

STUDIES ON BOVINE TRAUMATIC RETICULO- PERITONITIS IN BAGHDAD

A. A. YASS , I.Q. HASSAN AND A. SH. SULTAN

Department of Medicine and Therapeutics, College of
Veterinary Medicine, University of Baghdad, IRAQ.

SUMMARY

A total of forty-five cases of traumatic- reticulo- peritonitis in cows (16 cows ill for 24-48 hrs and 29 cows ill for 72-120 hrs). in Baghdad were diagnosed clinically, laboratory and autopsical findings. The most valuable diagnostic signs were increased rectal temperature (39.9 C), respiratory rates (36/min.) and heart beats (95/min.) , decreased in milk production (100.00 %), ruminal atony (95.56%), abdominal pain (93.33%), disturbed appetite (91.11%), decrease manure production (84.44%) and recurrent tympany (84. 44%).

The total and differential leucocyte counts provided good diagnostic and prognostic data. The determination of total plasma protein and fibrinogen were used as aids to the diagnosis of traumatic reticulo-peritonitis in this study.

INTRODUCTION

Traumatic reticulo peritonitis (TRP) is a complex of diseases occurring when sharp or pointed foreign bodies (nails, wire) accumulate in the reticulum of cattle and injure the reticular wall, sometimes piercing it and penetrating the peritoneal cavity where they may proceed further and cause injury to surrounding structures.

TRP is an important problem confronting many modern day dairy veterinary practitioners. Its importance stems from untold economic loss (in terms of milk production, impaired capacity to gain weight and reproductive ability) as well as fatalities.

In industrialized countries, metallic foreign bodies may be present in the reticulum in up to 90% of normal cattle (3) and residual traumatic lesions may be present in as many as 70% of dairy cows (4). Amongst those animals seen clinically as being sick, about 25% developed serious complications that make their prognosis poor. The other 75% can be expected to recover completely with conservative treatment on routine surgical intervention.

In Iraq, little attention have been paid to TRP, accordingly, the present study was made in an attempt to determine the typical symptomatology and hemogram of the TRP.

MATERIALS AND METHODS

During a four-year period, forty-five cases of TRP were diagnosed clinically, laboratory and autopsical findings in the Department of Medicine and Surgery, College of Veterinary Medicine, University of Baghdad.

CLINICAL EXAMINATION

Clinical examination of forty-five cases of cows were recorded, it included the following parameters, temperature, pulse, respiration, ruminal atony, abdominal pain, presence of bloat, consistency of feces, muscular trembling, dullness and recumbency.

Clinico-pathological determination

Blood samples were collected from each cow from the jugular vein for the following analysis:- Total and differential leucocytic counts, total plasma protein (TPP) and plasma fibrinogen (PF). The techniques used were according to Coles.

RESULTS

A total of forty-five TRP cases in cows were diagnosed during this study. The ranges and means of rectal temperatures, heart rates and respiratory rates are presented in Table (1).

Out of the total 16 cows ill for 24-48 hrs and 29 cows ill for 72-120 hrs (81.25% and 72.4%) had increased in rectal temperature, (62.5% and 65.5%) had increased in respiratory rates, (68.75% and 75.68%) had increased in heart rates were over (39.8 C and 39.9 C), (35/min. and 38/min.) and (95/min. and 95/min.) respectively (Table 1).

The incidence of various clinical signs in the 45 cows examined as having TRP on necropsy are shown in Table 2.

The means and ranges of differential leukocyte values and the determination of TRP and PF for 45 cows with TRP are presented in Tables 3 and 4 respectively.

DISCUSSION

The purpose of this study was to determine how frequently the clinical signs and hemogram findings of TRP in cows could be expected to deviate from those described in the idealized text book case and to determine whether a more exact knowledge of these deviations would increase diagnostic accuracy.

It was observed that clinical signs in cows of 72-120 hrs illness appeared to be more severe than cows of 24-48 hrs illness. This probably is due to the long duration of illness without treatment, presence of toxemia due to peritonitis and increase level of ketone bodies in blood due to anorexia.

It was also found that increase rectal temperature (30.9 °C), respiratory (36/min.) and heart (95/min.) rates, decrease milk production (100.00%), ruminal atony (95.56%), abdominal pain (93.33%), disturbed appetite (91.11%), decrease manure production (84.44%) and recurrent tenpany (84.44%) were the most valuable diagnostic signs in 45 cows of 24-48 hrs and 72-120 hrs illness.

In traumatic reticulo peritonitis, the classical syndrome is one of sudden onset of grunting pain, ruminal stasis, complete anorexia, severe fall in milk yield, pain on percussion of abdomen and slight but significant fever (5, 7, 8, and 9).

The initial reaction of TRP is one of acute local peritonitis. Local peritonitis with subsequent adhesions, and occasionally generalized, peitonitis develops in the peritoneal cavity following injury causes ruminal atony, abdominal pains and toxemia (5).

Trauma of the reticulum may allow ruminal bacteria, especially Spherophorus necrophorus, to infect subepithelial tissues, penetrates branches of the portal vein and be conveyed to the liver where abscesses may form (9) .

An attempt has been also made to indicate the value of the total and differential leukocyte counts as a diagnostic and prognostic tool in TRP. It was observed, that the results indicated leucocytosis in all cows of (24-48 hrs illness and cows of 72-120 hrs illness). This leucocytosis is due to marked neutrophilia (segmented and band neutrophils) and lymphocytosis. The leucocytosis was due to acute inflammation of the peritonium.

The resulting mechanical injury and mixed bacterial infection carried by the metal commonly evoke a persisting leukocytosis (5). Carroll and Robinson, 1954 (2) found that the differential leukocyte count was of great value to confirm the diagnosis of traumatic gastritis, and to provide a prognosis for surgery. The present findings suggest that the total and differential leukocyte counts provide good diagnostic and prognostic data in cows with TRP.

It is evident from the present study that total plasma protein (TPP) and plasma fibrinogen (PF) rises in all cows with TRP. This findings agree well with the findings reported by (5, 10, 11) who found TPP and PF rises with inflammation. Elevated TPP is not pathognomonic for TRP in a cow with a gastro-intestinal disorder, but has predictive value in diagnosis(11). In cases of severe peritonitis, the PF level may be increased up to 10-20 g/dl (5). The present study suggest that the determinations of TPP and PF could be used as an aid to the diagnosis of TRP.

It is concluded from the present study that the diagnosis of TRP should be based on the composite findings of the clinical signs and hemogram

Table 1 : Incidence of rectal temperatures, respiratory and heart rates in relation to the number of coves had TRP.

Duration of illness	No. of cows exam.	Temp (C) range (mean)	No. of cowa had increased temp.	Respiratory rate/min. range (mean)	No. of cowa had increased resp. rate.	Heart . range (mean)	No. of cowa had increased heart rate.
24-48 hrs.	16	39.2-40.3 (39.8)	13 81.25 %	18-55 (35)	10 62.5 %	56-121 (95)	11 68.75
72-120 hrs.	29	39.3-40.8 (39.9)	21 72.41 %	22-59 (38)	19 65.51 %	59-114 (95)	22 75.68 %

Table 2 : Incidence of clinical signs in cows with TRP.

Duration of illness	No. of cows examined	Clinical sign (No. with %)										
		Abdominal pain	Typhany	constipation	muscular tremors	Dullness	Recumbancy	Diarrhea	Disturbed appetite	Ruminal atony	Decre milk y	
24-48 hrs.	16	14	13	12	11	9	2	2	14	16	16	
		87.50	81.25	75.00	68.75	56.25	12.5	12.5	87.50	100.00	100.00	
72-120 hrs.	29	28	25	26	22	22	4	0	27	27	29	
		96.55	84.21	89.65	75.86	75.86	13.79	0.0	93.10	93.10	100.00	
Total	45	42	38	38	33	31	6	2	41	43	45	
		93.33	84.44	84.44	73.33	68.89	13.33	4.44	91.11	95.56	100.00	

Table 3 : Means and ranges of total and differential leucocyte counts in cows with TRP.

Duration of illness	No. of cows examined	Total leucocyte counts	Differential leucocyte counts (%)						
			segmented neutrophils	Band neutro	Lymphocyte	Monocyte	Eosinophils	Basophils	
24-48 hrs.	16								
Range		13.5-19	59-69	15-45	0.95-5.3	0.10-0.85	0.0-0.3	0.0-0.21	
Mean		15	60	32	3.8	0.4	0.17	0.14	
72-120 hrs.	29								
Range		13.7-21	44-71	19-70	0.75-5.1	0.4-1.5	0.10-0.25	0.0-0.3	
Mean		16.1	62	51	30	0.6	0.19	0.16	

TABLE 4: Total plasma protein and plasma fibrinogen in diagnosis of TRP in cows.

Duration of illness	No. of cows examined	Total plasma protein (g/dl)	Plasma fibrinogen (g/dl)
24-48 hrs.	16		
Range		6.8-13.1	2.2-9.1
Mean		11	8.1
72-120 hrs.	29		
Range		7.1-13.6	4.0-10.4
Mean		11.6	9.5

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دراسة حول مرض التهاب الشبكية والخلب الوخزي في الابقار في بغداد

عبد الوهاب عبد الرزاق ياس، أبتسام قاسم حسن و علي شلش سلطان

فرع الطب والعلاج- كلية الطب البيطري- جامعة بغداد/ العراق

الخلاصة

أجريت الدراسة على خمس وأربعين حالة سريرية مصابة بالتهاب الشبكية والخلب الوخزي في الابقار (16 بقرة كانت مريضة لمدة 24-48 ساعة) و (29 بقرة مريضة لمدة 72-120 ساعة).

شخصت هذه الحالات من الناحية السريرية والمختبرية و الجراحية أتسمت العلامات التشخيصية بارتفاع درجة حرارة الجسم (39.9°C) ارتفاع سرعتي التنفس والقلب (36/دقيقة)، (95/دقيقة) على التوالي، انخفاض إنتاج الحليب (100%)، وهن الكرش (95.56%) الام البطن (93.33%)، اضطراب الشهية (91.11%)، قلة التغوط (84.44%) ونفاخ متعاود (84.44%).

لقد أوضح العدد الكلي والفارق للخلايا البيضاء نتائج تشخيصية جيدة في تشخيص المرض. لقد استعمل فحص تقدير بروتين البلازما الكلي والفايبرينوجين للعمل على تشخيص التهاب الشبكية والخلب الوخزي في هذه الدراسة، حيث كان له دعائم تشخيصية فساعدته في تشخيص المرض.