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Case Study

Megacolon in Cat

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Abstract

This case study presents the clinical history, examination findings, and medical intervention for a 1.6-year-old male Persian cat named Oslo with megacolon, a condition characterized by abnormal dilation and enlargement of the colon leading to impaired motility and chronic constipation. Oslo exhibited symptoms such as dyschezia, sialorrhea, weight loss, and chronic constipation since kittenhood. Physical examination revealed dehydration, emaciation, and pale mucous membranes. Diagnostic tests, including blood work and X-rays, were conducted, revealing abnormal blood counts and the presence of fecolith accumulation in the colon. Despite initial medical treatment, Oslo's constipation persisted, leading to a subtotal colectomy procedure, During the procedure, a substantial portion of the colon, ranging from 90% to 95%, was surgically excised., and an ileo-colic valve was excised. Post-surgery care involved IV fluids, antibiotics, and a gradual transition to a semisolid diet. Oslo's recovery post-surgery demonstrated improved feed and water intake, indicating a successful outcome. This case emphasizes the importance of prompt veterinary intervention and consideration of surgical options for managing megacolon in feline patients.

Figure a

Keywords: Megacolon; Cat, Persian Cat

Introduction

Upon presentation at the BSPCA, Oslo, a 1.6-year-old Persian cat weighing 4kg, exhibitedconcerning symptoms that prompted a thorough evaluation.

The cat's owner reported observing Oslo's frequent tendency to sit in a corner of the room and

spend prolonged periods in the litter box, which raised concerns about his well-being.

In addition, the owner revealed that Oslo had been treated with laxatives for an extendedduration in an attempt to alleviate chronic constipation and gastrointestinal discomfort.

These symptoms and treatment history underscore the importance of investigating potentialunderlying causes of impaired motility and chronic constipation in feline patients like Oslo.

Factors such as dietary habits, breed predisposition, anatomical abnormalities, and medicalconditions can contribute to these gastrointestinal issues, necessitating a comprehensive assessment to ensure the best possible care and management for affected cats.

History

- Dyschezia(straining while defecation)
- Sialorrhea(Drooling/excessive Salivation)
- Weight loss
- Chronic episodes of constipation since kitten age and Inappetence.
- Previous history of hairball vomiting weekly

Physical Examination and Clinical Findings

- Oslo was dehydrated and emaciated.
- His body looked lethargic.
- Mucous membrane was pale.
- Body temperature was 98^0F.
- Heart rate was 110 BPM.
- Diet consisted of mostly dry food.

Diagnostic Tests performed

- Blood test
- X-ray

Figure b

Blood report findings

Complete blood count

- LFT and KFT values were under normal range.

Test	Result	Normal range
Haemoglobin	6.6%	9.5-15.0gm%
Erythrocytes count	4.14 million/cmm	6.0-10.0million/cmm
PCV	18.4%	29.0-45%
Total WBC Count	60.7×10^3/cmm	$5.5\text{-}19.5 \times 10^3$/cmm
Neutrophils	87%	35-75%

Table a

Lateral radiograph finding

- The lateral abdominal radiograph shows the accumulation of fecolith in colon.
- This shows the presence of Megacolon.

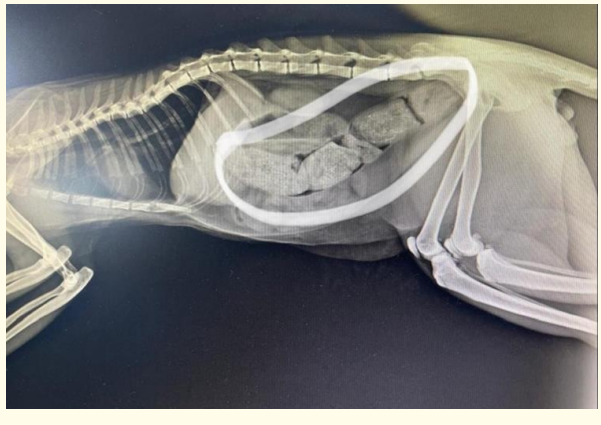

Figure c

What is Megacolon?

Megacolon in cats is a condition characterized by the abnormal dilation and enlargement of the colon, which leads to impaired motility and difficulty in passing feces. It can result in chronic constipation or obstipation (severe, prolonged constipation), and can be quite uncomfortable andeven life-threatening if not managed properly. It's important to seek veterinary care if you suspect your cat might have megacolon [2].

There are mainly 3 types of megacolon

- **Congenital megacolon:** present at the time of birth and is caused by a developmentaldefect in the nerves that control muscles of the colon.

- **Acquired megacolon**
    - **Chronic constipation:** Cat's that experience long term constipation may develop megacolon as a result of the colon becoming overstretched and losing its ability to contract properly [2].
    - **Volvulus:** Twisting or kinking of the colon can result in obstruction and subsequentdilation
    - **Pelvic or spinal abnormalities:** Trauma or injury to the pelvic region or spinal cord,such as fractures, can damage the nerves and muscles involved in colonic motility.This damage can disrupt the normal functioning of the colon and result in megacolon.
    - **Systemic disorders:** Some systemic conditions, such as hypothyroidism, diabetesmellitus, or electrolyte imbalances, can affect colonic motility and contribute to the development of megacolon
    - **Idiopathic megacolon:** is primarily seen in cats but in rare cases occurs in dogs. There isno sex predisposition, but Manx cats may be predisposed. Megacolon that occurs secondary to neurologic, obstructive, or medical disease may be seen in any animal. Middle-aged or older cats are most commonly diagnosed with idiopathic megacolon (range, 1-16 years; mean age, approximately 5-7.5 years) [2,3].

Medical Treatment given

Hydration

- IV fluid
- DNS @10 ml/kg bwt
- RL @10 ml/kg bwt
- Inj Pan40 @ 1 ml/kg bwt
- Inj conciplex @ 0.5 mg/kg bwt

Orally advised

- Syp YesZyme(digestive enzyme): 3ml BID X 3days
- Laxative Liquid paraffin- 3ml X 3 days

Rectally

- Liquid paraffin enema: for 2 days
- The amount of feces was unsatisfactory.
- Constipation still persisted.
- Surgical approach

Anesthesia

- Inj Ketamine@11mg/kg + Inj Sequil@5mg/kg IM
- Inj Buprenorphine @0.005 mg/kg SC
- ET tube: size 2
- Inj Propofol @3mg/kg IV
- Maintenance anesthesia:
- Isoflurane @1% concentration in
- Oxygen

Subtotal colectomy

- Subtotal colectomy: removal of 90%-95% of the colon
- Ileocecal valve was removed, to prevent recurrence
- Laparotomy finding: the entire colon had become atonic and greyish necrosed, flaccid.
- So subtotal colectomy was performed (removal of 95% colon along with the ileo-colic valve followed by ileocolic anastomosis)
- Shave and apply antiseptic scrub at the surgical site (ventral abdominal region)
- Patient is kept in complete dorsal recumbency with limbs tied
- Heart rate, respiratory rate, temperature, anesthesia is continuously monitoredthroughout the procedure using capnography.
- Take a ventral midline incision of 4cm from the umbilicus
- Exteriorize the colon
- (Figure d, e)
- Apply clamps on the abdominal incisions
- Milk away the feces from the sites of resection
- Apply crushing clamps adjacent to the diseased section
- Apply non crushing clamps 4-6 cm away from the crushing clamps
- In this case about 90% of the colon is removed along with the ileocolic valve
- Double Ligate the blood vessels

- Cranial and caudal branches of mesenteric arteries
- Ileac artery and vein
- Ileocolic artery and vein
- Incise the mesentery between the doubly ligated vessels
- Transect the colon between the two clamps
- Clean up the exposed parts of intestine with moist gauze swabs
- (Figure h, i)
- Appose the segments to be anastomosed (ileum and colon)
- Apply stay sutures at mesenteric and anti-mesenteric borders
- Complete the anastomosis with lambert's continuous suture using Vicryl 3-0
- Closure of mesenteric defect by simple continuous suture
- Closure of muscle and skin using Vicryl 2-0
- Surgical site on the skin is dressed and a sterile cloth is tied covering the e-collar is usedfor the cat to prevent biting and licking of the skin [1,3].

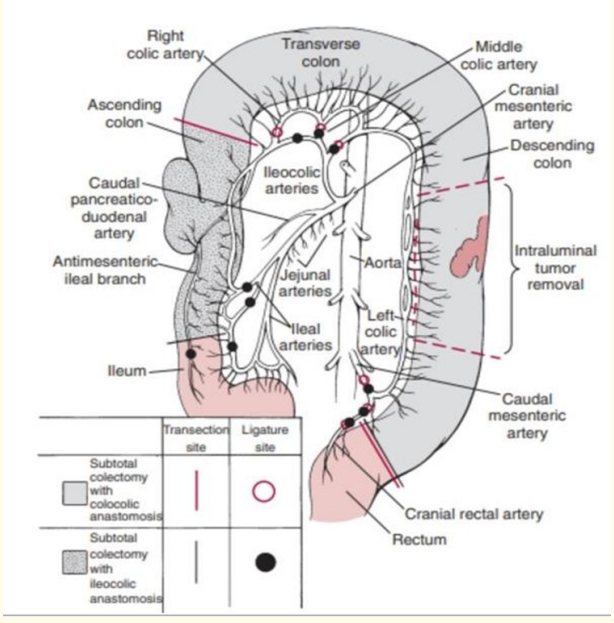

Figure f

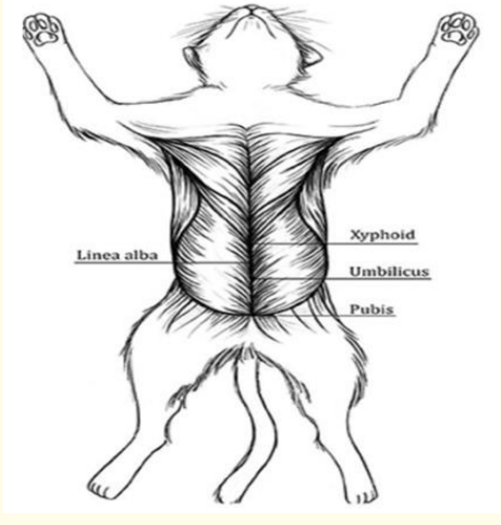

Figure d

Figure g

Figure e

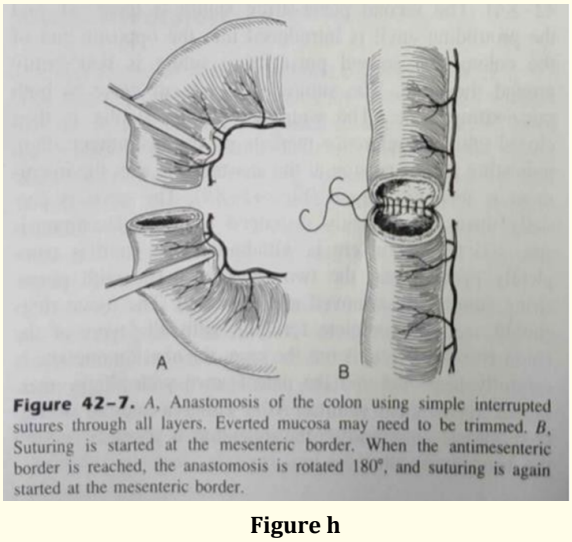

Figure 42–7. *A*, Anastomosis of the colon using simple interrupted sutures through all layers. Everted mucosa may need to be trimmed. *B*, Suturing is started at the mesenteric border. When the antimesenteric border is reached, the anastomosis is rotated 180°, and suturing is again started at the mesenteric border.

Figure h

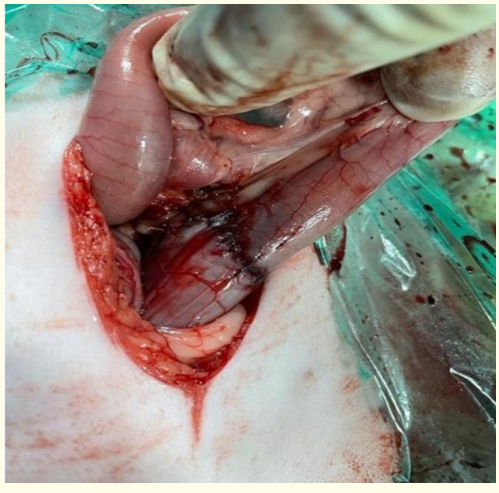

Figure i

Figure j

Radiograph post-surgery

Medications

- Inj Amoxicillin @ 4mg/kg IV
- Inj Conciplex @ 0.5mg/kg IV
- Inj DNS @10 ml/kg IV
- Inj Metrogyl @ 15mg/kg IV
- INJ Vitcofol @ 0.3 ml IM

Diet

- Till 10 days Post surgery : just given IV fluids
- Gradually: semisolid food was offered
- 15 days post surgery: sutures removed
- Followed by giving semisolid diet

Orally

- Syrup Starcoat 2.5 ml BID
- Syrup Vaav 2ml BID

Post operation

Figure k

After surgery, Oslo started his feed and water intake properly.

Figure l

Annex

Treatment and surgical approach for feline megacolon-case of persian cat oslo

Medical treatment

Hydration

- Oslo received IV fluids for hydration.
- DNS (Dextrose Normal Saline) at 10 ml/kg body weight.
- RL (Ringer's Lactate) at 10 ml/kg body weight.
- Inj Pan40 (Pantoprazole) at 1 ml/kg body weight.
- Inj conciplex (Vitamin B complex) at 0.5 mg/kg body weight.

Oral medications

- Oslo was orally advised to take Syp YesZyme (digestive enzyme) at 3 ml twice daily for 3 days
- Laxative treatment included Liquid paraffin at 3 ml twice daily for 3 days.

Rectal treatment

- Liquid paraffin enema administered rectally for 2 days.

Unsatisfactory outcome and surgical approach

Unsatisfactory fecal elimination

- Despite medical treatment, the amount of feces remained unsatisfactory, andconstipation persisted.

Surgical approach: subtotal colectomy

- Anesthesia induction with Inj Ketamine and Inj Sequil IM, along with Inj Buprenorphine SC.
- Endotracheal tube (size 2) insertion.
- Inj Propofol administered at 3 mg/kg IV for maintenance anesthesia.
- Isoflurane at 1% concentration in oxygen used during the procedure.

Subtotal colectomy procedure

- Subtotal colectomy performed, involving removal of 90%-95% of the colon.
- Ileocecal valve removal to prevent recurrence.
- Laparotomy findings indicated atonic and greyish necrosed colon.
- Subtotal colectomy conducted, along with ileo-colic valve removal and ileocolicanastomosis.

Surgical steps

- Surgical site preparation with shaving and antiseptic scrub.
- Patient positioned in complete dorsal recumbency with tied limbs.
- Continuous monitoring of heart rate, respiratory rate, temperature, and anesthesia via capnography.
- Ventral midline incision of 4 cm from the umbilicus.
- Colon exteriorized and clamps applied for resection.
- Diseased section resected after milk-away of feces.
- Clamps applied for diseased and non-diseased sections.
- Double ligation of blood vessels including mesenteric arteries and veins.
- Mesentery incision between doubly ligated vessels.
- Colon transection between clamps and cleaning of exposed intestine.
- Anastomosis of ileum and colon with Vicryl 3-0 sutures.
- Closure of mesenteric defect and abdominal muscles with Vicryl 2-0 sutures.
- Surgical site dressed and e-collar applied.

Post-surgery: medications and diet

- Oslo received post-surgery medications including Inj Amoxicillin, Inj Conciplex, Inj DNS, Inj Metrogyl, and INJ Vitcofol.
- Diet transitioned gradually from IV fluids to semi-solid food.
- Sutures removed 15 days post-surgery.
- Semisolid diet administered and supplemented with Syrup Starcoat and SyrupVaav orally.

Recommendations

The case of Oslo, the Persian cat diagnosed with megacolon, underscores the importance of comprehensive diagnosis, tailored medical intervention, and surgical management when dealing with feline gastrointestinal disorders. Based on this case, several recommendations can be drawnfor both veterinary practitioners and pet owners

- **Early Diagnosis and Veterinary Consultation:** Pet owners should promptly seek veterinary consultation if they notice any signs of gastrointestinal distress, such as chronic constipation, straining during defecation, excessive drooling, or weight loss. Early diagnosis allows for timely intervention and better treatment outcomes.
- **Routine Wellness Checks:** Regular wellness checks and health screenings for felinecompanions are crucial, especially for Persian cats and other susceptible breeds. These checks help identify potential health issues at an early stage, preventing them from progressing into more serious conditions.
- **Dietary Management:** Proper dietary management is essential in preventing andmanaging feline constipation. Dry food, which tends to be low in moisture, can contribute to constipation. Owners should consider incorporating wet food or increasing water intake to maintain healthy gastrointestinal function.

- **Tailored Treatment Plans:** Feline gastrointestinal disorders like megacolon require personalized treatment plans. Laxatives, digestive enzymes, and dietary adjustments may provide relief in some cases, but surgical intervention, like subtotal colectomy, might be necessary when conservative treatments prove ineffective.
- **Surgical Expertise:** Subtotal colectomy, as seen in Oslo's case, can offer a life- changing solution for cats suffering from megacolon. However, such procedures demand surgical expertise and thorough post-operative care. Veterinary practitioners should consider referrals to experienced surgeons when necessary.
- **Post-Operative Care:** Adequate post-operative care is critical for the success of surgical interventions. Owners must diligently follow the prescribed medications, dietary recommendations, and recovery guidelines. Close monitoring and regular follow-up visits with the veterinarian ensure proper healing and minimize complications.
- **Preventative Measures:** For susceptible breeds or cats with a history of gastrointestinal issues, preventative measures can play a significant role. Regularexercise, appropriate hydration, and a well-balanced diet are essential for maintaining optimal gastrointestinal health.

Conclusion

In conclusion, the case of Oslo, a Persian cat suffering from megacolon, underscores the significance of vigilant pet owner observation and timely veterinary intervention. The debilitating effects of megacolon, evident through chronic constipation and related symptoms, necessitated athorough diagnostic process, including blood tests and radiography. Despite initial medical management, the persistence of Oslo's condition prompted the adoption of a surgical approach – a subtotal colectomy. This intervent Ion successfully alleviated Oslo's discomfort and brought about a positive change in his postoperative recovery, as evidenced by improved feeding and water intake. This case highlights the importance of tailored treatment strategies, collaboration between pet owners and veterinary professionals, and the potential efficacy of surgical options inaddressing complex feline gastrointestinal disorders like megacolon.

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