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BACKGROUND: Parietal fibrinous peritonitis (PFP) is a particular localised form of peritonitis in cattle, described as an aseptic accumulation of 5–50 L of liquid and fibrin between the outer sheath of the parietal peritoneum and the abdominal wall. Although its precise aetiology is unclear, it is generally accepted that PFP is always initiated by laparotomy [1, 2].

Despite the assumption that PFP is always triggered by an initial laparotomy, we have observed one case of PFP in heifer that had never undergone surgery. The clinical history, clinical presentation, diagnostic approach, treatment and outcome of this unique case will be described below.

CASE DESCRIPTION AND INVESTIGATIONS

HISTORY: A 19-month-old Belgian blue heifer, 60 days pregnant by artificial insemination (AI), had shown a gradual reduction of feed intake, abdominal pain and hyperthermia. The referring veterinarian had treated it by flunixin meglumine and penicillin procaine. Initially, temperature had decreased and the general condition had improved. However, three weeks later, the same clinical symptoms had recurred without further response to the treatment and the animal was referred to the Veterinary Clinic of Liege University.

CLINICAL EXAMINATION: At inspection, the heifer presented bilateral abdominal swelling, an arched back and a low body condition **Table (I)**.

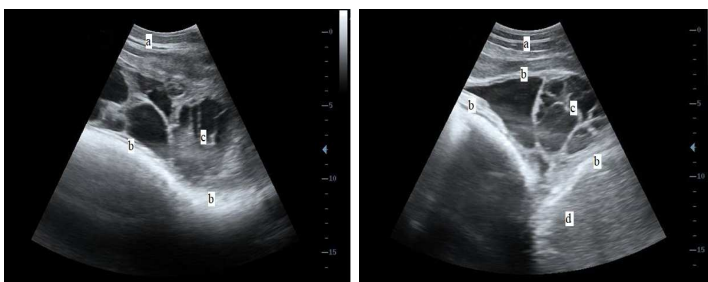
Table I: Clinical examination parameters observed in the patient, compared to normal ranges [3]

Clinical examination	Results	Normal range
Respiratory rate	60/min	10 to 30/min
Rectal temperature	39.7°C	38.5 to 39.5°C
Cardiac frequency	84 beats/min	60 to 80/min
Ruminal contraction rate	4/5 min	1 to 2/min

Rectal palpation revealed reduced hand mobility, a depressible and fluctuating mass with a granular surface adjacent to the right abdominal wall, leading to the suspicion of: abscess, tumour, haematoma, traumatic reticulo-peritonitis or PFP.

ULTRASOUND EXAMINATION: Transabdominal ultrasound examination showed a large cavity attached to the abdominal wall, surrounded by a 1–2 cm thick hyperechoic capsule, filled with an anechogenic fluid and echogenic fibrin confirming a diagnosis of PFP (**Figure 1**).

Figure 1: Transabdominal ultrasound sections of the PFP. a: abdominal wall, b: Fibrinous capsule, c: lamellas of fibrin and inflammatory fluids, d: compression of digestive organs



CONCLUSION: To our knowledge, this is the first reported case of a PFP in a cow without a clinical history of surgical intervention. We hypothesise that a perforation of the vaginal wall, cervix or uterus during AI might have created the initial lesion finally leading to PFP. The diagnosis of PFP is made by rectal palpation and ultrasound examination, the surgical drainage is the only sensible treatment option and the complete recovery requires a long period.

BLOOD AND PERITONEAL FLUID ANALYSIS: Blood samples were taken in dry tubes and PFP fluid sample was collected in sterile tubes via ultrasound-guided paracentesis **Table (II)**

Table II: Blood and peritoneal fluid parameters observed in the patient, compared to normal ranges [1, 4]

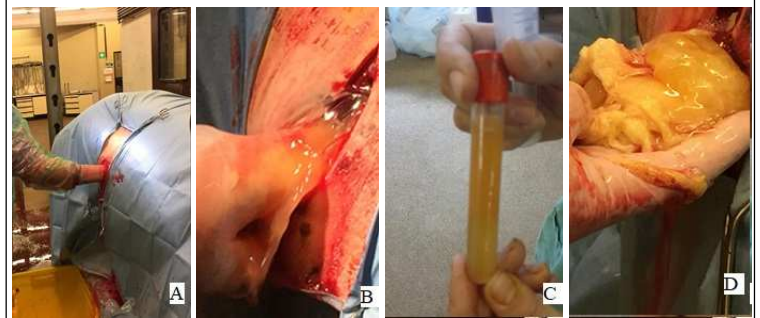
Blood parameter	Results	Normal range
Fibrinogen concentration	8 g/l	2 to 7 g/l
Glutaraldehyde coagulation time	2 min	↑inflammation < 3 min
L-lactate concentration	9.20 mmol/l	0,60 – 2,20 mmol/l
Glucose concentration	4.44 mmol/l	2,60-4,90 mmol/l
Peritoneal fluid parameter	Results	Normal range
Total protein concentration	50 g/l	Exudate > 30 g/l
Glucose concentration	1,66 mmol/l	3.81-5.06 mmol/l
L-lactate concentration	2 mmol/l	0.40-0.79 mmol/l
Bacterial culture	- <i>T. pyogenes</i> - <i>E. coli</i>	/

TREATMENT AND POST-OPERATIVE CARE

TREATMENT: Surgical treatment (**Figure 2**) was combined with meloxicam (0.5 mg/kg, every other day over five days), intravenous NaCl solution (20 L of 0.9%) and amoxicillin (15 mg/kg IM every other day) during 10 days.

POST-OPERATIVE CARE: The surgical wound was left open and the formed cavity was daily flushed with 20 L of a 0.05% chlorhexidine solution until complete healing achieved after 5 weeks.

Figure 2: Macroscopic aspect of fibrin and peritoneal fluids during the surgical drainage of PFP. A: Localisation of the surgical incision. B: Peritoneal liquid flow after capsule incision. C: Macroscopic aspect of peritoneal fluids. D: Fibrin accumulation.



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