Artigo Original

v. 7 n. 3 (2026)
ISSN: 2675-8008
Revista Multidisciplinar em Saúde

ACESSO ABERTO

Data de Recebimento:
19/07/2026

Data de Aceite:
31/07/2026

Data de Publicação:
17/08/2026

Autor correspondente:
Gyres Zinsou Metognisse Lanmadoucelo, 5° ano de curso de graduação (Medicina Veterinária). Endereço: Rua Manoel Mota, Patos-PB, Brasil. Telefone: (83) 99680-0096. E-mail: gyres97@gmail.com.

Citação:
LANMADOUCELO, G.Z.M; et al; Esophageal bone foreign body in a female spitz dog: Case report.

Revista Multidisciplinar em Saúde, v. 7, n. 3, 2026. https://doiorg/10.51161/integrar/rems/4887

DOI: 10.51161/integrar/rems/4887

ESOPHAGEAL BONE FOREIGN BODY IN A FEMALE SPITZ DOG: CASE REPORT

Gyres Zinsou Metognisse Lanmadoucelo[a,*], Lucas Lucena Medeiros da Silva[b], Pablo Vinícius Carneiro de Lima[b], Maria Gabriela Sousa Ernesto[c], Rony Deivid Soares Santos[d], Daniel Oliveira Macêdo[e], Arthur Masaharu da Nóbrega Batista[f], Pedro Isidro da Nóbrega Neto[g].

[a] Discente do Curso de Medicina Veterinária da Universidade Federal de Campina Grande (UFCG). Avenida Universitária, s/n - Santa Cecília, Patos - PB, CEP 58708-110.

[b] Residente em Cirurgia de Pequenos Animais pelo Programa de Residência Multiprofissional em Saúde da UFCG. Avenida Universitária, s/n - Santa Cecília, Patos - PB, CEP 58708-110.

[c] Residente em Clínica Médica de Pequenos Animais pelo Programa de Residência Multiprofissional em Saúde da UFCG. Avenida Universitária, s/n - Santa Cecília, Patos - PB, CEP 58708-110.

[d] Residente em Anestesiologia Veterinária pelo Programa de Residência Multiprofissional em Saúde da UFCG. Avenida Universitária, s/n - Santa Cecília, Patos - PB, CEP 58708-110.

[e] Residente em Diagnóstico por Imagem pelo Programa de Residência Multiprofissional em Saúde da UFCG. Avenida Universitária, s/n - Santa Cecília, Patos - PB, CEP 58708-110.

[f] Mestrando do Programa de Pós-Graduação em Ciência e Saúde Animal da UFCG. Avenida Universitária, s/n - Santa Cecília, Patos - PB, CEP 58708-110.

[g] Docente do Curso de Medicina Veterinária da UFCG. Avenida Universitária, s/n - Santa Cecília, Patos - PB, CEP 58708-110.

ABSTRACT

Introduction: Esophageal obstruction by foreign bodies in canines is a clinical emergency, especially when it occurs in the distal portion of the esophagus, due to the increased risk of perforation and mediastinitis. The aim of this study was to report a case of esophageal bone foreign body in a young female dog, highlighting the clinical findings, imaging diagnosis, surgical approach, and postoperative evolution. **Case report:** A 5-month-old female Spitz dog weighing 1.7 kg presented with regurgitation, gagging, and vomiting after ingesting a chicken bone fragment. During the physical examination, the patient presented with tachycardia, tachypnea, normal mucous membranes, and slight discomfort on abdominal palpation. Radiographic evaluation revealed a radiopaque structure compatible with a bone fragment in the caudal portion of the esophagus, between the ninth and tenth intercostal spaces. Because the bone fragment was firmly impacted in the caudal esophagus and was considered unsuitable for safe endoscopic removal due to its size and irregular shape, a left intercostal thoracotomy followed by esophagotomy was performed. **Discussion:** Clinical signs combined with clear radiographic findings enabled rapid therapeutic decision-making. Endoscopy is the first-line treatment for most esophageal foreign bodies. However,

esophagotomy remains an effective and justified alternative when severe impaction precludes safe endoscopic removal. **Conclusion:** Immediate surgical intervention combined with appropriate anesthetic and postoperative management was essential for a favorable outcome.

Keywords: Esophagus; Obstruction; Esophagotomy; Thoracotomy

RESUMO

Introdução: A obstrução esofágica por corpos estranhos em caninos é uma emergência clínica, especialmente quando ocorre na porção distal do esôfago, devido ao aumento do risco de perfuração e mediastinite. Objetivou-se com este estudo relatar um caso de corpo estranho ósseo esofágico em uma cadela jovem, destacando os achados clínicos, o diagnóstico por imagem, a abordagem cirúrgica e a evolução pós-operatória. **Relato de caso:** Uma cadela da raça Spitz, com 5 meses de idade e 1,7 kg, apresentou episódios de regurgitação, ânsia, e vômito após ingerir um fragmento de osso de frango. Durante o exame físico, a paciente apresentou taquicardia, taquipneia, mucosas normais e leve desconforto à palpação abdominal. A avaliação radiográfica revelou uma estrutura radiopaca compatível com fragmento ósseo na porção caudal do esôfago, entre o nono e o décimo espaços intercostais. Como o fragmento ósseo estava firmemente impactado na porção caudal do esôfago e foi considerado inadequado para remoção endoscópica segura devido ao seu tamanho e formato irregular, foi realizada uma toracotomia intercostal esquerda seguida de esofagotomia. **Discussão:** A associação entre os sinais clínicos e os achados radiográficos bem definidos permitiu rápida tomada de decisão terapêutica. A endoscopia é o tratamento de primeira escolha para a maioria dos corpos estranhos esofágicos. No entanto, a esofagotomia permanece uma alternativa eficaz e justificada quando a impactação grave impossibilita a remoção endoscópica segura. **Conclusão:** A intervenção cirúrgica imediata, associada ao manejo anestésico e pós-operatório adequados, foi essencial para um desfecho favorável.

Palavras-chave: Esôfago; Obstrução; Esofagotomia; Toracotomia.

INTRODUÇÃO

Esophageal foreign bodies in canines constitute emergency situations (BURTON; TALBOT; KENT, 2017). These accidents generally occur due to the accidental ingestion of non-food objects, such as bones or plastic fragments, which can become lodged in different segments of the digestive tract, with the thoracic esophagus being one of the most common sites (RIBEIRO et al., 2024). Distal esophageal obstruction can increase the likelihood of esophageal erosions by more than 12 times compared to proximal locations (BARASH et al., 2022).

The clinical signs, diagnosis, and foreign body removal techniques are well described by João and Costa (2023). Plain radiography is frequently used as an initial tool for identifying radiopaque foreign bodies, as it allows for the localization of the obstruction and assists in defining the therapeutic approach. However, it has limitations in cases involving non-radiopaque materials (RIBEIRO et al., 2024).

Regarding treatment, different strategies are available. Less invasive techniques can be employed in specific situations, such as repositioning the ingested object into the stomach followed by removal via gastrotomy (MONTANHIM et al., 2016). Furthermore, attempting removal via endoscopy has been reported as an initial alternative, although its effectiveness depends on factors such as the size, shape, and location of the object (PARANHOS; SOUZA; FREITAS, 2021).

The description of this case is justified by the need to expand the clinical and surgical documentation regarding this condition in young small-breed dogs. It may also contribute to early recognition, therapeutic decision-making, and postoperative management in patients with similar clinical presentations.

The aim of this study was to report a case of esophageal bone foreign body in a female Spitz dog,

highlighting the main clinical, diagnostic and therapeutic findings observed.

CASE REPORT

A 5-month-old female Spitz dog weighing 1.7 kg was presented to the Hospital Veterinário Universitário Prof. Dr. Ivon Macêdo Tabosa (HVUIMT), Universidade Federal de Campina Grande (UFCG), Câmpus de Patos, Paraíba, Brazil. According to the owner, the animal was clinically normal until it gained access to household trash and ingested a piece of chicken bone. Shortly after ingesting the bone fragment, the dog developed gagging, retching, regurgitation, and vomiting. The patient arrived at the hospital on the afternoon of bone ingestion, approximately 1 hour and 25 minutes after the event. The owner reported that the vaccination protocol and ectoparasite control were not up to date, but the deworming protocol was being carried out correctly.

During the physical examination, the animal was active and responsive, with a body temperature of 38.8 °C, within the physiological limits for the species. Mild tachycardia was observed, with a heart rate of 158 beats per minute. The patient also exhibited panting associated with an increased respiratory rate (158 breaths per minute), which was attributed to stress during physical examination. Cardiorespiratory auscultation did not reveal murmurs or adventitious sounds, with normal heart rhythm and respiratory sounds.

Capillary refill time and skin turgor were normal, both at approximately two seconds, indicating adequate peripheral perfusion. The degree of dehydration was estimated at less than 5%. The superficial lymph nodes were unremarkable on palpation. Abdominal palpation revealed slight discomfort, suggesting pain or a possible inflammatory process in the region. The oral and ocular mucous membranes were pink, consistent with good tissue perfusion. The patient was alert and responsive.

Based on the clinical findings, a complete blood count and thoracic and abdominal radiographs were requested. The hematological evaluation revealed moderate anisocytosis with microcytosis and the presence of macroplatelets, without significant changes in the leukogram. These findings were considered nonspecific because they were not accompanied by leukocyte alterations, anemia, thrombocytopenia, or biochemical abnormalities that could indicate an active systemic disease process. Therefore, they did not support a diagnosis of systemic inflammatory or infectious disease, and the clinical decision to proceed with surgical treatment was maintained.

Radiographic evaluation was performed approximately 2 hours and 30 minutes after bone ingestion. It revealed two mineral-opaque structures with an amorphous appearance. One was located in the caudal esophagus between the ninth and tenth intercostal spaces. The other was located in the stomach. The fragments measured approximately 1.0 × 0.42 cm and 3.2 × 1.9 cm, respectively, and were consistent with bone fragments (Figure 1).

Figure 1: Radiograph of the female Spitz dog in left laterolateral projection showing a radiopaque foreign body in the caudal portion of the esophagus (white arrow) and inside the stomach (red arrow).
Source: Hospital Veterinário Universitário Prof. Dr. Ivon Macêdo Tabosa (HVUIMT), Universidade Federal de Campina Grande (UFCG), Câmpus de Patos, Paraíba, Brazil.

Radiographic findings supported the diagnosis of esophageal and gastric foreign bodies. Endoscopic removal was not attempted because the bone fragment was relatively large for the esophageal lumen of this patient, irregular, and firmly impacted in the caudal esophagus. Its sharp edges increased the risk of esophageal laceration or perforation during endoscopic retrieval. Therefore, esophagotomy was considered the safest approach because it allowed direct visualization of the affected segment and safe removal of the foreign body. The patient was hospitalized for perioperative monitoring and remained clinically stable overnight. Surgery was scheduled for the following morning and performed approximately 20 hours after bone ingestion.

Pre-anesthetic medication consisted of ketamine (3 mg/kg), tramadol (3 mg/kg), and dexmedetomidine (1 µg/kg) administered intramuscularly in the same syringe. Anesthesia was induced with propofol (1.5 mg/kg, intravenously). After induction, the patient was intubated with a 3.0 mm cuffed endotracheal tube. Total intravenous anesthesia was maintained by constant rate infusion of propofol (0.25-0.35 mg/kg/min), remifentanil (10-20 µg/kg/h), and ketamine (0.6-1.2 mg/kg/h). Oxygen was delivered at 100% through a non-rebreathing anesthetic system. Local anesthesia was provided by a left intercostal nerve block using 2% lidocaine with a vasoconstrictor (10 mg/kg; 0.8 mL) combined with 0.5% bupivacaine (2 mg/kg; 0.64 mL). The total injection volume for the left intercostal nerve block was 1.44 mL.

Intraoperative monitoring was performed continuously and included electrocardiography, heart rate, pulse oximetry, capnography, rectal temperature, and noninvasive blood pressure (systolic, diastolic, and mean). No additional rescue analgesic boluses were required during surgery. The patient remained hemodynamically stable throughout the procedure. Physiological variables remained within normal limits. Intravenous fluid therapy with 0.9% sodium chloride solution was maintained at 2 mL/kg/h throughout the intraoperative period.

After trichotomy, antisepsis, and placement of surgical drapes, a skin incision was made in the eighth

left intercostal space. The subcutaneous tissue, cutaneous muscles of the trunk, latissimus dorsi, serratus ventralis, and intercostal muscles were dissected sequentially. The pleura was then opened to access the thoracic cavity. A Finochietto retractor was placed with moistened laparotomy sponges between the blades and the ribs to improve exposure and facilitate visualization of the surgical field.

During exploration of the cavity, a bone fragment impacted in the caudal portion of the esophagus was identified. To better manipulate the affected segment, 2-0 polyglycolic acid sutures were applied in the cranial and caudal regions to the location of the foreign body, which allowed for safe traction of the esophagus. Subsequently, an esophagotomy was performed and the bone fragment was completely removed. The esophageal mucosa was carefully inspected after removal of the bone fragment. No evidence of mucosal necrosis, perforation, or gross contamination was observed.

Subsequently, esophagorrhaphy was performed with 3-0 nylon suture in a simple interrupted pattern, ensuring proper alignment of the tissue edges. After esophagorrhaphy, gentle digital pressure was applied to both ends of the esophagus to direct the luminal contents toward the suture line. No leakage was observed.

After suturing, the support sutures were removed, and the thoracic cavity was thoroughly washed with warmed sterile 0.9% sodium chloride solution to remove debris and minimize the risk of contamination. After washing, residual fluid was aspirated using a suction device. Rib approximation was performed with 0 nylon suture in a simple interrupted pattern, while the intercostal muscles were sutured with 2-0 polyglycolic acid suture in a simple continuous pattern. Next, the subcutaneous dead space was reduced with the same suture in a continuous pattern, followed by dermorrhaphy with 3-0 nylon suture in a Wolff pattern.

Finally, a 12-Fr urethral catheter was placed as a thoracic drain. It was introduced through the skin at the twelfth intercostal space and entered the thoracic cavity through the seventh intercostal space. The drain was secured to the skin with 3-0 nylon suture in a ballerina pattern, and negative intrathoracic pressure was re-established.

At the end of the surgery, meloxicam (0.05 mg/kg intravenously) was administered as an immediate postoperative anti-inflammatory and analgesic. The patient remained hospitalized for postoperative care, including thoracic drain management and intravenous administration of the following drugs: ceftriaxone 30 mg/kg every 12 hours for 7 days; meloxicam 0.1 mg/kg every 24 hours for 3 days; dipyrone 25 mg/kg every 12 hours for 4 days; and tramadol 5 mg/kg every 8 hours for 5 days. Food was withheld for the first 12 hours after surgery. No feeding tube was used. A soft diet was then introduced in small portions and maintained for 15 days.

Daily wound care was performed on the surgical incision and the thoracic drain insertion site using sterile 0.9% sodium chloride solution to reduce the risk of contamination and local infection. Thoracic drainage was performed every 6 hours during the first postoperative day and every 12 hours thereafter. Approximately 2 mL of serosanguineous fluid was obtained on the first day. The drainage volume progressively decreased throughout hospitalization. No signs of respiratory distress were observed. The thoracic drain was removed five days after surgery because the drainage volume had decreased to less than 1 mL and no additional air or fluid was obtained during subsequent drain aspirations.

During the follow-up appointment 15 days after surgery, the wound was observed to be dry, intact, and without discharge. The patient remained active, with normal appetite, indicating satisfactory recovery and effectiveness of the protocol adopted.

DISCUSSÃO

The patient presented with clinical signs consistent with acute esophageal obstruction, including gagging, retching, and regurgitation after foreign body ingestion. Radiographic findings revealed mineral radiopaque structures with amorphous contours, located in the caudal portion of the esophagus and in the stomach, confirming the diagnosis and defining the extent of the involvement. This type of radiographic presentation, with identification of radiopaque materials and their location along the digestive tract, is described by Paranhos, Souza and Freitas (2021), who highlighted the usefulness of plain radiography in these cases, although the method does not allow for a precise assessment of the degree of tissue involvement. Furthermore, Sterman et al. (2018) explained that bony objects tend to cause pressure necrosis in the esophageal wall, increasing the chance of perforations that are often not detected in plain radiographs, which corroborates the descriptions of Paranhos, Souza and Freitas (2021).

In this observed case, the firm impaction of a bone fragment in the caudal portion of the esophagus required esophagotomy to ensure safe removal and inspection of the mucosa. This approach differed from the strategy described in the study by Coelho (2021), who, in a case of a penetrating foreign body (fishhook) in the cervical region, managed to perform the extraction using the milking technique, taking advantage of an existing perforation and thus avoiding longitudinal incision of the esophagus. The surgical approach employed was also different from that used in the report by Fadel Neto and Zanoni (2023), who observed successful removal of a foreign body via endoscopy.

Although Maggi et al. (2023) advocated endoscopy as the technique of choice and first option for removing foreign bodies in the upper gastrointestinal tract, in the case reported here, the firm impaction of the bone fragment in the distal portion of the esophagus made the use of this technique unfeasible. Similar situations were described by Flores et al. (2023), who reported the need for esophagotomy when removal by less invasive techniques was impossible. Furthermore, Beer et al. (2022) observed that most dogs undergoing esophagotomy survive until discharge, reinforcing that surgery is a viable alternative, despite risks such as suture dehiscence. Complementarily, Rodrigues et al. (2024) also highlighted esophagotomy as an effective alternative in cases of esophageal impaction, especially when associated with a risk of complications.

Early intervention is a relevant factor in the clinical evolution of these patients, since the duration of foreign body retention is associated with an increased risk of complications such as esophageal perforation, mediastinitis, and cicatricial stenosis. Such complications have been described in cases of late diagnosis or inadequate management, reinforcing the importance of timely decision-making (MONTANHIM et al., 2016). According to Burton, Talbot and Kent (2017), patients requiring surgery face a higher mortality risk than those resolved by endoscopy, with bleeding or perforation during manipulation of the object being the main factors that increase the likelihood of death.

Regarding surgical technique, proper tissue manipulation and the choice of suture pattern are determining factors for the success of the procedure, considering the high risk of complications in esophageal surgeries (Beer et al., 2022). In this case, esophagorrhaphy performed with monofilament suture in a simple interrupted pattern, associated with careful management of the esophageal tissue, possibly favored healing and reduced the risk of dehiscence.

A limitation of this report is the relatively short follow-up period of 15 days, which is insufficient

to definitively exclude late postoperative complications, particularly esophageal stricture formation. Esophageal strictures are recognized delayed complications following esophageal surgery in dogs and may develop weeks after the initial injury and healing process. This risk may be of particular concern in young and small-breed patients, in which the reduced esophageal diameter and tissue reactivity can potentially influence cicatricial response. Therefore, longer follow-up would be necessary to provide a more accurate assessment of long-term outcomes after esophagotomy.

CONCLUSÃO

This report demonstrates that thoracotomy combined with esophagotomy can be an effective alternative in the management of esophageal foreign bodies in situations where less invasive techniques are unfeasible, especially in cases of firm impaction and risk of tissue injury. However, as this is a case report, it is not possible to establish the superiority of this technique over other therapeutic methods, and the choice of approach should be individualized according to the clinical characteristics of each patient. Therefore, the need for future studies with a larger number of cases and a comparative design is reinforced, in order to better define objective criteria for the management of this type of condition.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the Universidade Federal de Campina Grande (UFCG) for institutional support. This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001.

ETHICS STATEMENT

The authors declare that this study was not submitted for review by the Ethics Committee of the Universidade Federal de Campina Grande because it is a case report based exclusively on routine clinical care, without any additional procedures performed for research purposes.

DECLARATION OF CONSENT FOR PUBLICATION

The animal's owner provided written informed consent for the use of the clinical information and radiographic image related to this case, as well as for the publication of this case report, by signing the Free and Informed Consent Form of the Universidade Federal de Campina Grande (UFCG).

CONFLICT OF INTEREST

The authors declare no conflicts of interest, because the research was conducted in the absence of any commercial or financial relationships.

REFERENCES

BARASH, N. R. et al. Outcomes of esophageal and gastric bone foreign bodies in dogs. **J Vet Intern Med,** v. 36, n. 2, p. 500-507, 2022. DOI: 10.1111/jvim.16383.

BEER, A. J. C. et al. Complications associated with and outcome of surgical intervention for treatment of

esophageal foreign bodies in dogs. **J Am Vet Med Assoc,** v. 260, n. 6, p. 622-627, 2022. DOI: 10.2460/javma.21.01.0060.

BURTON, A. G.; TALBOT, C. T.; KENT, M. S. Risk Factors for Death in Dogs Treated for Esophageal Foreign Body Obstruction: A Retrospective Cohort Study of 222 Cases (1998–2017). **J Vet Intern Med,** v. 31, n. 6, p. 1686-1690, 2017. DOI: 10.1111/jvim.14849.

COELHO, L. M. **Retirada cirúrgica de corpo estranho esofágico perfurante sem esofagotomia em cão: relato de caso.** 2021. 38 p. Trabalho de Conclusão de Curso (Graduação em Medicina Veterinária) – Centro Universitário Luterano de Palmas, Palmas, 2021.

FADEL NETO, E.; ZANONI, F. L. Condutas anestésicas na endoscopia para remoção de corpo estranho esofágico: Relato de caso. **Pubvet,** v. 17, n. 12, e1478, p. 1-5, 2023. DOI: 10.31533/pubvet.v17n12e1478.

FLORES, F. S. et al. Toracotomia com esofagotomia para remoção de corpo estranho esofágico em um cão. **Braz J Health Rev,** v. 6, n. 2, p. 6932-6939, 2023. DOI: 10.34119/bjhrv6n2-196.

JOÃO, C. F.; COSTA, P. R. S. Gastroenterologia. In: CRIVELLENTI, L. Z.; BORIN-CRIVELLENTI, S. (org.). **Casos de rotina em medicina veterinária de pequenos animais.** 3. ed. São Paulo: MedVet, 2023. cap. 9, p. 451-492.

MAGGI, G. et al. Endoscopic Retrieval of Esophageal and Gastric Foreign Bodies in Cats and Dogs: A Retrospective Study of 92 Cases. **Vet Sci,** v. 10, n. 9, e560, 2023. DOI: 10.3390/vetsci10090560.

MONTANHIM, G. L. et al. Manejo de corpo estranho em esôfago torácico em cão – relato de caso. **Enciclopédia Biosfera,** v. 13, n. 24, p. 684-692, 2016. DOI: 10.18677/EnciBio_2016B_064.

PARANHOS, L. C. A.; SOUZA, P. M.; FREITAS, G. C. Sinais radiográficos de corpo estranho esofágico radiopaco em cão: Relato de caso. **Pubvet,** v. 15, n. 4, a798, p. 1-5, 2021. DOI: 10.31533/pubvet.v15n04a798.1-5.

RIBEIRO, R. B. et al. Corpo estranho esôfago-gástrico em um canino. **Ciência Animal,** v. 34, n. 3, p. 199-207, 2024.

RODRIGUES, J. S. et al. Esofagotomia intratorácica em cão para remoção de corpo estranho. **Ciência Animal,** v. 34, n. 3, p. 172-184, 2024.

STERMAN, A. A. et al. Likelihood and outcome of esophageal perforation secondary to esophageal foreign body in dogs. **J Am Vet Med Assoc,** v. 253, n. 8, p. 1053-1056, 2018. DOI: 10.2460/javma.253.8.1053.