Alexandria Journal of Veterinary Sciences 2014, 42:11-15
ISSN 1110-2047, www.alexjvs.com
DOI: 10.5455/ajvs.160550

Surgical Managment of Foreign Bodies in Stomach and Intestine of Some Foregin Breed Dogs

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Key words
Surgery, foreign bodies, stomach, Intestine, dogs

ABSTRACT:

The present study aimed to throw a light on presence of foreign bodies in some foreign breed dogs, under Egyption condition, with special reference to their diagnosis and treatement. The study is carried out on 53 dogs of Rotwieller, German sheepared and Golden retriver breeds. The weights ranged from 15-85 kgs and age ranged from 1-5 years. All dogs were subjected to thorough clinical examination including recording heart rate, respiratory rate and body temperature, beside abdominal palpation to detect the site of foreign bodies (when possible). Radiographic examination was performed to confirm the diagnosis. Higher incidence of foreign bodies in stomach and intestine was observed in stomach (41.51%) and jejunium (33.97%). Types of foreign bodies included; stones (38.30%), rubber object (15.09%), plastic objects (11.32%) and metal objects (11.32%). The mortality rate due to foreign bodies in dogs proved higher in old dogs and in female than male dogs. The best method for treatment of foreign bodies in dogs was the surgical interference. The intestinal intussusception and perforation were surgically treated through end to end anastomosis after resection of the necrotic part.

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1. INTRODUCTION

Nowadays in Egypt, dogs represent one of the main pet animals as they play an important role in house and farm guarding. These animals are frequently subjected to some surgical affection of bones and abdomen (Simpson et al., 2009 and Sherwinter et al., 2011). Presence of the foreign bodies in stomach and intestine causes severe abdominal problems in dogs (Allman and Pastori, 2013). Presence of gastric foreign body in dogs is a significant risk factor for gastric dilatation and volvulus. The diagnostic methods used to recognize abdominal problems include complete medical history, physical and radiographic examination of the affected abdomen. The type of repair undertaken depends on a number of factors as; the site of the lesion, the duration, the abdominal injuries, presence of multiple abdominal injuries, the intended activity of the patient, the patient's age, the owner's financial resources and commitment and the surgeon's experience (Parker, 2012). The most common site of intestinal obstruction by foreign bodies was the jejunum and the most effective treatment was enterotomy. Dogs mostly ingested stones, plastic and rubber objects (den Hertog, 2003 and Hoffmann, 2003). The present study aimed to throw light on presence of foreign bodies in some foreign breed dogs under Egyption condition and the possible methods for diagnosis and treatment.

2. MATERIALS AND METHODS

The present study was carried out on 53 foreign breed dogs, weighting 15-85 kgs and aging 1-5 years. These dogs were collected from Hanovel private clinic at Alexandria city and some cases were collected from clinic of Faculty of Veterinary Medecine, Alexandria University. The foreign bodies were diagnosed in each affected dog through careful history, clinical signs, palpation of foreign bodies to detect its site (either in stomach or in intestine) and radiographic examination by using plain or contrast radiograph, using X-ray china (x-ray c) 120-240 kv, 30 MA. The laparo-gastrotomy and laparo-enteretomy were performed under the effect of general anesthesia using 2% xylazine HCl (xylaject) as 1.1mg/1kg. (The Egyption Co. for chemicals and pharmaceuticals), atropine sulphat as 0.03 mg/kg and ketamin 2% HCl as 2.2 mg/kg. All drugs were given intramascular. The site of operation was perpared for aseptic surgery and the animals were casted on dorsal recumbancy. Paramedian celeiotomy reach site of the foreign body

in stomach or intestine followed by an incision at this site to remove the foreign body. 4 cases of sharp foreign bodies causing necrosis of the intestinal wall were subjected to intestinal resection and anastomosis. The affected dogs were isolated firstly before surgery by 2 days, and then 12 hours before surgery, the food was withheld; only water was given. After routine aseptic precaution and through a mid line incision, the ileum was isolated from surrounding abdominal structures, the resection was done and the two ends of intestine were closed via end-to-end anastomosis, except one case was treated by side-to-side anastomosis. The abdominal wall was closed routinely and all dogs were subjected to the traditional post operative care and follow-up. The collected data was subjected to statistical analysis according to SAS (2004).

3. RESULTS

Out of the recorded 53 cases of foreign bodies in dogs in this study, the sharp foreign bodies were recorded in 16 cases representing 30.188%. While the blunt foreign bodies were recorded in 37 cases representing 69.8%. Type of foreign bodies which found in this study differed (Table, 1 and Figs., 1-8) between stones (28.30%), rubber object (15.09%), plastic object (11.32%), metal object (11.32%), stopper (5.66%), and marble (5.66%).

The data in table (2) cleared that there was a significant difference in number of cases in each part of digestive tract. The higher incidence of foreign bodies in digestive tract was observed in stomach (41.51%) and jejunum (33.97%) while the lower incidence observed in colon (1.87%).

There was a significant difference of the fatality rate among age and sex of examined dogs (Table, 3). There were 8 cases dead out of the 53 cases after surgery. 47.6% of those died during first day after surgery, 19.04% died in second day and 14.28% died on third day. No difference in lethal rate between male and female. Regarding age, slight larger number of lethal outcome was recorded in dogs more than 2 years.

Table 1. Different types of foreign bodies in stomach and intestine.

Type	Number	%
Stones	15	28.30
Rubber objects	8	15.09
Plastic objects	6	11.32
Bones	4	7.55
Stopper	3	5.66
Marble	3	5.66
Metal objects	6	11.32
Glass objects	4	7.55
Calami	4	7.55
Total	53	100

$Chi^2 = 25.40^{**}$ ** = Significant at (P < 0.01).

Table 2. Location of foreign bodies in digestive tract of dogs

Site	Number	%
Stomach	22	41.51
Duodenum	5	9.45
Jejunum	18	33.97
Ilium	3	5.66
Ilio-cecal valve	4	7.54
Colon	1	1.87
Total	53	100

Table 3. Survival and fatality rate in relation to age and sex.

Age of dogs	Sex	Cured	Death
Up to 2 Year	Male	85.22%	14.40%
	Female	83.33%	16.67%
Over 2-year	Male	79.50%	20.50%
	Female	79.16%	20.84%

$Chi^2 = 8.34^{**}$ ** = Significant at (P < 0.01).

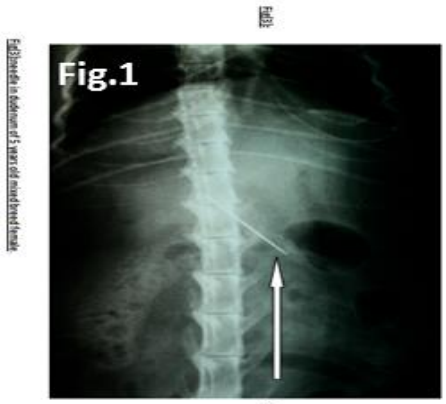
One of the 4 cases of intestinal foreign bodies treated by intestinal resection and anastomosis (Table, 4), was due to blunt foreign body in an 8 month male dog and characterized by partial obstruction of intestine which respond to treatment by end-to-end anastomosis (Figs. 9) without any complications within 2 weeks. The foreign bodies and intussusception was recorded in one female german shepard dog, as a result of severe abdominal pain and conistipation. The previous case respond successfully to treatment without any complications throw intestinal resection and end-to-end anastomosis.

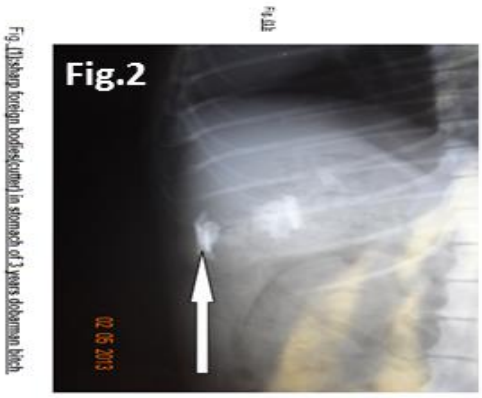
4. DISCUSSION

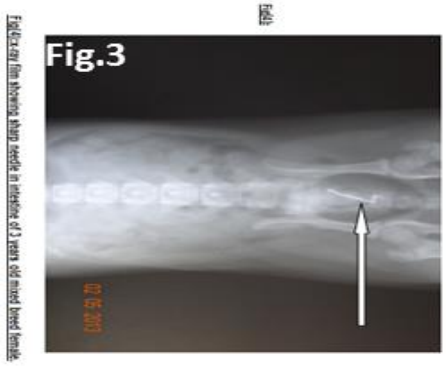
The abdominal problems resulted from foreign bodies in gastrointestinal tract (GIT), especially stomach and intestine, were the main abdominal affection that affected dogs and cause severe problems(Parker, 2012). The results of the current investigation cleared that number of animals suffered from foreign bodies in GIT reached to 53 cases. There was a significant difference in number of cases among in each part of digestive system.

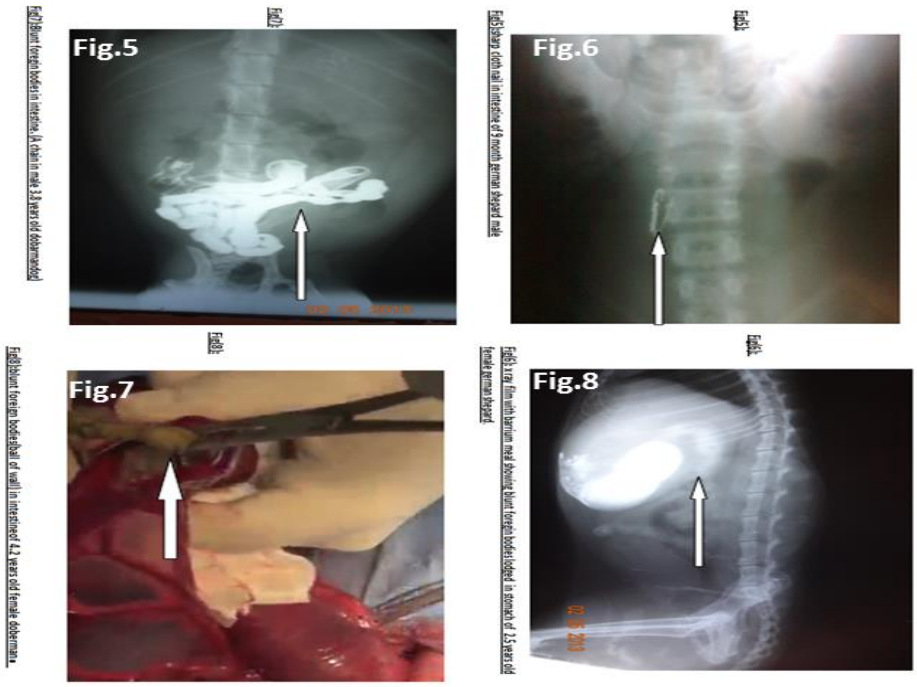
Table (4): Complications, age, technique of surgery and sex in dogs suffer from intestinal foreign bodies

No.	Causes	Complications	Age (month)	Sex	Technique
1	Intussusception	No	24	female	End-to-end
2	Perforation	No	9	female	Side-to-side
3	Perforation	Leakage after 3 days	12	male	End-to-end
4	Blunt FB obstruction	No	8	male	End-to-end









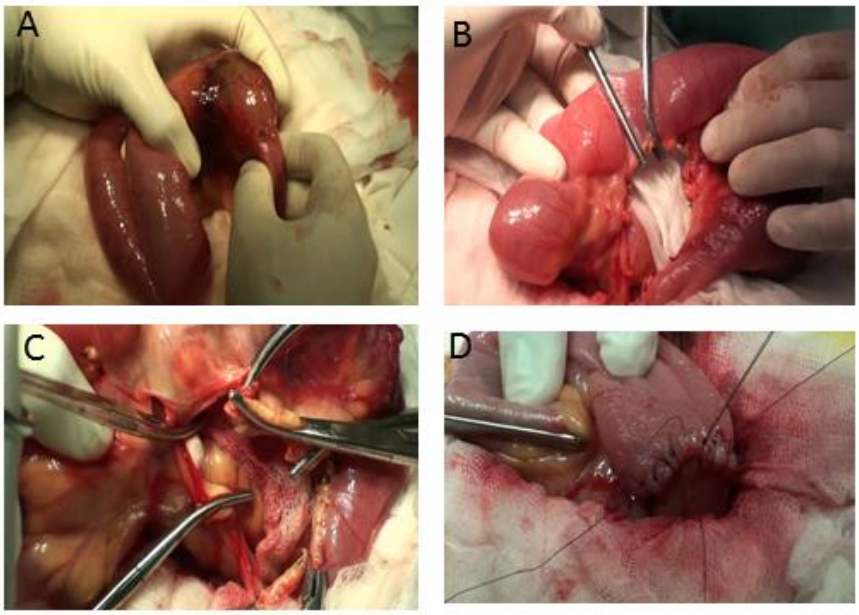


Fig (9): Intestinal foreign bodies in 8 month old male:
(A): lodging of foreign body in intestine
(B): Catching of intestine behind the place of foreign body by tissue forceps
(C): Catching of two ends of intestine after removal of foreign body
(D): Anastomosis by end-to-end technique

The higher incidence of foreign bodies in digestive tract was observed in stomach (41.51%) and jejunum (33.97%). Meanwhile, the lower incidence was observed in colon (1.87%). This finding may be attributed to early diagnosis of the foreign body during its entrance to the GIT, stomach and duodenum rather the other parts; ilium and iliocecal valve. These results agreed with that of Hoffmann (2003); Choi et al. (2007) and Veeder and Taylor (2009) when

reported that the most incidence of foreign bodies observed in stomach and Jejunum and the lower incidences observed in the other parts of the lower digestive tract. Regarding type of the foreign bodies, the result of this study agreed with that of Capak et al. (2001), Gorman et al. (2006) and Calvo et al. (2011) as they reported that types of foreign bodies differ according to the place that the dog bred in it but the most common types of foreign bodies observed in dogs include; stone, rubber objects, plastic objects, metal objects. Choi et al., (2007) and Leib and Sartor (2008) reported that the dogs bred in area of high sharp objects like needles and nails always suffer from presence of sharp penetrating objects in the digestive system. The results of the current study revealed that there was a significant ($P < 0.01$) difference of the fatality rate among age and sex of examined dogs. The higher curing rate observed in male (85.22) than the in female (83.33 %) at 2 years old age. While, over 2 years old, the curing rate were 79.50 % for male and 79.16 % for female. The results also indicated that, the mortality rate due to foreign bodies in dogs increased in old age dogs and was higher in females than that of males. The results agreed with those of Allman and Pastori (2013) where they reported that the mortality rate due to foreign bodies in old dogs is higher than that of young dogs and in female than of male dogs. That could be attributed to housing of female dogs (bred in house) which commonly played by sharp objects especially nails and needles. The current results agreed with those of Rahal et al. (2003) and Allman and Pastori (2013) where they reported that the intestinal anastomosis complications differ according to age of incidence of anastomosis, methods of surgery and the susceptible sex. The complications rarely occur in dogs and constituted abdominal pain and diarrhea. It could be concluded that the higher incidence of foreign bodies in digestive tract observed in stomach and jejunum. The type of foreign bodies varied between stones, rubber objects, plastic objects and metal objects. The mortality rate increased in old age and in female than in male dogs. Surgical interference proved successful for treatment of foreign bodies in dogs especially for management of intestinal intussusception and perforation of the intestine via end-to-end anastomosis after resection of the necrotic part.

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