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Surgical management of a rare case of mechanical intestinal ileus with extra-luminal adhesions between jejunal loops due to a linear foreign body in a Murrah buffalo

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A 4-yr-old non-pregnant female buffalo weighing 469 kg was presented with the history of complete cessation of passage of faeces since 10 days. The animal was previously treated by a local veterinarian by fluid therapy and oral administration of paraffin oil, along with non-steroidal anti-inflammatory drugs and antibiotics, with no improvement.

On physical examination the animal was found to be severely dehydrated with receding eyeballs, pale and dry mucous membrane and a body temperature of 101.5ÚC. No colicky sign was observed during the physical examination. Contour of the left and right flank of the animal were observed for any bloat in the left flank and swelling in the right flank. Rumen motility was also recorded, which was reduced to 1-2 times per 6-7 min.

On rectal examination the dilated intestinal loops were palpable, but no foreign body or intussusception could be detected. On retracting the hand following rectal examination, white mucoid discharge was seen on the sleeve, suggestive of the intestinal obstruction. Haemato-biochemical examination revealed a decrease in the packed cell volume and an increase in total leukocyte count along with increase in aspartate amino transferase (AST), alkaline phosphatase (ALP) and hypoproteinaemia.

Abdominal ultrasonographic examination was done from the right flank to find the extent of intestinal dilatation and intestinal motility. A curvilinear probe with 3.5-6.5 MHz capacity was used to scan the abdomen, starting from the lower right flank up to the 11th and 12th intercostal space. Intestinal dilatation was observed with maximum intestinal diameter of 37.3 mm in transverse section and 40.7 mm in longitudinal section (Fig. 1). Only passive intestinal motility was evident with whirlpools of ingesta moving in the intestinal segments. Intestinal dilatation in all the segments of sonogram was suggestive of obstruction as it exceeded the upper limit of intestinal diameter at 35.2 mm (Bhat, 2021).

On the basis of clinical findings, the case was tentatively diagnosed as intestinal obstruction and a right flank exploratory laparotomy was planned. The animal was stabilized with intravenous fluids i.e, Ringer's lactate and dextrose normal saline to manage the metabolic acidosis and dehydration.

Preoperatively, the animal was administered with antibiotics (Enrofloxacin, 5 mg/kg body wt) and NSAID (Meloxicam, 0.5 mg/kg body wt). To desensitize the flank, right proximal paravertebral nerve block was achieved by administering lignocaine 2% (10-15 mL each) at ventral branch of T13, L1 and L2 spinal nerves, along with linear infiltration of the incision site (1 mL/cm). Along with paravertebral block, xylazine-butorphanol-ketamine (XBK) mixture made by combining the respective compound at 1, 2 and 3 mL respectively, was given @ 1 mL/150 kg body weight. 5-10-20 regimen of ruminant field anaesthesia for standing procedure was taken in consideration during the mixture formulation and administration in which butorphanol was given @ 0.01 mg/kg, xylazine @ 0.02 mg/kg and ketamine @ 0.04 mg/kg such that total administered drug did not exceed this value (Abrahamsen, 2008). Out of the total dose of 3.1 mL of XBK, only 1 mL was given intravenously, and 1 mL

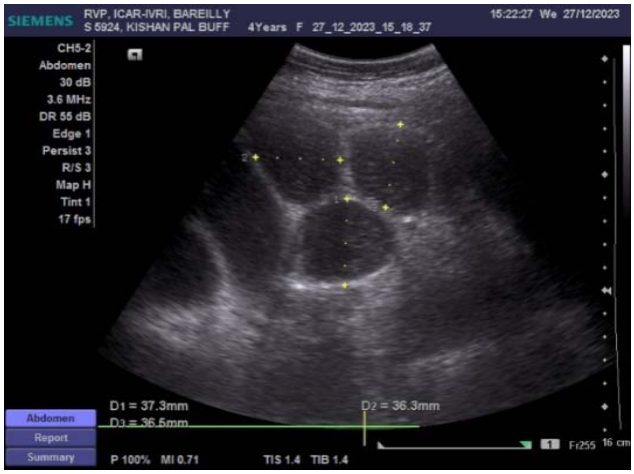

Fig. 1: USG examination of intestinal loops with dilation of more than 35.2 mm

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was given intramuscularly keeping in mind the adjunctive regional analgesia produced by paravertebral and linear infiltration of the lignocaine so that the animal did not become recumbent. The surgical site was aseptically prepared by first clipping the area, and the proposed site was scrubbed with 2% chlorhexidine solution and painted with 7.5% povidone iodine solution.

The skin was incised from the right paralumbar fossa followed by three layers of abdominal muscles and parietal peritoneum. Visceral abdominal cavity was approached by the caudal vent of visceral peritoneum near the tuber coxae, and the intestinal loops were palpated for locating the site of obstruction. On palpation a hard cranial segment of the jejunum was felt and an adhered cord was felt between the former and collapsed caudal segment of the jejunum. To exteriorize the adhered segments, the incision was elongated ventrally to avoid contamination of the abdominal cavity by the breakage of the adhesion, intraabdominally. After exteriorizing and visualizing the adhered jejunal

Fig. 2: Adhesion (Ad) formed between jejunal loopsCr

segment (Fig. 2), the adhesions were broken and inspected for any leakage of intestinal content. The necrosed area in the caudal jejunal segment was closed by double layer of inverting Cushing suture using polyglactin No 2-0. A large necrosed area in the cranial segment was resected after application of Doyen's intestinal clamps. Ligatures were applied to the mesenteric blood vessels by polyglactin No-0, dorsal to the site of intestinal clamps. Local infiltration with lignocaine 2% was done on the proposed line of resection. The cut end of the mesentery was sutured by polyglactin No-0 in lock stitch suture pattern. End-to-end intestinal anastomosis was done by appropriating the size of the intestinal loops by cutting the smaller segment at an angle of 30Ú. First layer of simple continuous pattern was followed by second layer of Cushing pattern using polyglactin 2-0. Doyen's intestinal clamps were removed to look for any leakage, and after replacing the segment in the body cavity, the parietal peritoneum was closed by polyglactin No.1 in continuous suture pattern. The abdominal muscles were sutured using lock stitch sutures, followed by skin suturing in cross Mattress pattern.

Fig. 3: Threaded needle (N) found in the dilated jejunal segment

On dissecting the resected intestinal segment, a threaded needle was found, which could have caused extraluminal adhesions after piercing through the intestinal lumen (Fig. 3). Bypassing of a metallic foreign body through the reticulum, and its presence in the jejunum is a rare presentation.

Postoperatively, the animal was maintained on intravenous fluid therapy with nil-per-os for 5 days. Enrofloxacin (5 mg/kg body wt) for 7 days, and meloxicam (0.5 mg/kg body wt) for 5 days were administered intramuscularly. Antiseptic dressing of the surgical site with 0.5% povidone iodine was done with suture removal on 14th day. The animal passed the faeces successfully 18 hr after the surgery and returned to normal appetite and dung consistency 5 days after the surgery.

To conclude, a rare case of intestinal ileus with extra-luminal adhesions between jejunal loops due to penetration of a threaded needle in a buffalo was diagnosed and treated successfully.

Reference

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