

# Self-assessment

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A Limousin cross Friesian beef cow presents with five days' history of inappetance. The cow is dull and depressed and stands with an arched back with the neck extended and head lowered (Fig. 1). The cow has a painful expression with the ears back and a fixed glazed stare. On clinical examination the rectal temperature is 39.2°C. The heart rate is 80 beats per minute. No abnormalities are heard during auscultation of the chest. Ruminal movements are depressed occurring once every 2-3 minutes. The cow appears in discomfort when pressure is applied over the withers but she neither grunts nor dips her back. There are scant dry faeces but no other abnormal findings on rectal examination.

Routine haematological examination in this cow reveals mild anaemia (total red blood cell count  $4.6 \times 10^{12}/l$ , range  $5-9 \times 10^{12}/l$ ; haemoglobin 8.5 g/dl, range 8-14 g/dl, and a packed cell volume of 0.24 l/l, range 0.24-0.34 l/l). There is a marked leucocytosis ( $17.2 \times 10^9/l$ , range  $4-10 \times 10^9/l$ ) comprised of 87% neutrophils with 3% immature neutrophils and 10% lymphocytes. There is a markedly increased haptoglobin concentration (2.02 g/l, normal less than 0.1 g/l) indicating bacterial infection. There is a profound hypoalbuminaemia and high globulin concentration (16 g/l and 50.5 g/l, respectively) consistent with a chronic severe bacterial infection.

## QUESTIONS

1. What conditions would you consider?
2. How would you confirm your diagnosis?
3. What treatment would you administer?
4. What action would you take?
5. What control measures could be adopted?
6. What samples could have been collected had the cow been presented on the first day of illness?

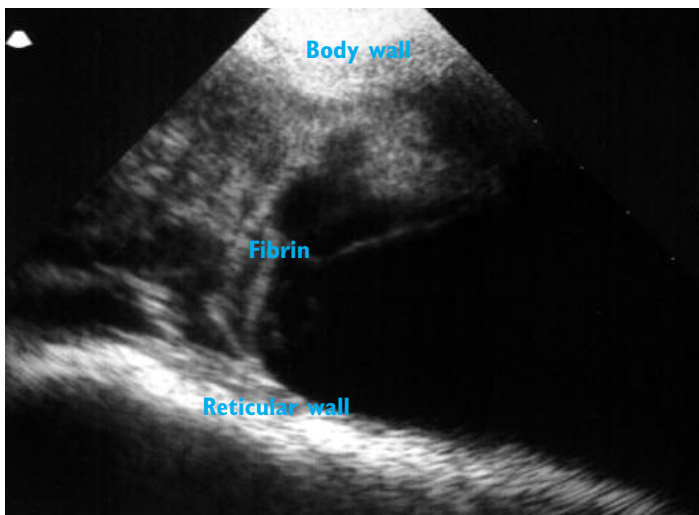


**Fig. 1:** A Limousin cross Friesian beef cow presents dull and depressed and stands with an arched back with the neck extended and head lowered.

# Self Assessment

## ANSWERS

1. Traumatic reticulitis  
Localised peritonitis  
Endocarditis  
Pleural abscess  
Liver abscessation  
Septic pericarditis  
Chronic suppurative pneumonia  
Caudal vena cava thrombosis  
Abomasal ulceration/perforation with peritoneal infection limited by the enveloping omentum
2. Transabdominal ultrasonography is the best method to assess the extent of peritoneal reaction/abscessation caused by a penetrating reticular foreign body. Examination in this case immediately caudal to the xiphisternum in this cow revealed large quantities of fluid, extending to at least 6 cms, displacing the reticulum from the floor of the abdomen (Fig. 2). Numerous large fibrin tags can be observed within the exudate.



**Fig. 2:** Transabdominal ultrasonography immediately caudal to the xiphisternum reveals large quantities of inflammatory exudate (anechoic or black area) with large fibrin tags (hyperechoic or white bands) displacing the reticulum (broad white band at bottom of image) from the floor of the abdomen (probe at top of image).

Reticular motility is very powerful in normal cattle with forceful contractions and propulsion of ingesta clearly visible at the beginning of the primary cycle. In this case there was no movement of the reticulum.

Cattle with endocarditis usually present with pain associated with multiple joint effusions (Fig. 3); a heart murmur is not always audible.

Pleural abscesses can prove difficult to distinguish from traumatic reticulitis/localised peritonitis on clinical examination alone but are readily



**Fig. 3:** Cattle with endocarditis usually present with pain associated with multiple joint effusions; a heart murmur is not always audible.

identified ultrasonographically using a 5 MHz sector scanner.

Liver abscessation caused by *Fusobacterium necrophorum* can present with the clinical signs described and would prove difficult to diagnose accurately.

Septic pericarditis would be audible on clinical examination.

Cattle with chronic suppurative pneumonia cough frequently and have a purulent nasal discharge although the extent of lung pathology necessitates ultrasound examination.

Caudal vena cava thrombosis presents with similar clinical findings to chronic suppurative pneumonia until fatal epistaxis.

Melaena would be expected in cattle with abomasal ulceration.

3. After five days, surgery to remove the wire (if still present within the reticular wall) and treatment of the septic peritonitis with antibiotics will not be successful due to the fibrinous adhesions, which markedly reduce reticular contractions and propulsion of digesta.
4. Euthanasia for welfare reasons is the best option (Fig. 4). Failure of the cow to improve/further deterioration after a course of antibiotics should result in the farmer's compliance if he/she was unprepared to accept the initial prognosis.



**Fig. 4:** After five days, surgery to remove the wire (if still present within the reticular wall) and treatment of the septic peritonitis with antibiotics will not be successful due to the widespread fibrinous adhesions (necropsy of the cow featured in Figs. 1 and 2).

5. The prophylactic use of magnets is said to be highly effective in the control of traumatic reticulitis in management systems where disease is common. Outbreaks are described where car tyres with metal rings inlaid in the rubber, used to hold down silage clamp sheeting, have been shredded through forage wagons mixing complete diets. Ash in bonfire sites appeals to cows and are another common source of sharp metal objects.
  
6. Abdominocentesis (Fig. 5) immediately caudal to the xiphisternum from a cow with peritonitis associated with traumatic reticulitis within the first 24-48 hours (Fig. 6) typically yields an inflammatory exudate with an increased protein concentration (>30 g/l), and elevated white cell count (>3.0 x10<sup>9</sup>/l) comprised almost entirely of neutrophils. Thereafter fibrin tags/clots often block the needle during attempted sample collection. Successful removal of the wire (Fig. 7) from the cow featured in Fig. 6.



**Fig. 6:** Cow with traumatic reticulitis presented within the first 24-48 hours.



**Fig. 7:** Successful removal of the wire from the cow featured in Fig. 6.



**Fig. 5:** Abdominocentesis immediately caudal to the xiphisternum from a cow with peritonitis associated with traumatic reticulitis within the first 24-48 hours.