

## Foreign Body in a Bitch - Removal with Gastrotomy and Enterotomy

Sarah Borges Resende<sup>1</sup>, Pâmela Rodrigues da Silva<sup>2</sup>, Lucas Mota Sousa<sup>2</sup> & Diego Carvalho Viana<sup>1,3</sup>

### ABSTRACT

**Background:** Morphophysiology makes it possible to understand the entire organism of an animal, enabling the identification of abnormalities and alterations. In view of this, it is extremely important to understand the gastrointestinal system and the nutrition of companion animals, particularly dogs, as they tend to ingest inedible objects, which can result in changes in behavior and nutrition. The foreign body refers to objects that are resistant to digestion by hydrochloric acids, such as thread, stones, plastic, and bones. When animals are affected, they may show several symptoms such as vomiting, gastric distention, and intestinal obstruction. In addition, depending on the region and severity, surgical intervention may be required to remove the foreign body. The aim of this study was to describe a case of gastrointestinal obstruction in a bitch, as well as to address the established drug therapy and describe the surgical technique.

**Case:** A 1-year-and-1-month-old Shih-Tzu bitch, weighing 5.6 kg, was initially treated at a veterinary clinic in Imperatriz, Maranhão. The bitch presented with lethargy and intermittent vomiting. On physical examination, ocular secretion and pain on abdominal palpation were observed, but the other parameters were within the normal range. Several tests were performed. In addition, the complete blood count showed alteration, indicating leukocytosis due to neutrophilia, together with monocytosis and eosinophilia. However, the biochemistry results were within normal limits, and the 4dx rapid test did not indicate any parasitic disease. Abdominal ultrasonography was decisive in confirming the diagnosis of a foreign body. The patient was referred to another veterinary clinic to undergo gastrotomy and enterotomy surgeries for the removal of foreign bodies. Moments before the surgery, due to the animal's worsening condition with emesis, the surgery had to be initially interrupted. Afterwards, it was sent to the surgical center, where it underwent gastrotomy and enterotomy procedures to remove 3 round structures. In the postoperative period, he was followed up to monitor the parameters, with cases of hypoglycemia that were effectively managed through appropriate interventions. In the following days until the day of discharge, he showed significant improvement, returning 10 days later to the clinic to remove the stitches.

**Discussion:** The habit of consuming foreign objects is common among small animals but tends to affect younger dogs, like the patient in this case. According to the literature, foreign body obstruction can generate different clinical signs according to the affected region. In this case, the dog only presented pain on palpation in the abdomen region, along with gastrointestinal distress. The treatment indicated for this case was surgical intervention, specifically gastrotomy and enterotomy procedures. The ultrasound examination played a crucial role in confirming the diagnosis by identifying abnormal structures present in the stomach and small intestine. Complementary tests were performed to complete the physical examination. During hospitalization to treat the clinical conditions of emesis, the drug therapy of choice was Omeprazole and Maropitant Citrate, and Buscofen (dipyrone and scopolamine). The animal showed improvement during the postoperative period and the monitoring of the clinical parameters allowed for better control of its condition.

**Keywords:** obstruction, gastrointestinal, surgery.

## INTRODUCTION

Animal morphophysiology is crucial for understanding organ systems and identifying abnormalities [5,9]. Understanding the digestive system is essential for food digestion, nutrient absorption, and animal health [3,10]. Recent changes in pet nutrition have led to behavioral shifts [7]. Dogs are less selective eaters than cats and may ingest foreign objects, causing gastric foreign bodies that hinder digestion [6]. These objects include bones, plastics, and threads, leading to symptoms like vomiting, gastric distension, obstruction, weight loss, diarrhea, anorexia, and depression [6,8].

In the small intestine, symptoms can vary and lack specificity [8]. A case study involved a 3-year-old bitch Pit Bull who ingested a plastic bag and underwent gastrotomy and enterotomy surgeries, surviving the ordeal [2]. However, another case reported the death of a 5-year-old male Mixed Breed dog due to an intestinal obstruction caused by a pequi seed (*Caryocar braziliense*) [1].

This report details the clinical case of a 1-year and 29-day-old adult Shih-Tzu bitch in Imperatriz, Maranhão, Brazil, diagnosed with gastrointestinal obstruction due to a foreign body. The bitch initially presented with vomiting, and the study focuses on describing the surgical procedures of gastrotomy and enterotomy as part of the established therapy.

## CASE

A 1-year-and-1-month-old Shih-Tzu bitch, weighing 5.6 kg, was initially seen at a private veterinary clinic in the city of Imperatriz, Maranhão, Brazil, on January 28, 2023, in the at 2 pm. According to the owner's report, the animal appeared sad and had been experiencing frequent vomiting for 4 days, including the expulsion of food and an unknown substance. In view of this, the caretaker administered antidotes and received instructions from third parties to administer antibiotics, possibly due to suspected intoxication. However, the owner reported that the animal has the habit of eating insects and garbage.

Considering this, he recently ingested garbage, and on the day of the consultation, he experienced 6 episodes of constant vomiting. However, he had an appetite but would regurgitate what he consumed. Furthermore, it was described that the dog vomited food and mucus, had pasty stool, and yellowish urine.

The owner stated that the animal was only fed with food and mentioned that antiparasitics, deworming treatment, and vaccines (including anti-rabies and multiple vaccines) were overdue. The animal had access to the street and had with other animals. During the physical examination, the animal had a heart rate (HR) of 72 bpm, respiratory rate (RR) of 48 brpm, rectal temperature (TR) of 37.3°C, normal colored mucous membranes, capillary filling time of 2 s, 2-s skin tenting (TC), non-palpable mandibular lymph nodes, body score was within normal limits, and showed slight dehydration. Furthermore, it was found that the patient had ocular discharge and exhibited abdominal tenderness upon palpation.

After completing the physical examinations, venous access was established in a cephalic vein using a 0.9% saline solution to ensure proper hydration of the animal and facilitate the administration of necessary intravenous medication throughout its hospitalization. The initial choice of medications included multivitamins Polyvitamin<sup>1</sup> [Bionew<sup>®</sup>], Ascorbic Acid<sup>2</sup> [Vitasantisa C<sup>®</sup>], Maropitant Citrate<sup>3</sup> [Cerenia<sup>®</sup>] and Omeprazol<sup>4</sup> [Oprazol<sup>®</sup>].

Base on the clinical symptoms presented, various complementary exams were requested, including complete blood count, hematozoa research, biochemical tests, ultrasound, and the 4Dx rapid test. To perform the hematological examination, the complete blood count (CBC) was conducted manually while the biochemical analysis was performed using the biochemical analyzer<sup>5</sup> [MaxBio300<sup>®</sup>]. The ultrasound examination was performed using a SonoScape device<sup>6</sup>. During the ultrasound examination, an obstruction caused by a foreign body was detected in the animal's stomach, with possibly involvement in the intestine. After confirming the presence of the foreign body, the bitch was referred for the surgical procedure of gastrotomy and enterotomy to remove it.

Prior to performing the surgical technique for the removal of foreign structures, additional tests were necessary for the clinical procedure, including lactate and electrolyte analysis. These tests were conducted using the Biochemical Analyzer Catalyst One<sup>5</sup>. The erythrogram showed slight alterations, while the plateletogram remained within the reference values. However, the leukogram indicated leukocytosis (17,500 mm<sup>3</sup>; 6,000 - 17,000 mm<sup>3</sup>) due to neutrophilia (6,825 mm<sup>3</sup>; 0 - 540 mm<sup>3</sup>). Eosinophilia (0 mm<sup>3</sup>; 100

- 1,250 mm<sup>3</sup>) and monocytosis (2,450 mm<sup>3</sup>; 150 - 1,350 mm<sup>3</sup>) were observed, along with the presence of ++ reactive monocyte and toxic neutrophils.

The erythrocyte count in the erythrogram showed values above the ref.: (9.09 million/ $\mu$ L; ref.: 5.5-8.5 million/ $\mu$ L), with a slight increase in hemoglobin (18.18 g/dL; ref.: 12-18 g/dL), and the Hematocrit level exceeding the optimal range (60%; ref.: 37%-55%), indicating polycythemia (809.010 million/mm<sup>3</sup>; ref.: 200-700 million/mm<sup>3</sup>), accompanied by mild hyperproteinemia (8.4; ref.: 6.0-8.0).

All the biochemical tests showed values within the normal range for the canine species. In the 4Dx test<sup>7</sup>, the animal presented negative results for *Ehrlichia canis*, *E. ewingii*, *Anaplasma platys*, *A. phagocytophilum*, *Borrelia burgdorferi*, and *Dirofilaria immitis*.

On 01/28/2023, the patient had to be hospitalized in order to be observed and treat for the clinical conditions presented. In view of this, venous access occurred in the cephalic vein and the serum of choice was ringer lactate, since. In addition, the medications of choice were Polyvitamin<sup>1</sup> [Bionew<sup>®</sup> - 0.2-0.5 mL/kg IV, once daily for 3 days]; Ascorbic Acid<sup>2</sup> [Vitasantisa C<sup>®</sup> - 22-40 mg/kg, once daily for 3 days]; Maropitant Citrate<sup>3</sup> [Cerenia<sup>®</sup> - 1 mL/10kg IV, once daily for 3 days] and Omeprazole<sup>4</sup> [Oprazol<sup>®</sup> - 0.5-1 mL/kg IV, once daily for 3 days]. During the night, the patient was stable, active, and without emesis. After feeding, the presence of urine, feces, and water intake was not observed.

On 01/29/23, he was stable, without changes in clinical parameters, without vomiting, but with anorexia. In this situation, a sachet of food was offered during the morning to observe if the dog would show any interest in eating. Throughout the day, the patient's parameters remained within the ideal range. However, abdominal pain was still present upon palpation, requiring the administration of Dipyrone 50 g + Hyoscine 0.4 g<sup>8</sup> [Buscofin<sup>®</sup> 1-2.5 mL/animal IV, once daily for only 1 day] to alleviate the discomfort. On the same day (01/29/2023), it was advised to administer Supplement<sup>1</sup> [Nutralife<sup>®</sup> Intensiv 3 scoops/animal PO, once daily]. After experiencing 2 episodes of emesis during the night, which had a transparent appearance, the dog was taken for a walk in order to simulate urination and defecation, but no elimination occurred.

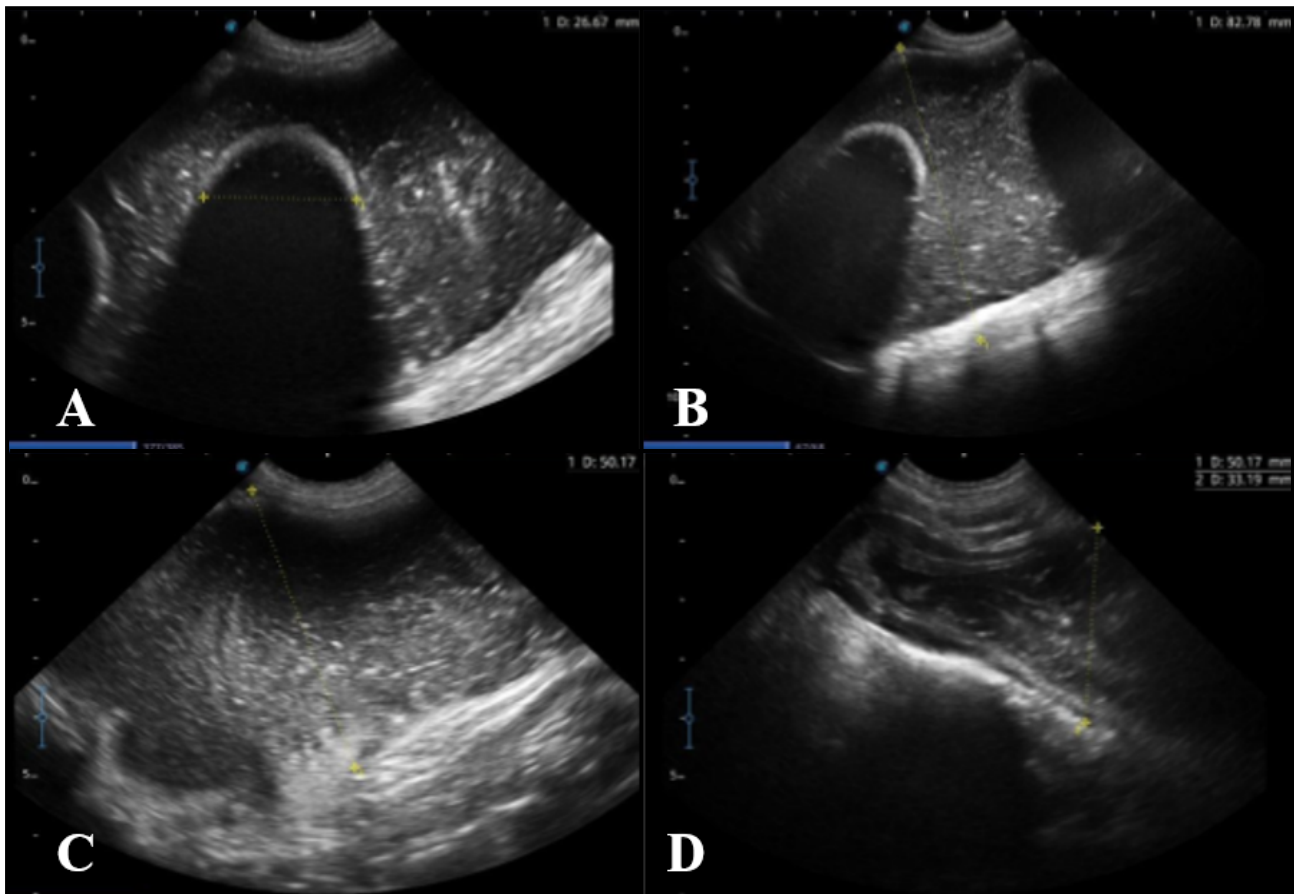
On January 30, 2023, the dog was not eating voluntarily and was experiencing regurgitation of a clear liquid. As a treatment approach, an appetite

stimulant, Cyproheptadine Hydrochloride + Combinations<sup>9</sup> [Apevetin BC<sup>®</sup>], was administered along with force-feeding using nutralife. The recommended dosage was Cyproheptadine Hydrochloride + Combinations<sup>9</sup> [Apevetin BC<sup>®</sup> - 0.1 mL/kg, PO, twice daily, for 3 days]. The dog exhibited signs of depression and had a lack of appetite. However, all other vital parameters were normal, and there were no instances of vomiting or urination. During the night, the dog experienced regurgitation, which raised new clinical suspicions including megaesophagus, the presence of a foreign body, and abdominal pain possibly related to pyometra. After confirmation of a foreign body, the classification was changed from less urgent to urgent. In this case, it was indicated that the animal underwent surgery due to the presence of strange structures in the stomach and intestine, with a distended stomach.

According to the ultrasound report, the stomach showed significant distension, thickened wall, with the presence of anechoic and heterogeneous content, with the presence of 2 rounded and echoic (dense) structures with a diameter of 2.6 cm. Intestinal loops with the presence of anechoic and heterogeneous content (Figure 1).

On 01/31/2023, during the night, the animal was stable, without decompensation, forced feeding occurred. During the day, she was apathetic, with hypothermia (35.9°C), with the presence of liquid stools, urine, and vomit, PCT, and CT within 3 s. However, the other vital parameters were normal. During the night, the animal was transferred to another clinic to be able to perform the gastrotomy and enterotomy surgery. After referral, the dog was apathetic, glucose was 120 mg/dL, rectal temperature 38.0°C, heart rate 96 BPM (mild arrhythmia), respiratory rate 60 MPM, normal colored mucous membranes, capillary refill time of 1 s. In addition, other drug therapeutic approaches were adhered to, Metronidazole<sup>10</sup> [Metronack<sup>®</sup> - 15 mg/kg, IV] and Ceftriaxone<sup>9</sup> [Ceftriax<sup>®</sup> - 25-50 mg/kg, IV], as well as Potassium with Potassium Chloride Infusion<sup>11</sup> [Potassium Chloride<sup>®</sup> - 19.1% 0.5 mEq/kg/h, IV], Tramadol Hydrochloride<sup>8</sup> [Cronidor<sup>®</sup> - 2 mg/kg, BID for 8 days], Sucralfate<sup>9</sup> [Sucrafilm<sup>®</sup> - 5 mL/animal BID for 5 days].

On 02/01/2023 during the day, he presented oscillations in his state and behavior. After the initial potassium infusion, he became more alert and aware. However, the animal had a slight relapse. Blood collection was performed to repeat the tests. Electrolytes and



**Figure 1.** Ultrasonographic findings in a bitch. A- Foreign body in stomach. B- Distended stomach with two rounded hyperechoic structures. C & D- Intestinal Loops dilated by content. Structures indicated by yellow dashed line.

lactate were required to verify the possibility of going through future anesthetic and surgical procedures. The levels of Na/K (Sodium-Potassium Pump) were within the normal range for dogs. The Na (Sodium) level indicated hyponatremia (112 mmol/L; ref.: 144-160 mmol/L), the K (Potassium) level was within the standard range (2.5 mmol/L; ref.: 3.5-5.8 mmol/L), and Cl (Chloride) showed hypochloremia (69 mmol/L; ref.: 109-122 mmol/L).

However, on the following day, the Na (Sodium) level indicated hyponatremia (129 mmol/L; ref.: 144-160 mmol/L), the K (Potassium) level was within the optimal range (3.5 mmol/L; ref.: 3.5-5.8 mmol/L), and Cl (Chloride) showed hypochloremia (89 mmol/L; ref.: 109-122 mmol/L).

Still on 02/01/2023, the clinical parameters such as heart rate were 144 bpm, respiratory rate was 64 bpm, rectal temperature 36.3°C (hypothermia), pale mucous membranes, with TPC of 2 s. In the afternoon, she presented with emesis and hypoglycemia. To address these symptoms, Ondansetron Hydrochloride<sup>12</sup> [Ondansetron Hydrochloride (Ampoule) 0.5 - 1 mg/kg,

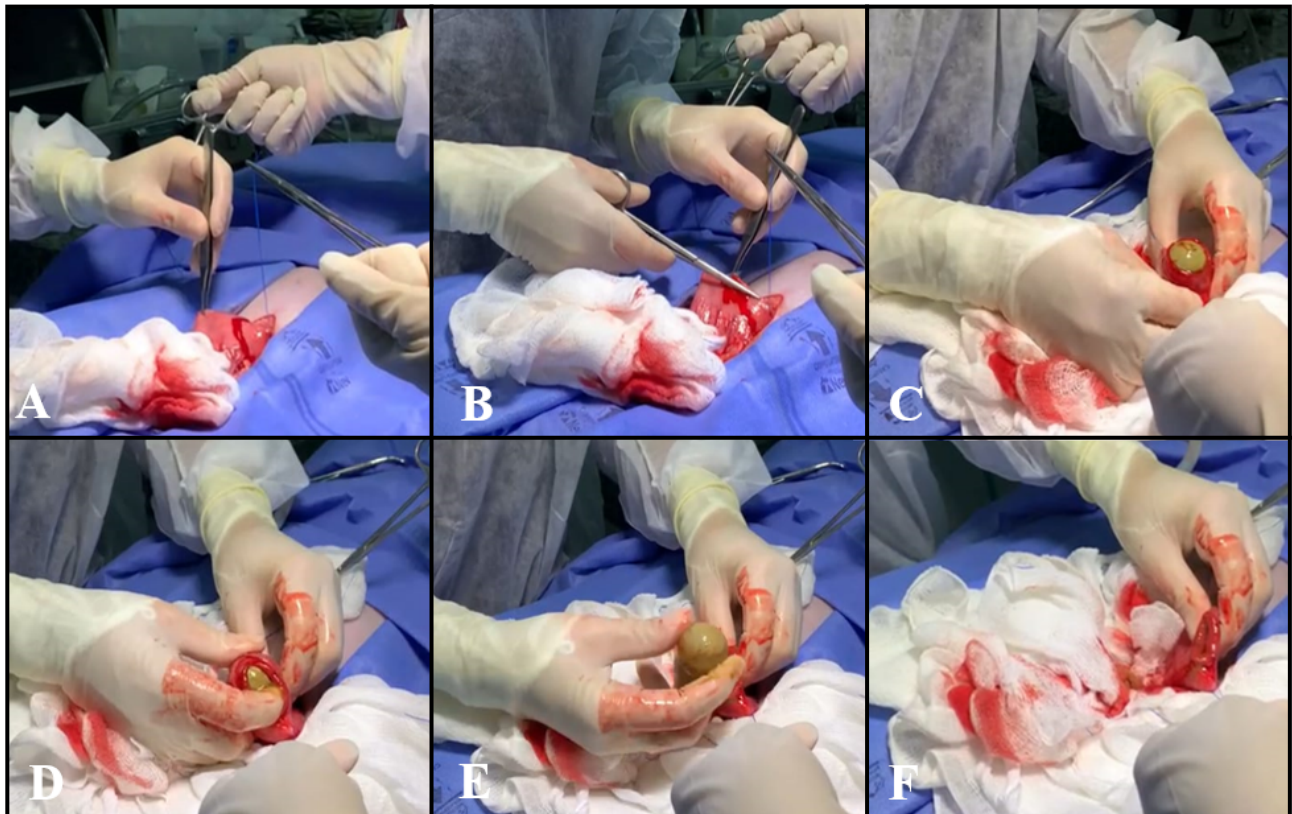
IV]. Additionally, Glucose<sup>13</sup> [50% Glucose (Ampoule) 0.5 - 1 mL, IV] to manage the hypoglycemia. Prior to the moment of surgery, the animal decompensated with vomiting. Therefore, an association was made between Ondansetron Hydrochloride<sup>12</sup> [Ondansetron Hydrochloride (Ampoule) 0.5 mg/kg] and Maropitant Citrate<sup>3</sup> [Cerenia® 1 mL/10 kg, IV] to control cravings and vomiting, and Glucose<sup>13</sup> [50% Glucose (ampoule) 0.5 - 1 mL, IV]. After normalization, it was sent to the surgical center, where the anesthetic procedure and asepsis of the animal began. As part of the anesthetic protocol, the drugs of choice for Pre-anesthetic medication were Dexmedetomidine<sup>3</sup> [Dexdomitor® - 3 ug/kg, IV] and Methadone<sup>14</sup> [Mytedom® - 0.2 mg/kg, IV]. Propofol<sup>14</sup> [Propovan® - 1.000 ug/kg/min, IV] for induction, followed by maintenance with a variable dose between 50 ug/kg/min and 100 ug/kg/min. For infusions, Remifentanyl<sup>14</sup> [Ultiva® - 15 ug/kg/h, IV], Dexmedetomidine<sup>3</sup> [Dexdomitor® - 1 ug/kg/h, IV], Ketamine hydrochloride<sup>15</sup> [Cetamin® - 1 mg/kg/h, IV]. Additionally, an epidural block was performed using Bupivacaine<sup>14</sup> [Neocafina® - 0.2 mL/kg, IV] and

Morphine Sulfate<sup>14</sup> [DI morf<sup>®</sup> - 0.1 mg/kg, IV]. The animal was positioned initially in dorsal recumbency. Subsequently, an abdominal incision was made along the ventral midline extending from the xiphoid process to the pubis. Balfour retractors were utilized to retract the abdominal wall, providing adequate exposure to the gastrointestinal tract. Furthermore, a thorough inspection of all abdominal contents was performed prior to making the incision. The stomach was then isolated from other abdominal components using moistened surgical compresses to minimize the risk of contamination. Stay sutures were placed to facilitate the manipulation of the stomach and prevent leakage of gastric contents. The gastric incision was made in a hypovascular area with minimal vascularization on the ventral surface of the stomach, located between the greater and lesser curvatures. Therefore, an incision was made in the gastric lumen using a scalpel and then enlarged using Metzenbaum scissors. In addition, a suction device was utilized to aspirate the gastric contents and prevent excess leakage, following which the 2 foreign structures were successfully removed. An absorbable poliglecaprone-25 3-0 suture was used in an inverted muscular pattern, applying 2 layers to

suture the stomach. In addition, the serosa, muscular, and submucosal layers were included in the 1<sup>st</sup> layer using the Cushing suture pattern. Then, the Lembert pattern was used to integrate the serosa and muscular layers. Subsequently, the mucosa was closed using a simple continuous suture, from the other layers, to prevent postoperative bleeding (Figure 2).

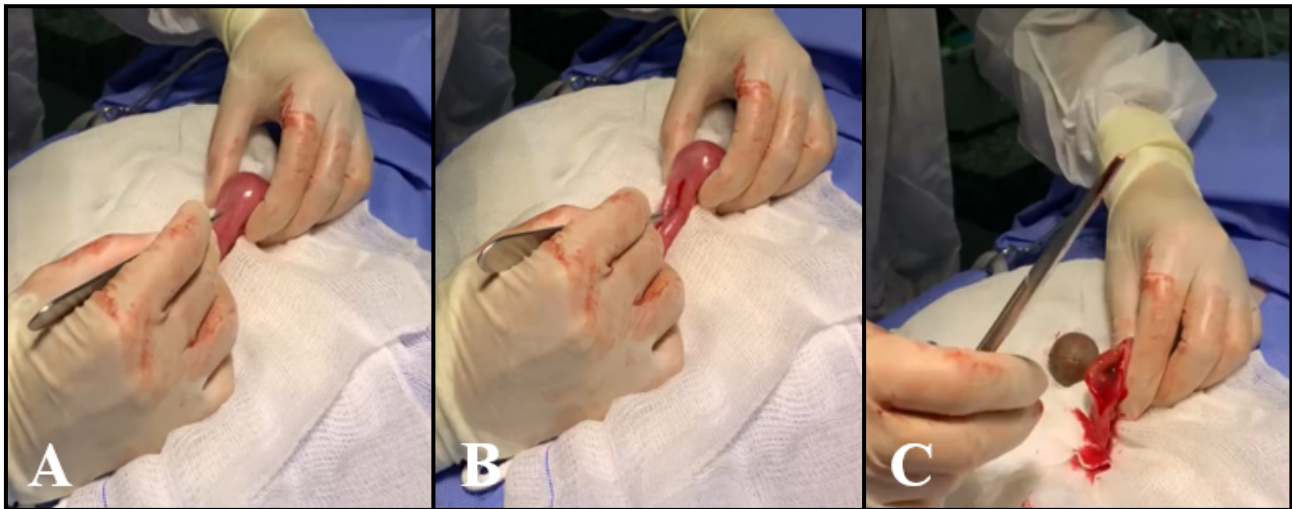
After closing the stomach, the small intestine was carefully isolated and placed alongside surgical compresses. The contents of the intestinal segment that was obstructed were removed from its lumen. To minimize chyme extravasation, the assistant applied pressure on both ends of the isolated intestinal segment using a scissor-like grip with the index and middle fingers, approximately 4 to 6 cm apart. A No. 11 scalpel blade was used to create a full-thickness incision in the antimesenteric region of the intestinal, specifically in the healthy-appearing tissue distal to the foreign body. Careful extension of the incision along the long axis of the intestine was performed using the scalpel as needed to avoid tearing the intestine during the foreign body removal (Figure 3).

After the foreign body was removed, the intestinal incision was closed using poliglecaprone-25 4-0



**Figure 2.** Gastrotomy performed in a bitch for foreign body removal. A & B- Stomach incision moment. C- Removal of the 1<sup>st</sup> structure. D, E & F- Removal of the structure.





**Figure 3.** Enterotomy performed in a bitch for foreign body removal. A & B- Incision made in the small intestine. C- removal of the foreign structure.

suture material. The incision was prepared to align with the level of the inverted mucosa, ensuring that the edge was in the same plane as the serosal edge. The intestinal lumen was aspirated, and the incision was closed longitudinally using simple interrupted sutures. The surgical technique followed the guidelines described in reference [6] from the literature. The abdominal cavity was closed using interrupted sutures, with 4-10 mm of fascia introduced into each suture. The sutures were placed 5-10 mm apart. The sutures were tightened as necessary to bring the edges together, ensuring that the entire thickness of the abdominal wall was included in the sutures. The subcutaneous tissue was closed using a simple continuous pattern with 2-0 poliglecaprone absorbable suture material. For skin closure, a non-absorbable suture with an interrupted suture pattern, specifically 3-0 polypropylene, was used. The post-surgery medication regimen included Ceftriaxone<sup>9</sup> [Ceftriax<sup>®</sup> - 25-50 mg/kg, IV]; Metronidazole<sup>10</sup> [Metronack<sup>®</sup> - 15 mg/kg, IV], Tramadol Hydrochloride<sup>8</sup> [Cronidor<sup>®</sup> - 2 mg/kg, TID for 3 days] (diluted and administered slowly), and Sucralfate<sup>9</sup> [Sucrafilm<sup>®</sup> - 5 mL/animal PO BID, for 5 days] via gastric tube.

On 02/02/2023, the patient exhibited apathetic behavior and was diagnosed with hypoglycemia. A glucose bolus was administered to normalize the blood glucose levels. He was fed through the tube every 3 h with 20 mL of warm pâté Hills Urgent Care a/d. During the afternoon, Glycemia was 111 mg/dL, TPC 2 s, normal colored mucosa, respiratory rate 80 bpm, heart rate 116 bpm, rectal temperature 37.4°C, he was hydrated, urine with normal color, he was extremely calm and apathetic. Mean arterial pressure was 75 mmHg. The patient got

up and was able to support the four limbs, demonstrating more alertness in relation to the environment and sensory stimuli. During the night, blood glucose was 96 mg/dL, and only the respiratory rate was altered, with 44 bpm, he did not detect vomiting, and he had not urinated. Simethicone<sup>16</sup> [Luftal<sup>®</sup> - 40-125 mg/animal, TID, PO for 5 days], and Cyproheptadine Hydrochloride + Combinations<sup>9</sup> [Apevitin BC<sup>®</sup> - 0.1 mg/kg PO for 5 days] orally, every 12 h, with an indication of 5 days.

On 02/03/2023, during the night, the patient became more agitated, presented episodes of mimic vomiting, but did not perform the act. The parameters were within the reference values. The other parameters were checked on the monitor, and the mean arterial pressure was normal, the stools were pasty and with melena (but little), and he urinated in large amounts. Therefore, to control pasty feces, the use of the Probiotic<sup>17</sup> [Probsil<sup>®</sup> - 2 g/animal once daily for 7 days PO], was started. Throughout the afternoon, the patient was stable, showed no interest in food, but accepted when it was offered. When walking around inside the hospital, he urinated and the stools were pasty, the vital parameters were normal. Maropitant Citrate<sup>3</sup> [Cerenia<sup>®</sup> 1 mL/10 kg, IV] has become the medication of choice for the control of mimic vomiting. At night, the animal mimicked vomiting and darkened stools but continued to accept food and was urinating normally.

On 02/04/2023, the animal was more reactive, the vital parameters were within normal limits, but it rejected the food, being necessary to force 40 mL, slowly. Due to the animal's reluctance to feed spontaneously, Diazepam<sup>14</sup> [Compaz<sup>®</sup> - 0.2 mg/kg, IV single dose] was administered to stimulate appetite. At night, he

defecated in a small amount, with a pasty appearance but normal color, urinating a lot, without vomiting.

On 02/05/2023, he was more stable, with significant improvement. Then, the patient began to eat spontaneously and drank water normally. She toured the hospital twice, walking normally without complaining. The dog's vital parameters were normal, pasty stools during the day, and he urinated 4 times during the day with normal color. She presented only a mime of vomiting. As she handles it many times, she becomes aggressive due to stress. Her cone was removed, and the dressing was applied in place of the surgical incision.

On 02/06/2023, he was stable and alert, ate spontaneously, drank, urinated, but did not defecate. No episodes of emesis. He had an altered heart rate, with 96 BPM and other vital parameters within normal limits. Due to the cardiac alteration, an evaluation with a specialist was indicated. In addition, there was a need to be alert due to the behavior of licking the surgical wound.

On 02/07/2023 during the night, he was stable. He presented vomiting in the late afternoon. Due to the emesis, Maropitant Citrate<sup>3</sup> [Cerenia® - 1 mL/10 kg, IV] was given subcutaneously, and soon afterward she showed interest in eating.

On 02/08/2023, the patient was active, with normal parameters, with normodipsia, normorexia, normoesthesia. During the night she urinated twice and walked twice. Her stools were already consistent and in good shape. She presented a gradual hiccup, but it soon passed.

On 02/09/2023, until 7 am, there were no complications, he ate and ate normally, urinated but did not defecate, normal parameters. At 12 o'clock, she presented a slight swelling in the abdomen, and it was necessary to puncture and drain 4 mL of seroma. Afterward, the Non-Steroidal Anti-inflammatory Robenacoxib<sup>18</sup> [Onsior™ - 1 mL/10 kg, SC] was administered subcutaneously, and a warm compress was applied to the region. Throughout the afternoon, she did not show any other changes, she was fit for the rest of the postoperative period at home.

## DISCUSSION

The animal reported in this case had the habit of eating garbage, with no control over intake by the owner. The ingestion of non-digestible objects is a common habit among domestic dogs and cats, it affects more young animals and was recurrent in this case.

On physical examination, the patient's clinical parameters were within normal limits, but with ocular discharge and sensitivity to abdominal palpation. According to other studies, the animals that were affected by a foreign body showed progressive weight loss, diarrhea, sporadic vomiting, soft stools with the presence of mucus, pain on palpation, prayer position [4], and apathy [8]. However, in another study [11], the animal exhibited additional symptoms, such as polydipsia and prostration. In view of this, it is observed that obstruction by foreign objects can generate several symptoms, regardless of the animal.

When the foreign body is present in the stomach, performing a gastrotomy is indicated, as well as an enterotomy in the small intestine [8]. A similar case occurred in the study [19] in which the animal had to be submitted to gastrotomy and enterotomy, after confirmation by ultrasonography of a linear foreign body.

After the postoperative period, the physiological parameters were checked every 1 h, and during the period the animal showed apathetic behavior, with hypoglycemia, which was normalized using a glucose bolus. In addition, [7] approached an 8-year-old Labrador retriever dog, where she had to undergo an emergency exploratory laparotomy, and then an enterotomy was performed to remove stones in the small intestine, but the next day the patient died due to surgical complications.

Abdominal ultrasound was used as a diagnostic measure, solving with about 80% of contribution, ultrasound examination is effective in detecting the accumulation of fluids, helping both in the recovery of fluids and in the evaluation of organs that are present in the abdominal cavity abdomen to indicate enlargements or trauma [6]. In the present case, two rounded structures were found in the stomach and one in the small intestine, preventing the passage of substances.

Complementary exams were requested to complement the physical exam, among which were blood count, hematozoan research, some biochemicals such as Alanine aminotransferase (ALT), alkaline phosphatase (AP), urea and creatinine, 4Dx Plus test and abdominal ultrasound. No presence of parasites was found in the hematozoan research. In the 4Dx rapid test, the material used was whole blood.

For the anesthetic protocol, recommends the administration of Methadone (a central acting analgesic) and Dexmedetomidine (a muscle relaxant) [12].



**Figure 4.** The Bitch after foreign body removal. A- Postoperative state after foreign body removal. B- Medically discharged after foreign body removal.

In induction and maintenance, the drug of choice was Propofol since it promotes sedation and hypnosis [12]. But in continuous infusions, the drugs of choice were Remifentanyl together with Dexmedetomidine and Ketamine hydrochloride. Bupivacaine and morphine were used for epidural block. An epidural block is a technique of local anesthesia that reversibly blocks nerve conduction, blocking nerve fibers [12].

Due to the clinical signs of vomiting, Omeprazole, and Maropitant Citrate were administered to the patient during the hospital stay. Omeprazole is essential to decrease gastric acid secretion [15] and Maropitant Citrate is a centrally acting antiemetic used for vomiting [6]. For abdominal discomfort, Buscopin was used since the combination of dipyron and scopolamine has an antispasmodic function [16].

The medical discharge occurred when the animal was better after the operation, with no changes in clinical parameters. The prognosis depends on several factors, such as the presence or absence of stomach perforation [13]. In the present report, postoperative monitoring contributed excellently to the patient's improvement. The patient remains healthy and active, returning to normal activities (Figure 4).

In conclusion, the consumption of foreign bodies is relatively common in the veterinary clinical routine and is mainly due to behavioral and nutritional disorders, affecting young animals, mainly dogs. Therefore, in the case, the exams were conclusive in that they identified the presence of structures both in the stomach and in the small intestine, in which the

bitch had to be submitted to Gastrotomy and Enterotomy for the removal of foreign structures. The constant monitoring provided to the animal made it possible for the postoperative period to be quite successful.

#### MANUFACTURERS

<sup>1</sup>Vetnil. Louveira, SP, Brazil.

<sup>2</sup>Santisa Laboratório Farmacêutico S.A. Bauru, SP, Brazil.

<sup>3</sup>Zoetis Brasil. Campinas, SP, Brazil.

<sup>4</sup>Geolab Indústria Farmacêutica. Anápolis, GO, Brazil.

<sup>5</sup>Medmax Equipamentos Hospitalares, Laboratoriais e Veterinários. Barueri, SP, Brazil.

<sup>6</sup>Lan YuXuan Beijing PhaBuilder Biotechnology. Beijing, China.

<sup>7</sup>Idexx Laboratories Inc. Westbrook, ME, USA.

<sup>8</sup>União Química. São Paulo, SP, Brazil.

<sup>9</sup>EMS Pharma. Hortolândia, SP, Brazil.

<sup>10</sup>Laboratórios B. Braun S.A. São Gonçalo, RJ, Brazil.

<sup>11</sup>Promega Biotecnologia do Brasil Ltda. São Paulo, SP, Brazil.

<sup>12</sup>Carvalhoes - Produtos e Equipamentos para Laboratórios. São Paulo, SP, Brazil.

<sup>13</sup>Samtec Biotecnologia. Ribeirão Preto, SP, Brazil.

<sup>14</sup>Cristália Produtos Químicos Farmacêuticos Ltda. Itapira, SP, Brazil.

<sup>15</sup>Syntec do Brasil. Tamboré, SP, Brazil.

<sup>16</sup>Reckitt Benckiser (Brasil) Industrial Ltda. São Paulo, SP, Brazil.

<sup>17</sup>Vansil Indústria Comércio e Representações Ltda. Descalvado, SP, Brazil.

<sup>18</sup>Elanco Saúde Animal Ltda. Barueri, SP, Brazil.

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