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## Role of foreign body ingestion in canine pup mortality

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**Abstract**

Foreign body ingestion could cause death in pups. Two month old male crossbred pup had oesophageal choke due to a piece of chicken bone and the four month old male non-descript pup had peritonitis due to a linear foreign body (string) in the intestine. Anorexia, dullness, retching, vomiting and bilateral frothy nasal discharge were observed. A chicken bone measuring about 5x2 cm completely was obstructing the lower third of the oesophagus. Death was due to asphyxia caused by frothy exudates in the trachea and bronchi. Non-descript pup, showed haemoperitoneum, impaction of stomach with linear foreign bodies resulted in a thick cotton string perforating and causing plication of small intestine. Intestinal mucosa was severely congested, hemorrhagic and contained scanty, dark red-brown contents mixed with mucus.

**Keywords:** Choke, chicken bone, linear foreign body, pup mortality

**Introduction**

Stricture or a wall perforation with subsequent abscessation, pleuritis, mediastinitis, pneumomediastinum, pneumothorax, peritonitis and pneumoperitoneum were the common complications of esophageal and gastrointestinal foreign bodies<sup>1</sup>. Depending on the location of foreign bodies a variety of clinical signs were observed including salivation, retching, gagging, vomiting, regurgitation, anorexia, pain, respiratory distress and restlessness<sup>[2, 3, 4]</sup>. Dogs were more likely to be presented with gastrointestinal foreign bodies because of their slightly indiscriminate eating habits, swallowing of incompletely masticated food and exposure to toys and dental chews. Life threatening complications developed especially in small breed dogs and dogs with bone foreign bodies<sup>[3]</sup>. The linear foreign bodies accounted for 16 percent of the foreign bodies and most common anchorage point was pylorus (67 percent) with the foreign material extending into the proximal jejunum<sup>[5]</sup>. Multiple rupture and peritonitis were the common findings in linear foreign body obstruction. Total 39 oesophageal foreign bodies were bones including 23 vertebrae, 2 chicken bones, 1 turkey bone and 1 beef bone<sup>[4]</sup>. Out of the 44 dogs presented with oesophageal foreign bodies, 4 died and 3 dogs were reported with aspiration pneumonia.

**Materials and Methods**

Two month old male crossbred pup and the four month old male non-descript pup were reported to Madras Veterinary College teaching hospital with the history of anorexia, dullness, retching, vomiting and bilateral frothy nasal discharge. During examination these pups were collapsed. Detailed post-mortem examinations of the dead puppies were conducted. Tissue samples from various organs were collected in 10 percent formalin for histopathology

**Results and Discussion**

Out of 77 pups post-mortem examinations, two (2.59 percent) had foreign bodies. One case was choke in a 2 month old male crossbred due to a piece of chicken bone and the second was a case of peritonitis due to a linear foreign body (string) in the intestine of a 4 month old male non-descript. Anorexia, dullness and retching were observed in the first case and in the second case vomiting was observed. Condition of the body was good and visible mucous membranes were pale pink and moist in both the cases. In the first case, bilateral frothy nasal discharge was observed. Distal 1/4<sup>th</sup> of the oesophagus was distended to about 5cm. An oblong, firm object was observed. On incision, an oblong chicken bone, measuring about 5x2 cm completely obstructing the lower third of the oesophagus was observed. The mucosa was congested at the site of obstruction. Stomach was highly distended, contained copious frothy

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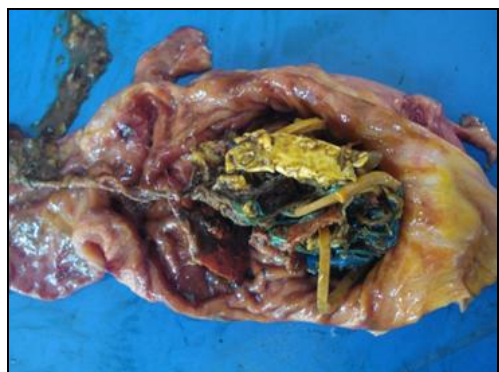
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fluid mixed with semisolid, greyish white ingesta, small pieces of bone, cartilage and a few *T. canis* worms. Small intestine revealed numerous *T. canis* worms mixed with mucus. Trachea contained copious frothy fluid. Caudal lobes of the lungs were dark red-brown and oedematous whereas, cranial lobes showed patchy areas of brown interspersed with pink. Caudal lobes on incision revealed frothy fluid up to the bronchus. Small pieces of lung sank in water. Liver was slightly enlarged, borders rounded, grey-brown and mottled. Thymus was congested chicken bone, measuring about 5x2 cm completely.



**Obstructing the lower third of the oesophagus**



**Stomach was impacted with foreign bodies**

In the second case, abdominal cavity of the non-descript pup contained about 500 mL of dirty brown thick serosanguineous fluid. Stomach was impacted with foreign bodies like rubber band, aluminium foil, nylon and string mucosa showed diffuse congestion and a few scattered erosions. The coiled, slightly thick cotton string was seen extending into the small intestine. Plication of intestinal loops up to the colon was observed. The string within the lumen of the intestine measured 179 cm and was noticed throughout the lumen and extended up to the rectum. At the ileal region, a small part of the string measuring about 2cm was found protruding through the serosa of the plicated loop (anterior) and entering through the serosa of the posterior part of the loop. Intestinal mucosa was severely congested and haemorrhagic and contents were scanty, dark red-brown with mucus.

Out of 77 cases, two (2.59 percent) had foreign bodies. One case was oesophageal choke in a 2 month old male crossbred due to a piece of chicken bone and the second was a case of peritonitis due to a linear foreign body (string) in the intestine of a 4 month old male non-descript [3], stated that life threatening emergencies developed with bone as foreign bodies. Anorexia, dullness and retching were observed [2, 3, 4]. Bilateral frothy nasal discharge was observed. Distal 1/4<sup>th</sup> of the oesophagus was distended to about 5cm with an oblong firm object. On incision, it was a chicken bone measuring

about 5x2 cm completely obstructing the lower third of the oesophagus. The mucosa was congested at the site of obstruction. Stomach was highly distended, contained copious frothy fluid mixed with semisolid, greyish white ingesta, small pieces of bone and cartilage. Concurrent toxocariasis was also found. Trachea contained copious frothy fluid. Pulmonary oedema of caudal lobes and pneumonia of cranial lobes were observed. One author found 2 chicken bones in the oesophageal foreign bodies [4].

In the second case, abdominal cavity of the non-descript pup contained about 500mL of dirty brown thick serosanguineous fluid. Stomach was impacted with foreign bodies like rubber band, aluminium foil, nylon and string. The coiled, slightly thick cotton string was seen extending into the small intestine. Plication of intestinal loops up to the colon was observed. The string within the lumen of the intestine measured 179 cm and was noticed throughout the lumen and extended up to the rectum. At the ileal region, a small part of the string measuring about 2cm was found protruding through the serosa of the plicated loop (anterior) and entering through the serosa of the posterior part of the loop. Intestinal mucosa was severely congested and haemorrhagic and contents were scanty, dark red-brown with mucus. These findings were in agreement with author, who reported that the complications of oesophagus and gastrointestinal foreign bodies were, stricture, perforation with subsequent abscessation, pleuritis, mediastinitis, pneumomediastinum, pneumothorax, peritonitis and pneumoperitoneum [1].

### Conclusion

Foreign body ingestion during the neonatal life is more common in pups. Out of 77 pups post-mortem examinations, two (2.59 percent) had foreign bodies. One case was oesophageal choke in a 2 month old male crossbred due to a piece of chicken bone and the second was a case of peritonitis due to a linear foreign body (string) in the intestine of a 4 month old male non-descript. Anorexia, dullness, retching, vomiting and bilateral frothy nasal discharge were observed. A chicken bone measuring about 5x2 cm completely was obstructing the lower third of the oesophagus. Death was due to asphyxia caused by frothy exudates in the trachea and bronchi. Second case, a non-descript pup, showed haemoperitoneum. Impaction of stomach with linear foreign bodies resulted in a thick cotton string perforating and causing plication of small intestine. Intestinal mucosa was severely congested, haemorrhagic and contained scanty, dark red-brown contents mixed with mucus.

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