

# TRICHOBEZOARS ASSOCIATED WITH INTESTINAL OBSTRUCTION IN A SHE-CAMEL (*Camelus dromedarius*)

I.M. Eljalii, R.O. Ramadan and A.I. Almubarak

Department of Clinical Studies, College of Veterinary Medicine and Animal Resources,  
King Faisal University, P.O. Box 400, Al-Hassa, Saudi Arabia

## ABSTRACT

A two year old she camel presented with history of recurrent tympany and abdominal distention, stopped defecation since last 3 days. Successful rumenotomy revealed 29 ovoid compressed trichobezoars from compartment 1 (C<sub>1</sub>), C<sub>3</sub> and colon and one trichophytobezoar in C<sub>1</sub>. The trichobezoars removed from the colon might have caused intestinal obstruction leading to the observed clinical manifestations.

**Key words:** Camel, intestinal obstruction, trichobezoars

Anciently bezoar is thought to designate protection against poisons (antidote) (Fowler, 1996 and Muhammed *et al*, 2011). However, recently, phytobezoars (plant fibres), trichobezoars (wool ball) and trichophytobezoars (mixed varieties) are incriminated for inducing gastro-intestinal disorders. (Sanders *et al*, 2004; Schweizer *et al*, 2005). The potential hazards of trichobezoars ensue when they are trapped in the intestinal lumen (Fowler, 1996). In the small ruminants, the incidence of phytobezoars is estimated as 20% while those of trichobezoars may reach 6% (Bath and Bergh, 1970). Occasional reports documented the presence of trichobezoars in compartment 1 (C<sub>1</sub>) and duodenum of camels (Ramadan and Abdin-Bey, 1990 and Gameel *et al*, 2000).

The aim of the present report was to document presence of massive trichobezoars associated with intestinal obstruction in a she camel.

### Case history and examination

A two year old she camel weighing 250 Kg presented to the Veterinary Teaching Hospital, King Faisal University, with history of recurrent tympany of 6 months duration. The animal which had bad vices of self-licking and licking other animals, stopped defecation since last 3 days. The animal was emaciated (3/5 score) and had abdominal distention. Rumen movement was sluggish and rocking sounds were heard with gentle percussion on the left flank. Rectal temperature was normal (38°C).

### Surgical intervention

The animal was restrained in the sternal position and sedated with xylazine given intravenously at the dose of 0.2 mg/kg body weight. The left flank was prepared for an aseptic operation and was then infiltrated with 2% lignocaine hydrochloride. A skin incision was made caudal to the last rib. Following laparotomy, the rumen was pulled to the operative field. An oval piece of the rumen was fixed on abdominal muscles on the upper and lower part of the wound with an interrupted sutures using polyglactin 910 (no 5 metric). About 40 litres of rumen fluid was siphoned. Following rumenotomy 16 ovoid compressed trichobezoars and one phytotrachobezoar were removed from the compartment 1 (C<sub>1</sub>) (Fig 1). Furthermore, 6 floating bezoars were found in compartment 3 (C<sub>3</sub>). Both compartments were closed with inverted sutures. Search of abdomen revealed 7 more bezoars entrapped inside the colon. These were removed through two different enterotomy wounds (Fig 2). A 100 ml of streptopenicillin was poured intraperitoneally. The abdominal wound was closed in a routine manner while the skin was sutured with interlocking stitches. The animal was discharged after administration of parenteral antibiotic and anti-inflammatory injection. The bezoars were dried at ordinary room temperature then weighed with sensitive scale and their diameter were recorded using verners caliper.

### Results and Discussion

The present study showed that the average weight of the bezoars in C<sub>1</sub> (n=16) was 135.93 ± 32.70g

SEND REPRINT REQUEST TO R.O. RAMADAN email: rramadan@kfu.edu.sa

and the bezoars in C<sub>3</sub> (n-6) was 22.82 ± 28.30g. While the bezoars in the colon (n-7) average weight was 5.36 ± 1.00g. The average volume of the bezoars in the C<sub>1</sub>, (n = 16), C<sub>3</sub> (n-6) and colon (n-7) were 561.60 ± 186.00 cm<sup>3</sup>; 82.85 ± 112.90 cm<sup>3</sup> and 15.81 ± 4.40 cm<sup>3</sup>, respectively.

Trichobezoars were loosely found in compartment 1 and 3 and were tightly entrapped in the lumen of the colon (Gameel *et al*, 2000). Ramadan *et al* (2007) noticed faecoliths sticking inside the colon that eventually caused intestinal obstruction. The colon narrows greatly at the centripetal flexure and this area is the main part of re-absorption of fluid (Smuts and Bezuidenhout, 1987). The huge number of bezoars might cause occasional blockage of rumeno-oesophageal opening which explained the recurrent tympany during the last six months as well as emaciation due to impairment of digestion. Moreover, the previous constipation and stopped defecation for last three days may be attributed to obstruction of intestine (colon) by the bezoars. The presence of bezoars

might have caused hindrance to rumen outflow resulting in retrograde accumulation of fluid (40 litres) in compartment 1 which was removed during surgery. The left flank approach seemed easy and both compartment 1 and the colon were accessible through this area without difficulty.

In the present study, the bezoars were made up of hair which occurred due to self-licking and licking other animals. This could explain the signs of alopecia appearing on the body of the animal since our laboratory analysis for skin parasites and fungi were negative. Self-licking may have triggered depraved appetite and pica phenomenon associated with trace elements deficiency (Fraser and Bloom, 1990).

The classical types of foreign bodies recovered from stomach of the camel were pieces of undigested plants and plastic (Fahmy *et al*, 1995) or metallic objects (Purohit *et al*, 1982). Similarly other studies revealed presence of foreign materials of plastic and related materials in different ruminants (Alhendi *et*



Fig 1. Trichobezoars recovered during surgery.

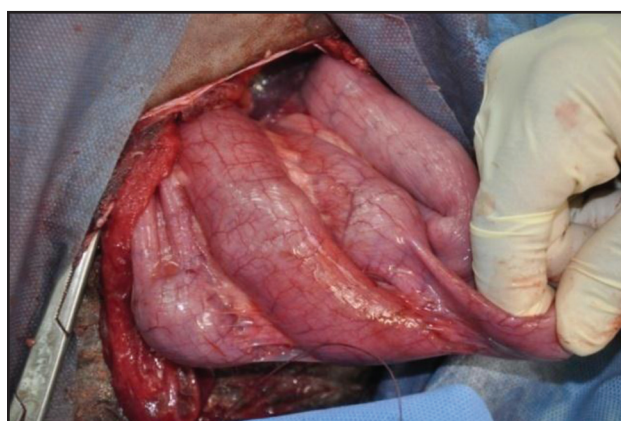


Fig 3. Rounded shaped masses in colon due to bezoars.



Fig 2. Dried trichobezoars (B) and phytotrichobezoars (TP).

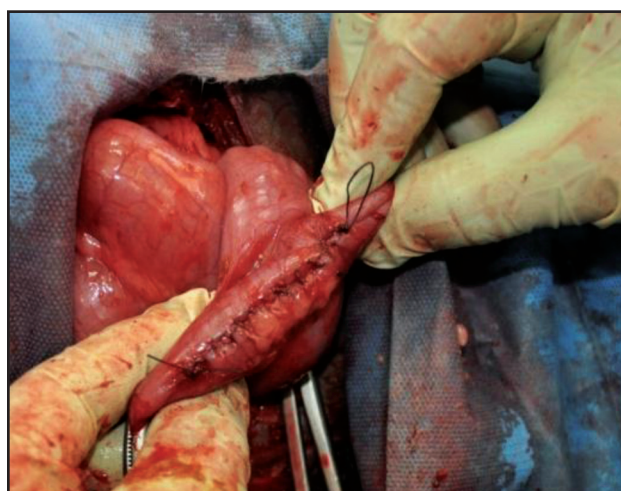


Fig 4. Inverted sutures following enterotomy and removal of bezoars.

al, 1990; Igbokwe *et al*, 2003 and Remi-Adewunmi *et al*, 2004). However, trichobezoars were extremely rare in camel (Ramadan and Abdin-Bey, 1990 and Gameel *et al*, 2000). Trichobezoars have been frequently reported in cats and small ruminant and rarely in other animals (Bath and Bergh, 1970 and Ramadan, 1995). Concretions may form directly in the intestines of horses and perhaps other species, but in camelids the likely source of intestinal concretions is the stomach (Fowler, 1996).

It could be concluded that this case represented a rare occurrence of large number of trichobezoars in a camel in both stomach compartments as well as intestine leading to obstruction.

### References

- Alhendi B, Ramadan R, Gameel A, Abdin-Bey M, Al-Garram M and Al-Agib A (1990). Ruminal foreign bodies in sheep and goats in Saudi Arabia. Proc. 3<sup>rd</sup> Int. Cong. Pakistan Veterinary Medical Association. pp 80-90.
- Bath G and Bergh T (1970). A specific form of abomasal phytobezoar in goats and sheep. Journal of South African Veterinary Association 50:68-72.
- Fahmy LS, El-Zomor S, Mostafa MB and Hegazy A (1995). An abattoir survey of presence of foreign body in the stomach of the camel (*Camelus dromedarius*). Journal of Camel Practice and Research 2(2):139-141.
- Fowler E (1996). Concretions in camelids. Journal of Camel Practice and Research 3:107-113.
- Fraser A and Broom D (1990). In farm Animal Behaviour and Welfare, 3<sup>rd</sup> Edn ELBS Baillier Tindall, London. pp 318-322.
- Gameel A, Alhendi B, Ramadan R and Dafalla A (2000). The incidence of foreign bodies in the stomach of camels (*Camelus dromedarius*). Journal of Camel Practice and Research 7:159-161.
- Igbokwe I, Kolo M and Egwu G (2003). Rumen impaction in sheep with indigestible foreign bodies in the semi-arid region of Nigeria. Small Ruminant Research 49:141-146.
- Muhammad M, Banyigyi S, Tafarki E, Ighodalo E, Benschak J, Asala O, Rimfa A, Ibu J and Ehizobolo D (2011). Trichobezoar as cause of anorexia in a West African dwarf goat. Nigerian Veterinary Journal 32:362-365.
- Purohit R, Chouhan D, Dudi P and Choudhary R (1982). Surgical recovery of accidental knife in camel (*Camelus dromedarius*). Indian Veterinary Journal 59:317-318.
- Ramadan R, Abdin-Bey M, Mohammed G, Bakhsh A, Al-Mubarak A and Al-Butayan A (2008). Intestinal obstruction in camels (*Camelus dromedarius*). Journal of Camel Practice and Research 15:71-75.
- Ramadan R (1995). Massive formation of bezoars in sheep. Agriculture Practical 16:26-28
- Ramadan R and Abdin-Bey M (1990). Obstruction of the esophagus in camels. Indian Veterinary Journal 67:363-364.
- Remi-Adewunmi B, Gyang E and Osinowo A (2004). Abattoir survey of foreign body rumen impaction in small ruminants. Nigerian Veterinary Journal 25:32-38.
- Sanders M (2004). Bezoars: from mystical charms to medical and nutritional management. Practical Gastroenterology. pp 37-50.
- Schweizer G, Fluckiger M and Braun U (2005). Ruminal tympany due to a trichobezoar in a heifer. Veterinary Radiology and Ultrasound 46:500-501.
- Smuts M and Bezuidenhout A (1987). Anatomy of The Dromedary. Clarendon Press. Oxford.