

Research article**Duodenotomy in a cat for removal of a sewing needle: A case report**

Mohammad Bayazid Bostami*, **Aparna Datta**, **Mizanur Rahman**, **Abdul Mannan** and **Mir Md. Afzal Hossain**

Teaching and Training Pet Hospital and Research Center, Chattogram Veterinary and Animal Sciences University (CVASU), Chattogram-4225, Bangladesh.

ARTICLE INFO

ABSTRACT

Article history:

Received: 11/12/2019

Accepted: 12/02/2020

Keywords:

Sewing needle, radiograph, laparotomy, duodenotomy, cat.

*Corresponding Author:

Cell: +8801625876820

Email: bayazid.vet39@gmail.com

An unusual case of 4-years old female cat was presented to the Teaching and Training Pet Hospital and Research Center (TTPHRC), Purbachal, Dhaka with a complaint of accidental ingestion of sewing needle connected with long thread on the day of incidence. The presented cat didn't have any other complication on physical examination. Lateral and ventrodorsal radiograph of the abdomen showed the location of sewing needle in the stomach. On the 2nd day of incidence, presurgical radiographs confirmed the migration of sewing needle to the posterior location. Following laparotomy, stomach and intestine were gently checked by manual palpation for any perforation and location of sewing needle detected in the duodenum. The needle was successfully extracted by duodenotomy. The owner was contacted regularly till two weeks post-operatively and the cat recovered without any complication.

To cite this paper: M.B. Bostami, A. Datta, M. Rahman, A. Mannan and M.M.A. Hossain, 2020. Duodenotomy in a cat for removal of a sewing needle: A case report. *Bangladesh Journal of Veterinary and Animal Sciences (BJVAS)*, 8(1):151-154.

1. INTRODUCTION

Ingestion of foreign objects is a common clinical problem in small animal practice specially in dogs and cats (Calvo et al., 2011). Ingestion of needles without any attached thread or braid, are not commonly reported to cause problems, as they usually either fail to reach the stomach or pass through the intestinal tract uneventfully (Calvo et al., 2011). Most common ingestible foreign bodies in cats include needles, string, toys, elastics, plastic and hair (Webb, 2014). In many cases, the owner has witnessed ingestion of the foreign objects but occasionally, foreign body ingestion is not witnessed by an owner, and yet imaging can be used to locate a foreign body within the gastrointestinal tract. Clinical signs of gastrointestinal foreign bodies include vomiting, hematemesis, anorexia,

lethargy, abdominal pain, or the foreign body may be an incidental finding (Webb, 2014). Radiography can be helpful in many cases of esophageal and gastrointestinal foreign bodies detection, especially if the object is metallic. Depending on the nature of the foreign body and risk of gastrointestinal tract obstruction or perforation, various treatments may be recommended such as intensive monitoring, induction of emesis, and endoscopic or surgical removal (Pratt et al., 2014). Surgical intervention is recommended in patients who develop clinical signs or patients in which the foreign body fails to advance after 3 days (Lee, 2018). This case report describes a case of a migrating sewing needle to the duodenum and purpose of the study was diagnostic evaluation to locate the sewing needle, definitive treatment, and monitoring the outcome of treatment in a cat.

2. MATERIALS AND METHODS

2.1. Case description

A 4-years old, local female cat was presented to Teaching and Training Pet Hospital and Research Center (TTPHRC), Purbachal, Dhaka with a history of ingestion of sewing needle attached with thread. The patient was found quiet but alert and responsive. On clinical examination rectal temperature, heart rate and respiratory rate were found within normal limits. Lateral and ventrodorsal abdominal radiographs were obtained which confirmed the presence of radio-opaque sewing needle in the gastrointestinal tract (Figure-1). Based on history, and abdominal radiography it was diagnosed as sewing needle lodgment and the surgical correction was planned at next day of presentation.

2.2. Treatment

On the day of surgery, abdominal radiograph was taken again to confirm the position of needle prior to surgery and found posterior migration of the needle than the previous location of presentation day. Ventral midline was prepared aseptically for surgery. The cat was sedated with Xylazine, 1mg/kg body weight (Xylazin®, Indian Immunologicals Ltd., Hyderabad, India) and general anesthesia was induced with ketamine 10mg /kg body weight and maintained 5 mg/kg body weight (Ketalar®, Popular Pharmaceuticals Ltd., Dhaka, Bangladesh). A ventral midline laparotomy incision was given from xiphoid cartilage to umbilicus. The stomach and intestines were exteriorized carefully and gently checked for any presence of perforation. The sewing needle was located within the duodenum by manual palpation that has migrated through the stomach. A small incision on duodenum was given and the sewing needle with thread was removed successfully (Figure 2). Duodenum, abdominal muscles and skin were sutured as regular manner.

Postoperatively the cat was treated with ceftriaxone 30mg per kg body weight (Trizon®, ACME Laboratories Ltd, Dhaka, Bangladesh) for 7 days and Meloxicam 0.2mg/ kg body weight (Melvet®, ACME Laboratories Ltd,

Dhaka, Bangladesh) for 3 days. Sutures were removed on 14th days of operation and successful recovery was noticed. The owner reported that the cat was doing well when a follow-up telephone call was made approximately 1.5 months after surgery.

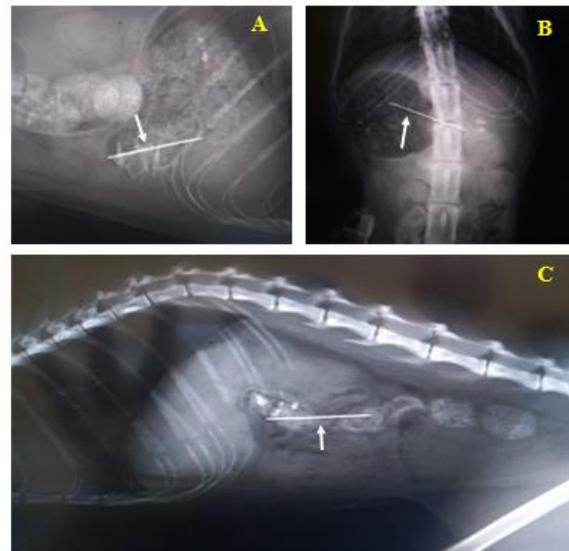


Figure 1: Left lateral abdominal (A), Ventrodorsal abdominal (B) and Right lateral (C) abdominal radiograph showing a radio-opaque sewing needle (arrow).

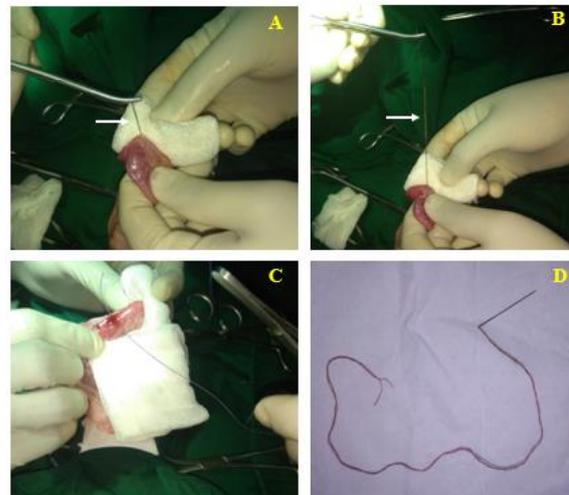


Figure 2: Sewing needle (A) and Sewing needle with long thread removal during surgery (B), Closing of duodenal incision (C) and Sewing needle with whole thread after surgery (D).

3. RESULTS AND DISCUSSION

Ingestion of sewing needle was diagnosed in a cat without clinical signs and the owner noted visual ingestion of sewing needle at home. The study of Pratt et al. (2014), reported that only 8

of 21 (38.1%) dog owners and 8 of 37 (21.6%) cat owners reported that clinical signs were detected at home. The standard care of a hospital that cat with known sewing needle ingestion should receive definitive treatment for the sewing needle because of concerns about extra-gastrointestinal migration (Calvo et al., 2011; Behera et al., 2017 and Lafuente and Driver, 2014) that may result in life-threatening complications. This treatment approach to sewing needle ingestion was highly successful. In the present study, there was no sign of perforation caused by sewing needle.

In both human and veterinary medicine, there are many reports of foreign body ingestion that may migrate or to distant locations. Thoracic and abdominal x-ray associated with abdominal ultrasonography is extremely useful to detect the radiopaque foreign bodies accurately with the associated complications. In this case study, the moving ingested needles were traced and localized using x-ray before development of serious complications, followed by successful surgery. Sharp and elongated foreign objects, such as pins, sticks, grass awns or sewing needles are more prone to migration as their shape makes penetration through soft tissues and causes life-threatening complications (Cottam and Gannon, 2015), even it may migrate up to the liver (Bulakci et al., 2011), pericardium (Fennessy et al., 2009), mediastinum (Ferro et al., 2008), cervical spine (Silvestro et al., 2001), lung (Ozkan et al., 2011), right ventricle (Sarmiento-Leite et al., 2000) and, most commonly, the brain (Pelin and Kaner, 2012 and Sturiale et al., 2010).

In veterinary medicine, there are numerous reports of migrating sewing needle with or without thread. A published retrospective study of sewing needle foreign bodies diagnosed at a veterinary teaching hospital and locations of needles after ingestion were the oropharyngeal region, the upper gastrointestinal (GI) tract and the lower GI tract (Pratt et al., 2014) with the upper GI tract was the most common location of lodgment of ingested sewing needles in both dogs and cats. The most common locations of sewing needles have been reported in the stomach and myocardium of dogs (Hunt, 1991). In cat, there are many reports of sewing needle

ingestion, possibly because sewing needles are often attached to a length of thread, to which cats are attracted (Cornell and Koenig, 2015). In the present study, sewing needle is accidentally ingested by a cat that migrated to the duodenum without any perforation and successfully removed by duodenotomy. Proper history, awareness of the owner, physical examination and radiography are of prime importance in all cases and help to provide confirmatory diagnosis. In summary, this case report describes a sewing needle lodgment in the duodenum of cat without occurring any complication and successful removal of the needle by duodenotomy.

4. CONCLUSIONS

Foreign bodies ingestion in cat is a common phenomenon that could be detrimental and proper treatment is warranted. Foreign bodies lodgment in GI tract can be diagnosed by a combination of physical examination and medical imaging. Pre-operative x-ray is very helpful in planning surgical approach. Owner's awareness, aseptic surgery and proper postoperative management are inevitable for smooth recovery of veterinary patient after surgery.

ACKNOWLEDGEMENT

- Director, Teaching and Training Pet Hospital and Research Center (TTPHRC).
- Authority and supporting staffs, Teaching and Training Pet Hospital and Research Center (TTPHRC).
- Owner of the cat.

REFERENCES

- Behera, M., Pandal, S.K., Nath, I., Panda, M.R., Kundu, A.K., Gupta, A.R. and Behera, S.S. 2017. Incidence of canine ascites in and around Bhubneshwar, Odisha, India. *International Journal of Environmental Science and Technology*, 6(6): 3382-3392.
- Bulakci, M., Agayev, A., Yanar, F., Sharifov, R., Taviloğlu, K. and Uçar, A. 2011. Final destination of an ingested needle: the liver. *Diagnostic and Interventional and Radiology*, 17(1): 64-66.

- Calvo, I., Weiland, L. and Pratschke, K. 2011. Traumatic myocardial laceration as a result of suspected cranial migration of a sewing needle from the stomach of a dog. *Australian Veterinary Journal*, 89(11): 444-446.
- Cornell, K. and Koenig, A. 2015. Gastrointestinal Foreign Bodies. *Small Animal Surgical Emergencies*, 33-42.
- Cottam, E.J. and Gannon, K. 2015. Migration of a sewing needle foreign body into the brainstem of a cat. *Journal of Feline Medicine and Surgery Open Reports*, 1(1): 2055116915589841.
- Fennessy, B.G., Rahbar, R., Bunker, N., Pigula, F. and Casta, A. 2009. The needle and the damage done: pericardial effusion with tamponade after needle ingestion in an infant. *The Journal of Laryngology & Otology*, 123(12): 1396-1398.
- Ferro, C., Rossi, U.G., Bovio, G., Dahmane, M.H., Seitun, S., Santucci, R. and Martinelli, L. 2008. Aortic pseudoaneurysm caused by migration of a swallowed sewing needle: interventional radiology and endoscopic management. *Circulation*, 118(2): e11-e15.
- Hunt, G.B., Bellenger, C.R., Allan, G.S. and Malik, R. 1991. Suspected cranial migration of two sewing needles from the stomach of a dog. *The Veterinary Record*, 128(14): 329-330.
- Lafuente, P. and Driver, C.J. 2014. Migrating sewing needle in the cervical vertebral canal in a dog. *Veterinary Record Case Reports*, 2(1): 000023.
- Lee, J.H. 2018. Foreign body ingestion in children. *Clinical endoscopy*, 51(2): 129.
- Ozkan, Z., Kement, M., Kargı, A.B., Censur, Z., Gezen, F.C., Vural, S. and Oncel, M. 2011. An interesting journey of an ingested needle: a case report and review of the literature on extra-abdominal migration of ingested foreign bodies. *Journal of Cardiothoracic Surgery*, 6(1): 77.
- Pelin, Z. and Kaner, T. 2012. Intracranial metallic foreign bodies in a man with a headache. *Neurology International*, 4(3).
- Pratt, C. L., Reineke, E.L. and Drobotz, K.J. 2014. Sewing needle foreign body ingestion in dogs and cats: 65 cases (2000–2012). *Journal of the American Veterinary Medical Association*, 245(3): 302-308.
- Sarmiento-Leite, R., Silva, G.V., Goulart, L.C., Gottschall, C.A. and Perin, E.C. 2000. A sewing needle in the right ventricle. *Texas Heart Institute Journal*, 27(3): 314.
- Silvestro, C., Cocito, L. and Pisani, R. 2001. Delayed effects of a migrated foreign body (sewing needle) in the cervical spine: a case report. *Spine*, 26(5): 578-579.
- Sturiale, C.L., Massimi, L., Mangiola, A., Pompucci, A., Roselli, R. and Anile, C. 2010. Sewing needles in the brain: infanticide attempts or accidental insertion? *Neurosurgery*, 67(4): E1170-E1179.
- Webb, J. 2014. Gastrointestinal and esophageal foreign bodies in the dog and cat. *The RVT Journal*, 10: 6-10.