By Rob Fairley

A gut reaction

The common causes of peritonitis in cattle – and how to recognise it.

Peritonitis in cattle is not uncommon and there are three main causes:

1. Rupture or perforation of a viscus.
2. A perforating wound.
3. Part of systemic infection.

In weaned calves, the most common cause of peritonitis is a perforated abomasum. Perforation of the small intestine may produce a similar postmortem picture, but it is much less common. The typical postmortem picture is of 'dirty' peritonitis due to the contamination of the peritoneum with gut contents (figure 1). With dirty peritonitis, therefore, there is no point in performing microbiology culture on the peritoneal exudate. Unfortunately, histological examination of the perforated area is of no use in helping to determine why this occurs – the lesion is too chronic at the stage of perforation.

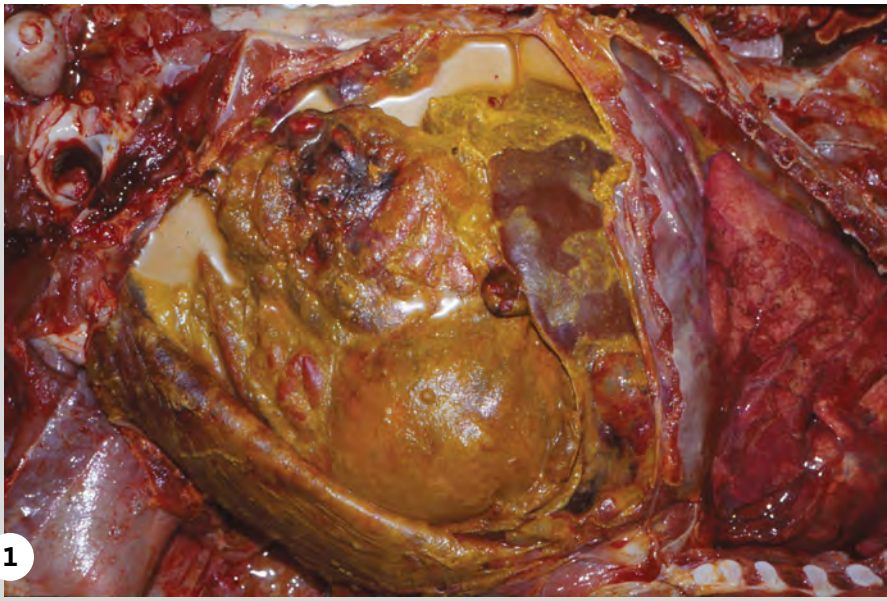
In New Zealand, peritonitis due to systemic infection with *Pasteurella multocida* type B is quite common in healthy weaned calves. It can be confronting for a farmer to find four to six healthy calves suddenly dead, and further calves dying acutely in the next several days. Peritonitis due to *P. multocida* is also occasionally seen in quite young calves, although it is more commonly due to *Escherichia coli* as a result of the failure of passive transfer. This type of peritonitis is much 'cleaner' and consists of exudate of fibrin and neutrophils without the contaminating gut contents (figure 2). Upon opening the abdomen and finding peritonitis of this type, you should use a swab to take an aseptic sample of the peritoneal exudate for culture. When it is part of a systemic infection, it is common to have pleuritis and pericarditis, as well as peritonitis.

In heifers, a specific peritonitis is sometimes seen in a naturally mated animal due to perforation of the vagina by the bull. Some veterinary practitioners have been presented with more than one dead animal suffering from this condition, and these cases may be puzzling at postmortem. They present with a lack of gut contents in the peritoneal exudate, and you may believe you are dealing with peritonitis secondary to systemic infection. However, the age of the animal is a clue to look closely at the vagina. We sometimes diagnose these cases histologically by observing sperm in the peritoneal exudate.

Another form of perforation occasionally occurs in bulls that ride each other and perforate rectums. A 'dirty' peritonitis in such an animal at postmortem indicates a need to examine the distal colon/rectum more closely.

Peritonitis can be fatal by itself. Don't get distracted by red intestines in some of these cases; the redness is usually due to blood pooling in the intestinal circulation from shock (and sometimes there is active hyperaemia of the serosa of the gut due to peritonitis). VS

Rob Fairley is a pathologist at Gribbles Veterinary.



1

2

FIGURE 1: Peritonitis in a calf secondary to abomasal perforation.

FIGURE 2: Peritonitis from systemic infection (*Pasteurella multocida* in this case). Note the cleanliness of the exudate compared to that from a perforated abomasum. PHOTO COURTESY OF KATE FOXCROFT.

IMAGERY: SUPPLIED