

BRONCHOESOPHAGEAL FISTULA IN SHEEP – CASE REPORT

FÍSTULA BRONCOESOFÁGICA EM OVINO – RELATO DE CASO

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SUMMARY

The term bronchoesophageal fistula is used for the abnormal communication between the esophageal lumen and the pulmonary bronchi. There are no reports of this condition in production animals, and its origin is unknown. A male Dorper sheep from the Veterinary Hospital of the Santo Amaro University, SP, Brazil, presented clinical signs of tachypnea, apathy, and coughing after eating. The animal died suddenly after a fever break. During the gross evaluation, a fistula was noticed in the middle third of the thoracic esophagus with communication to the right cranial lung lobe, forming an encapsulated area measuring 24.5 cm x 22.0 cm x 9.4 cm. Fibrous tissue delimited the pulmonary lobe and feed filled the compartment. This is a rare condition with unclear etiopathogenesis.

KEY-WORDS: Bronchoesophageal fistula. Sheep. Secondary bacterial pneumonia.

RESUMO

O termo fístula broncoesofágica denomina a comunicação anormal entre o lúmen esofágico e os brônquios pulmonares. Não há relatos dessa condição em animais de produção, e sua origem é desconhecida. Um ovino macho da raça Dorper, proveniente do Hospital Veterinário da Universidade Santo Amaro, SP, Brasil, apresentou sinais clínicos de taquipneia, apatia e tosse após a alimentação. O animal morreu repentinamente após quadro febril. Na avaliação macroscópica notou-se fístula no terço médio do esôfago torácico com comunicação para o lobo pulmonar cranial direito, formando uma área encapsulada medindo 24,5 cm x 22,0 cm x 9,4 cm. Tecido fibroso delimitava o lobo pulmonar e conteúdo alimentar preenchia o compartimento. Esta é uma condição rara com etiopatogenia incerta.

PALAVRAS-CHAVE: Fístula broncoesofágica. Ovelha. Pneumonia bacteriana secundária.

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INTRODUCTION

Esophageal diseases are reported with a low incidence in ruminants (BAIRD & SHIPLEY, 2020). Among the esophageal disorders, it is possible to classify them as obstructive (foreign body, neoplasms, parasitoses, and stenosis) and diseases caused by extravasation (perforation and ruptures), sometimes these are secondary to an obstructive process (BAIRD & SHIPLEY, 2021). In companion animals, esophageal extravasations can also be caused by esophageal fistulas, although rare in small animals and ruminants (CHAROONRUT, 2015; MELTZER, 1906). There are two types of esophageal fistulas, the tracheoesophageal fistula, which is the abnormal connection between the trachea and the esophagus, and the bronchoesophageal fistula, which is the communication between one or more bronchi and the esophagus (MEREI et al., 1997).

The clinical signs of bronchoesophageal fistula are nonspecific, described as episodes of coughing after eating or drinking, dyspnea, nasal discharge, regurgitation, anorexia, weight loss, and lethargy (CHAROONRUT, 2015). The most reliable method for diagnosing esophageal fistulas is esophagography with positive contrast, however, endoscopy and histopathological examination aid the diagnosis (BAIRD & SHIPLEY, 2021). The surgical treatment consists of performing a pulmonary lobectomy of the affected segment and repair of the esophageal

imperfection (BAIRD & SHIPLEY, 2021). When there are no secondary complications, the prognosis after surgical intervention is good (JONG, 2010).

CASE REPORT

A six-year-old male Dorper sheep breed, from the Veterinary Hospital of the Santo Amaro University, São Paulo, SP, Brazil, had up-to-date vaccinations for rabies virus, clostridia, and *Corynebacterium pseudotuberculosis*. Clinical signs during the presentation were tachypnea, apathy, and episodes of coughing after food intake. On physical examination, mean body score, heart rate of 100 b.p.m, respiratory rate of 40 m.r.p.m, 9 ruminal movements in 5 minutes, and body temperature of 40.4 °C. The blood count and leukogram showed no changes. The animal died suddenly.

A necroscopic examination of the animal was performed, which presented a fistula in the middle third of the thoracic esophagus (Figure 1) with communication to the right lung lobe, forming in the cranial and middle portion of the lung parenchyma an encapsulated area measuring 24.5 cm x 22.0 cm x 9.4 cm filled with abundant rumen content (Figure 2A and 2B). The examined portion adhered to the parietal pleura, where it was possible to visualize the presence of fibrin. No other significant macroscopic findings were observed.

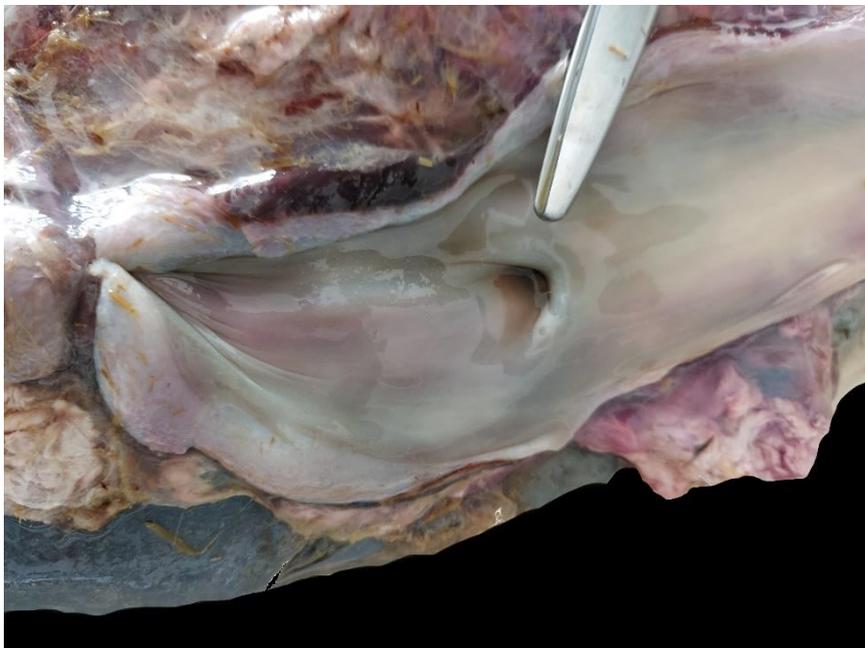


Figure 1 - Esophageal lumen presentation of bronchoesophageal fistula.

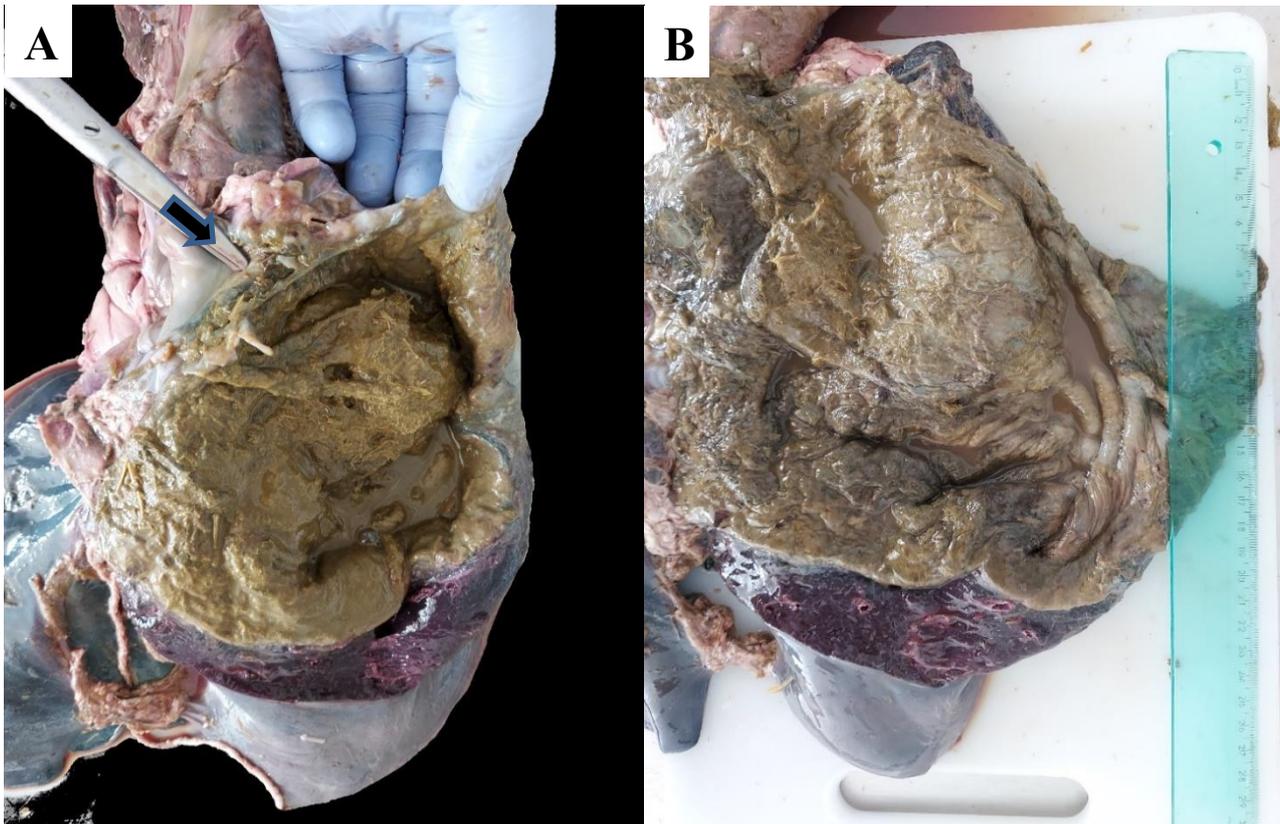


Figure 2 - (A) section of the left cranial lung lobe communicating with a bronchoesophageal fistula (arrow). Note the compartment containing the feed content delimited by an area of fibrosis. (B) Dilated lung compartment after feed content removal.

The histopathological examination showed an abundant amount of fibrous connective tissue with bacterial colonies in the cranial and middle portion of the right lung lobe. In its caudal lobe portions, the other lung lobes did not present macroscopic and histopathologic alterations.

RESULTS AND DISCUSSION

The term bronchoesophageal fistula is used for the abnormal communication between the esophageal lumen and one or more bronchi (BAIRD & SHIPLEY, 2020). This condition is described both congenitally and acquired, the congenital form being associated with complications during embryonic development resulting in the junction of the esophagus with the respiratory tract (JONG, 2010). However, acquired bronchoesophageal fistulas are more common, due to trauma by foreign bodies, neoplasms, toxic substances, chronic infection, and even abscesses (ORTON, 2017). In dogs and cats, esophageal fistulas are rarely described, however, the development of these species is mostly secondary to the perforation of foreign bodies, mainly bones (SUTTON et al., 2016). There are no reports of this condition in production animals, and its origin is unknown (SUTTON et al., 2016).

Clinical signs of bronchoesophageal fistula are nonspecific, however coughing after ingestion of food or water is the most described manifestation in small

animals. The sheep reported having a cough after feeding, as well as tachypnea, apathy, and fever.

The histopathological findings determine lobar secondary bacterial pneumonia, which is a complication of an abnormal communication between the esophagus and bronchi since the extravasation of ruminal contents into the respiratory tract allowed the establishment of an infectious process. Consequently, the apathy and fever presented can be interpreted as non-specific manifestations of such morbidity (BESSER, 2012).

The necropsic findings, as well as the history of clinical manifestations of the animal, especially coughing after feeding, might be related to a foreign body perforation previously that progress to the acquired bronchoesophageal fistula (BAIRD & SHIPLEY, 2021). In addition, considering that the predominant daily habits of sheep involve feeding, rumination, and idleness, it can be considered that the trauma was of accidental origin, after the ingestion of food with a particle of piercing potential, which is unknown at the necropsy time.

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