International Journal of Livestock Research, Vol. 11 (2) Feb' 2021
http://www.ijlr.org
eISSN: 2277-1964
NAAS Rating 2020 – 5.36

Case Report

Surgical Management of Intestinal Obstruction Due to Foreign Body in a Cocker Spaniel Dog

G. D. Singh[1], Ramesh Tiwary[1], Rajesh Kumar[1], Anil Gattani[2] and Ajeet Kumar[2]*

[1]Assistant Professor, Department of Surgery and Radiology, Bihar Veterinary College, Patna, Bihar, INDIA
[2]Assistant Professor, Department of Biochemistry, Bihar Veterinary College, Patna, Bihar, INDIA

*Corresponding Author: ajeet18@gmail.com

How to cite this paper: Singh, G., Tiwary, R., Kumar, R., Gattani, A., & Kumar, A. (2021). Surgical management of foreign body intestinal obstruction in a cocker spaniel dog. *International Journal of Livestock Research*, 11(2), 194-198. http://dx.doi.org/10.5455/ijlr.20200919095905

Received : Aug 06, 2020
Accepted : Jan 17, 2021
Published : Feb 28, 2021

Abstract

A nine-year-old, male cocker-spaniel dog was presented with the history of anorexia, vomiting, dullness, behavioural changes and not passing faeces since last four days. Haematological examination showed normal haemogram with neutrophilic leucocytosis. Biochemically, an altered plasma sodium, chloride, lactate, lactate dehydrogenase and alkaline phosphatase concentration were observed. The radiographic examination of abdomen in lateral and ventro-dorsal positions revealed a round radiopaque opacity of size 1.9X1.3 cm in the region of small intestines on the left side. Aseptic laparotomy was done to remove the foreign body. The dog recovered without any post-operative complication.

Keywords: Biochemical, Dog, Electrolyte, Hematology, Intestinal Obstruction

Introduction

Intestinal obstruction in dog due to lodgement of foreign body, neoplasia, dilatation, volvulus, intussusception and polyps are common (Raghunath *et al.*, 2016). The obstructive foreign objects in gastrointestinal tract may lead to fatal emergencies due to the loss of fluid and electrolytes in extracellular and intracellular compartment of the body. Prompt presentation, diagnosis and early surgical intervention improve the outcome of gastrointestinal obstruction (Kamalakar *et al.*, 2019). This report describes the successful surgical management of complete intestinal obstruction with a foreign body (stone) in a Cocker Spaniel dog.

Case History and Observations

A nine-year-old, male cocker-spaniel dog weighing 10 kgs was presented with a history of anorexia, vomiting, dullness, behavioural changes and not passing faeces since last four days. On physical examination, the animal was dehydrated with congested mucous membrane and slight tachycardia. Haematological examination showed normal haemogram with neutrophilic leukocytosis. Blood biochemical profile revealed low plasma sodium and chloride concentration, however, the lactate, lactate dehydrogenase (LDH) and alkaline phosphatase (ALP) levels were elevated. The total protein and albumin level were within normal limits. Symptomatic medicinal treatment was already given in field but the dog was not responding to it. The radiographs (lateral and ventrodorsal view) of the abdomen showed a radiopaque opacity of 1.9 x 1.3 cm in the region of small intestine on the left side (Fig.1a, b). Surgical intervention was advised to the owner to relieve obstruction.

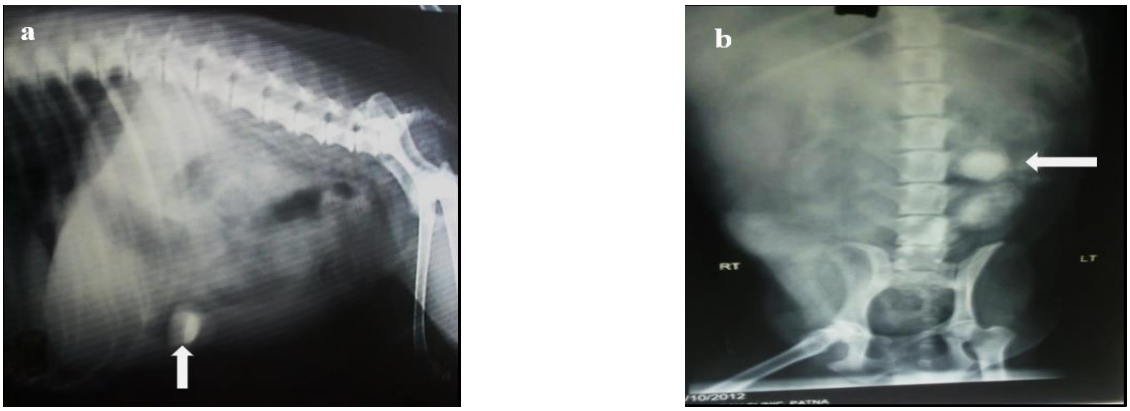

Figure 1: Radiographs of the abdomen showing (a) a radiopaque opacity caudal to liver margins (white arrow) (lateral view) (b) a radiopaque foreign body on left side (white arrow) at the level of 5th lumbar vertebrae.

Treatment

The animal was premedicated with inj. atropine sulphate @0.04mg/ kg body wt. Subcutaneously (Tropine, Neolabs, Mumbai) and inj. pentazocine lactate@ 1mg/kg b.wt. I/V (Fortwin, Ranbaxy Lab. Ltd, Gurgaon). General anaesthesia was induced with a combination of inj. diazepam @ 0.25 mg/kg b.wt. (Calmpose, Ranbaxy Lab. Ltd, Gurgaon) and inj. ketamine @5 mg/kg body weight I/V and was further maintained with inj. ketamine (Ketmin, Themis medicare, Mumbai) (Yohannes et al, 2018). Inj. normal saline (0.9%) (NS, Albert David Ltd., Kolkata) solution was administered intravenously throughout the operative period till recovery from anaesthesia. Preoperatively, inj. ceftriaxone-tazobactam @ 25mg/kg b.wt was given I/V (Intacef-TazoPET, Neovet, Intas Pharmaceuticals Ltd., Ahmedabad). The animal was prepared for aseptic surgery and exploratory laparotomy through a ventral midline incision was performed. The intestinal loop with hard object was exteriorized with the help of fingers and the abdomen was packed with sterilized surgical drapes. The site was lesion was identified in the jejunum (Fig. 2).

A longitudinal incision was made on the antimesenteric border immediately distal to the foreign body and a solid stone measuring 2.0×1.5 cm in size was removed from the site of obstruction. The enterotomy wound was closed with polyglactin 910 (vicryl 3-0, Ethicon, Johnson & Johnson medical Ltd., Mumbai) using cushing suture pattern. The site was flushed with normal saline solution, few drops of haemocoagulase (botroclot, Juggat Pharma, Bangalore) were poured along the suture line and the intestine was placed back inside the abdominal cavity.

Figure 2: Foreign body firmly lodged in the jejunum with ischemia

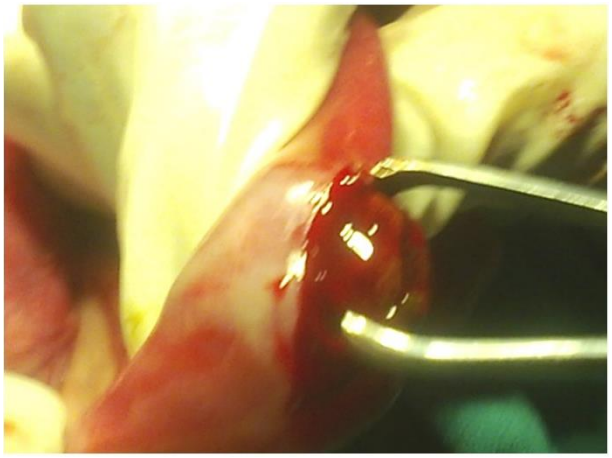

Figure 3: Site of enterotomy and foreign body stone removing form the site of obstruction

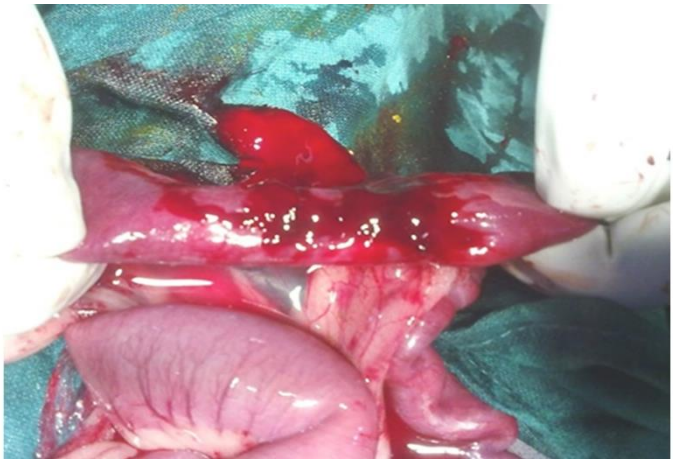

Figure 4: Enterotomy site closed with single layer cushing suture pattern and formation of blood clot after application of botroclot

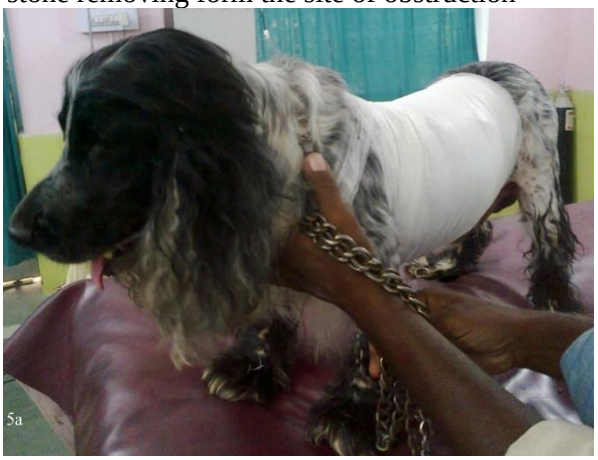

Figure 5a: Animal on seventh post-operative days

Figure 5b: Two months after recovery

The linea alba was closed with vicryl 1-0 using simple interrupted pattern. Post-operatively injection ceftriaxone-tazobactum @ 25 mg/ kg b.wt., inj. ondansetron @0.5 mg/ kg. b.wt. (Inj. Ondem, Alkem Laboratories Ltd., Mumbai), inj. drotaverine @ 1 mg/kg b.wt. (Inj. Drovet, Taurus Lab Pvt. Ltd., Ahmedabad), inj. ranitidine @1 mg/kg. b.wt. (Aciloc, Cadila Pharmaceuticals, Ahmedabad), inj. Dextrose saline 5% @ 50 ml/kg b. wt. (5% Dextros with normal saline, Albert David Ltd., Kolkata), inj. Ringer Lactate @ 20ml/kg b.wt. (RL, Albert David Ltd., Kolkata) and amino acids drips @ 2 ml/ kg b.wt. (Alamin-SN, Albert David Ltd., Kolkata) were given BID daily through intravenous route for five days and inj. Meloxicam @0.2 mg/kg b. wt. (Inj. Melonex, Neovet, Intas Pharmaceuticals Ltd., Ahmedabad) intramuscularly once daily for three days. Oral feeding was withheld for five post-operative days, followed by liquid diet. The dog passed faeces on 7th post-operative day. Wound dressing was

done on alternate days with povidone iodine (Betadine, Win-Medicare, New Delhi) and skin sutures were removed on eighth post-operative day. The recovered uneventfully with restoration of normal feeding habits, defecation and disappearance of abdominal pain.

Table 1: Preoperative haematological and blood biochemical parameters

Parameters	Reference Range	Values
Hemoglobin (mmol/L)	7.4-11.2	9.6
PCV (%)	37-55	40
TLC ($X10^3/\mu L$)	6-17	22.8
Neutrophil count (%)	60-70	84
Lymphocyte Count (%)	12-30	13
Platelet Count ($x10^5/\mu L$)	02-09	6.8
Total Protein (g/L)	55-75	60
Sodium (mEq/L)	140-154	134
Potassium (mEq/L)	3.8-5.6	4.2
Chloride (mEq/L)	102-117	100
LDH (U/L)	24-219	426
Lactate (mmol/L)	0-2.5	4.2
AKP (U/L)	10.6-101	262

Discussion

Large objects like stones, plastic, rubber objects, food wrapping, marbles etc. that pass through the pylorus, usually obstruct in the jejunum section of small intestine (Hayes, 2009). Clinical signs associated with small intestinal obstruction vary with the location, duration, and severity of the obstruction. Vomiting, anorexia, depression, and abdominal tenderness are common signs of obstruction. Vomiting may be frequent and even projectile with a complete proximal obstruction or more sporadic and less profuse with a distal or partial obstruction which might not respond to antiemetics (Jackson and Cruz, 2018). Chronic vomiting and diarrhoea result in severe electrolyte and acid- base imbalance. At the site of obstruction, due to less blood perfusion, local hypoxia may occur which results in elevated blood lactate. The plain radiography accurately diagnoses simple intraluminal obstruction of a foreign body with good radio-opacity (Jackson and Cruz, 2018). Complete intestinal obstruction, not responding to medicinal treatment is a medicinal and surgical emergency (Devi *et al.,* 2020). The most common surgical procedures to remove foreign bodies from the small intestinal in dogs and cats include enterotomy or resection and anastomosis. The enterotomy site is distal to the foreign body so that the suture line placed in healthy tissue which has not undergone pressure necrosis or distention from the presence of the foreign body (Smeak *et al.*, 2018). The hemocoagulase (botroclot) applied at the enterotomy site was to shorten the bleeding and coagulation time and to accelerate the haemostasis, helps in formation of fibrin clots that might help in the healing of the wound (Shenoy, *et al.,* 2015). The animals with serum albumin concentration ≤25g/L are at increased risk of developing leakage following intestinal anastomosis however; its normal concentration supports better healing of enterotomy site (Ralphs *et al.,* 2003).

Conflict of Interests

There is no conflict of interest.

Publisher Disclaimer

IJLR remains neutral concerning jurisdictional claims in published institutional affiliation.

References

1. Devi, T. R., Das, D., Kayina, A., Konwar, B., Saikia, B., Bayan, H., ... and Kayina, A. K. (2020). Surgical

management of intestinal foreign body obstruction in a dog. *Journal of Entomology and Zoology Studies*, 8(4): 2317-2320

2. Yohannes, G., Negash, G., & Fantay, H. (2018). Comparison the effects of ketamine alone and ketamine-diazepam combination in dogs of local breed in Mekelle, Ethiopia. *MOJ Surg*, *6*(4), 119-124.
3. Hayes, G. (2009). Gastrointestinal foreign bodies in dogs and cats: a retrospective study of 208 cases. *Journal of Small Animal Practice*, 50(11), 576-583.
4. Jackson, P., and Cruz, M. V. (2018). Intestinal obstruction: evaluation and management. *American Family Physician*, 98(6), 362-367.
5. Kamalakar, G., Lamani, T. S. D., Suresh, L., Saigunaranjan, K., and Nagaraja, B. N. (2019). Surgical Management of Intestinal Obstruction due to Pebbles in a Labrador Dog. *Journal of Livestock Science*, 10, 19-21.
6. Raghunath, M., Sagar, P. V., Sailaja, B., and Kumar, P. R. (2016). Surgical Correction of Intestinal Obstruction in a German Shepherd Dog. *Scholars Journal of Agriculture and Veterinary Sciences*, 3(3), 187-189.
7. Ralphs, S. C., Jessen, C. R. and Lipowitz, A. J. (2003). Risk factors for leakage following intestinal anastomosis in dogs and cats: 115 cases (1991–2000). *Journal of the American Veterinary Medical Association*, 223(1), 73-77.
8. Smeak, D. D., Turner, H., and Hoon-Hanks, L. (2018). Intramural abscess causing obstruction at a previous jejunal enterotomy site in a dog. *Journal of the American Animal Hospital Association*, 54(5).
9. Shenoy, V., Baliga, M., Mahajan, S., & Ramesh, K. V. (2015). The effects of topical hemocoagulase solution on the healing process of post-extraction wounds: a split mouth design. Journal of maxillofacial and oral surgery, 14(3), 586-593.

****