Successful surgical removal of foreign body from stomach of a puppy: A case report

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Abstract

This communication represents a case of successful removal of foreign body from the stomach of a 3 to 4 months old Golden Retriever male puppy by laparo-gastrotomy, presented to the Veterinary Clinical Complex, with a definite history of eating a makeup sponge 2 days before the day of presentation. The animal was subjected to surgical removal after visualization of the object under both plain and contrast abdominal radiography. Careful routine post-operative fluid therapy and medicinal management could bring uneventful recovery and the puppy started taking normal food without any post-operative complications within one month.

Key words: Contrast radiography, Foreign body, Laparo-gastrotomy, Puppy, Stomach

Playful nature of young dogs or puppies often leads to the incidence of foreign body ingestion (Kumar *et al.*, 2000; Capak *et al.*, 2001; Papazoglou *et al.*, 2003). Obstruction of gastro-intestinal tract by foreign bodies like rubber objects, metallic objects, plastic objects, stones, etc. have already been reported by many authors worldwide (Koike *et al.*, 1981; Raghunath *et al.*, 2016; Mahesh *et al.*, 2019). Foreign body passing through esophagus and stomach may lead to serious life-threatening complications due to acid-base and electrolyte imbalances from severe fluid loss or hypovolemia, and toxemia (Papazoglou *et al.*, 2003; Fossum, 2012), however, foreign body lodging in gastric fundus without obstructing the pylorus may not show any clinical sign of foreign body syndrome (Halder *et al.*, 2018; Bharathidasan *et al.*, 2019). Laparo-gastrotomy is the only option to remove a foreign body from the stomach when endoscopy is not available or endoscopic removal of foreign body is not possible. This communication describes a successful surgical removal of makeup sponge by laparo-gastrotomy from the stomach of a male puppy.

A 3 to 4 months old male dog weighing 5.1 kg was presented to the Veterinary Clinical Complex with a confirmed history of eating a makeup sponge 2 days ago from the day of presentation. The owner reported that the puppy did not show any other gastrointestinal tract-related symptoms except a mild decrease in appetite. Anamnesis also revealed that despite normal defecation the sponge was not found in faeces.

Clinical evaluation revealed a normal study with mild dehydration. A doughy mass could also be felt on the abdominal ballottement. Further, the puppy was subjected to both plain and contrast abdominal lateral radiography which confirmed the presence of the sponge in the stomach (Fig. 1). Laparo-gastrotomy was decided as purgative administration could not remove the sponge.

Ringer's lactate 50 mL intravenously (IV) was administered twice daily for the previous two days of surgery. Ceftriaxone @ 25 mg/kg body weight (BW) and pantoprazole @ 1 mg/kg BW as an antibiotic umbrella and a safeguard of gastrointestinal tract mucosa respectively were also given IV on the previous

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day of surgery. The puppy was fasted for 12 hours. Total intra venous anaesthesia (TIVA) protocol was followed for anaesthetic management (Sharma *et al.*, 2021). As pre-anaesthetic, glycopyrolate @ 0.01 mg/kg BW IV and diazepam @ 0.5 mg/kg BW IV were administered. General anaesthesia was induced by propofol @ 4 mg/kg BW IV following till effect.

Endotracheal intubation was also done to maintain a patent airway. Anaesthetic maintenance was done by 1:1 ratio mixture of ketamine and diazepam through IV route. Following aseptic surgical preparation of the entire ventral abdominal area, a cranial mid ventral incision through the skin, subcutaneous tissue and linea-alba was given. After exteriorizing the stomach, the laparotomy wound was packed by sterile draper dipped in normal saline and two stay sutures were applied (Fig. 2). The sponge was removed via a linear incision on the ante mesenteric end avoiding major vessels (Fig. 2a). The gastrotomy wound was closed by placing simple continuous suture using 4-0 chromic catgut between the sub-mucosa and muscularis layer (Slatter, 2003; Iqbal *et al.*, 2020) followed by a layer of Cushing suture using 3-0 catgut over the serosa. The laparotomy wound was closed by 1-0 polyglactin 910 and no. 1 black braided silk suture material on linea-alba and skin respectively (Fig. 2b). The puppy was maintained on IV fluids and medicinal therapy for another 5 days. Ringer's lactate (RL)- 50 mL and dextrose normal saline (DNS)- 50 mL in morning and evening respectively were infused intravenously for these 5 days along with other medicinal support like ceftriaxone @ 25 mg/kg BW IV, pheniramine maleate @ 0.5 mg/kg BW IM from 5th post-operative day for another 5 days, pantoprazole @ 1 mg/kg BW IV, tramadol @ 2 mg/kg BW IV and vitamin B-complex @ 1 mL/day IV for 7 days. The surgical wound was dressed regularly by povidone iodine liquid and ointment from 3rd post-operative day onwards till suture removal. Sutures were removed on the 10th day post-surgery and the dry dressing was also continued

for another 3-4 days. From the 6th day onward rice gruel, vegetable soup, oats were offered for another 2-3 days followed by normal solid food as a progressive development in appetite was noticed. Without any post-operative complications, the puppy recovered within one month.

Progressive development in appetite and gradual return to normal health could finally bring uneventful recovery within one month.

Gluttonous or indiscriminate feeding habits with curious and playful nature of young puppy generally leads to ingestion of non-dietary item as seen in this case (Papazoglou *et al.*, 2003; Raghunath *et al.*, 2016; Bharathidasan *et al.*, 2019). However, obstruction of GIT as well as the pattern of clinical sign depends on the location, degree and duration of obstruction as well as size and nature of foreign bodies (Sajeni *et al.*, 2017; Halder *et al.*, 2018; Bharathidasan *et al.*, 2019); again, if the foreign body lodges in the fundus without blocking pylorus typical signs of GIT obstruction or foreign body syndrome may not be seen (Halder *et al.*, 2018; Bharathidasan *et al.*, 2019). Absence of clinical sign in the present case was probably due to the same reason mentioned above. Both plain survey X-ray and a confirmatory contrast X-ray were done to verify the presence and site of the sponge respectively in this case. The corroborative observation was also made by Papazoglou *et al.* (2003) and Bharathidasan *et al.* (2019). As reported by other authors foreign body removal by laparo-gastrotomy is often indicated and has a good prognosis (Bharathidasan *et al.*, 2019). Following GIT surgery post-operative endurance is always challenging for the veterinarian as the animal needs to keep in continuous parental feeding or fluid therapy for the next few days. To maintain electrolyte balance, improving tissue perfusion and body homeostasis post-operative fluid therapy is usually aimed for the first few days with Ringer's lactate and dextrose normal saline in the present case. Similar approaches in case of GIT surgery were also made by Papazoglou *et al.* (2003), Patil *et al.* (2010), Raghunath *et al.* (2016) and Nandini *et al.*

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Fig. 1. Images representing radiographic diagnoses (red arrows showing the outline of sponge)
a) Plain radiography, b) & c) Barrium contrast radiography

Fig. 2. Images representing peri-operative procedure, a) Removal of sponge from via linear gastric incision and stay suture, b) Cross Mattress skin suture and the recovered sponge

(2017). As reported by Patil *et al.* (2010) and Halder *et al.* (2018) prognosis of GIT surgery depends upon the duration of presentation, site of obstruction and severity of clinical signs. In this case too timely presentation, absence of blockage and absence of clinical signs probably resulted in positive.

The authors of this communication would like to draw a conclusion from the

aforementioned report that timely presentation, aseptic surgical intervention along with careful routine post operative fluid and medicinal therapy could bring uneventful recovery following a laparo-gastrostomy surgery in canine.

Conflict of interest: Authors have no conflict of interest in this study.

REFERENCES

- Bharathidasan M, Kokila S, Vishnugurubaran D, Ninu AR, Dharmaceelan S *et al.*, 2019. Surgical retrieval of gastric-shuttlecock in Golden Retriever dog. *Int J Agri Sci*, 11(1): 7713-7714
- Capak D, Brkić A, Harapin I, Matičić D and Radišić B, 2001. Treatment of the foreign body induced occlusive ileus in dogs. *Vet Arhiv*, 71(6): 345-359
- Fossum TW, 2012. *Small Animal Surgery*. Elsevier Health Sciences, 4th edn., St. Louis, pp 516-528
- Halder S, Mandal D and Sarkar P, 2018. Laparo-gastrostomy for removal of gastric metallic bolt in spitz dog. *Intas Polivet*, 20(1): 135-136
- Iqbal N, Hussain N, Atif M, Aslam S, Jawad H *et al.*, 2020. Comparative efficacy of sutures and suture less techniques for gastrotomy incision closure in dog. *Adv Anim Vet Sci*, 8(12): 1294-1300, doi: 10.17582/journal.aavs/2020/8.12.1294.1300
- Koike T, Otomo K, Kudo T and Sakai T, 1981. Clinical cases of intestinal obstruction with foreign bodies and intussusception in dogs. *Jpn J Vet Res*, 29(1-2): 8-15, doi: 10.14943/jjvr.29.1-2.8
- Kumar DD, Ameerjan K and David WA, 2000. Gastro intestinal tract obstruction in dogs. *Ind J Vet Sur*, 2(1): 43-44
- Mahesh V, Kamalakar G and Nagaraja BN, 2019. Enterotomy in a Labrador Retriever – A case report. *Int J Livest Res*, 9(12): 240-243, doi: 10.5455/ijlr.20190920035701
- Nandini MK, Vishwakarma P and Mahesh V, 2017. Gastrointestinal obstruction due to linear foreign body in a cat: A case report. *Adv Anim Vet Sci*, 5(10): 416-418, doi: 10.17582/journal.aavs/2017/5.10.416.418
- Papazoglou LG, Patsikas MN and Rallis T, 2003. November intestinal foreign bodies in dogs and cats. *Compend*, 25(11): 830-844
- Patil DB, Parikh PV, Jhala SK, Tiwari DK and Dar MUD, 2010. Gastric foreign bodies in dogs - A report of five cases. *Intas Polivet*, 11(2): 297-298
- Raghunath M, Sagar PV, Sailaja B and Kumar PR, 2016. Surgical correction of intestinal obstruction in a German Shepherd dog. *Scholars J Agri Vet Sci*, 3(3): 187-189
- Sajeni S, Reisinger W, Mushonga B, Kandiwa E and Habarugira G, 2017. Foreign Body gastrotomy in an adult captive cheetah, *Acinonyx jubatus*. *Alex J Vet Sci*, 52(1): 148-152, doi: 10.5455/ajvs.231231
- Sharma M, Baishya MP, Sampurna NY, Sarma BK, Devi R *et al.*, 2021. Successful surgical correction of intestinal foreign body obstruction in canine: A case report. *Haryana Vet*, 60(SI): 94-96
- Slatter D, 2003. *Textbook of Small Animal Surgery*, Saunders, Elsevier Health Sciences, 3rd edn., Vol.1, Philadelphia, PA 19106, USA, pp 597