomy was performed and revealed a thickened large intestine, smaller kidneys than normal and enlarged mesenteric lymph nodes which were then biopsied along with a section of intestine. The biopsy of the lymph node revealed a chronic granulomatous lymphadenitis with marked infiltration of histiocytes laden with acid fast organisms.

Clinical pathology results were:

CBC

Hb 6.7 gm.%
PCV 21%
RBC 4,080,000
WBC 7,500
Eosinophil 12%
Seg. Neutro. 51%
Band Neutro. 5%
Lymphocytes 29%
Monocytes 3%

RBC morphology normal

Several atypical lymphocytes were observed

Fecal

Light load of G-I nematodes

A diagnosis of paratuberculosis (Johne's Disease) was made from the lymph node biopsy and the bull was euthanized on Feb. 17, 1970. The post mortem results were as follows: All mesenteric lymph nodes were markedly enlarged and firm.

Both the small and large intestinal walls were greatly thickened and the mucosa thrown into corrugations. Cecal ulcers were also observed.

Thus from the post mortem findings one can easily substantiate the diagnosis of paratuberculosis. A rectal scraping could also have been taken and shown to contain numerous scattered acid fast organisms. With tuberculosis the acid fast organisms are generally seen as clumps. The thickened, corrugated mucosa is quite diagnostic but one must be aware of the fact that the same effect occurs when the section of gut is allowed to lie on a cold surface. However if the corrugations are due to cold, they are easily stretched apart while with paratuberculosis they are permanent features.

The disease is thought to be contracted while the animal is young and only becomes evident after some stress when the animal is older. The condition is generally not seen in animals under two years of age.

The prognosis is extremely poor here with treatment being unrewarding.

Every 8 seconds a new American is born. He is a disarming little thing, but he begins to scream loudly in a voice that can be heard for seventy years. He is screaming for 56,000,000 gallons of water, 21,000 gallons of gasoline, 10,150 pounds of meat, 28,00 pounds of milk and cream, 9,000 pounds of wheat, and great storehouses of all other foods, drinks, and tobaccos. These are his lifetime demands of his country and its economy. In addition, he is yelping for a Paul Bunyan chunk, in his own right, of the nation's pulpwood, paper, steel, zinc, magnesium, aluminum, and tin.

In these days of nature's rapidly depleting resources, we may be able to satisfy his needs, but can we satisfy his greed?

—*Moment in the Sun*
Robert Rienow and
Leona Train Rienow