



## Anoplasty Surgery in a Cat with Type I Atresia Ani

Büşra KİBAR KURT<sup>1</sup> , Ahmet GÜRSEL<sup>1\*</sup> , Eser ÇAKMAKÇI<sup>1</sup> 

<sup>1</sup>Aydın Adnan Menderes University, Faculty of Veterinary Medicine, Department of Surgery, 09016, Aydın, Turkey

### ABSTRACT

Atresia ani (AA) is a congenital defect that occurs when the anal membrane is not perforated and becomes permanent. However, it is worthwhile to note that it is not very common in cats. This case report consists of a 2-month-old male Persian kitten with Type I AA, who was brought to Aydın Adnan Menderes University Faculty of Veterinary Medicine Research and Practice Animal Hospital, Surgery Department with the complaint of defecation from a very narrow opening since birth. In the clinical examination of the patient, abdominal distention and swelling around the anus were detected. The patient was constantly taking a defecation position and had difficulty defecating. Contrast radiography was taken with the retrograde method, and the obstruction in the anus was detected resulting in the decision of performing an operation. The patient was placed on the table in the prone position and the narrowed part of the rectum was treated by resecting it with 360° anoplasty. Having lowered the rectal mucosa distally, the mucosa and skin were brought together, and then sutured with synthetic non-absorbable monofilament 4/0 suture material. Extra care was taken to preserve the external anal sphincter and anal sacs during dissection. The aim of surgical intervention is to maintain anorectal continuity as well as preserving the external anal sphincter and colon function. Surgical treatment should be promptly performed before chronic and prolonged distention. In the presented case, even though the kitten is 2 months old, successful results were obtained with surgical treatment after diagnosis.

*Keywords: Anoplasty, anorectal malformation, congenital anomaly, imperforated*

## Atresia Ani Tip I Bulunan Yavru Kedide Anoplasti Operasyonu

### ÖZET

Atresia ani (AA), anal membranın yıkılmayıp kalıcı hale gelmesiyle oluşan ve kedilerde nadir karşılaşılan doğmasal bir anomalidir. Bu olgu raporu, doğumundan itibaren çok dar bir açıklıktan zor dışkılama şikayetiyle Aydın Adnan Menderes Üniversitesi Veteriner Fakültesi Hayvan Hastanesi, Cerrahi Anabilim Dalına getirilen ve Atresia Ani Tip I teşhisi koyulan 2 aylık erkek İran kedisinde uygulanan anoplasti operasyonunu içermektedir. Hastanın klinik muayenesinde abdominal gerginlik ve anüs çevresinde şişkinlik saptandı. Hasta sürekli olarak dışkılama pozisyonu almasına rağmen dışkılama gücünü çekmekteydi. Retrograd yöntemle kontrast radyografi alınarak anüsteki daralma saptandı ve operatif tedaviye karar verildi. Hasta yüz üstü pozisyonda masaya yerleştirildi ve rektumun daralan kısmı 360° anoplasti ile rezeke edilerek tedavi edildi. Daha sonra, rektal mukoza distale doğru indirilip mukoza ve deri karşı karşıya getirilerek sentetik emilemeyen 4/0 monofilament dikiş materyaliyle dikildi. Diseksiyon sırasında eksternal anaf sfinkter ve anal keselerin korunmasına dikkat edildi. Cerrahi müdahalenin amacı anorektal devamlılığı sağlamak ve eksternal anal sfinkter ile kolon fonksiyonunu korumaktır. Kronik ve uzun süreli şişkinlik ile ilişkili kolonik atoni ya da megakolon ortaya çıkmadan önce cerrahi tedavinin yapılması gerekir. Sunulan olguda da her ne kadar 2 aylık yaşa gelmiş olsa da teşhis sonrası hızlıca cerrahi tedavi ile başarılı sonuç alınmıştır.

*Anahtar kelimeler: Anoplasti, anorektal malformasyon, imperfore, konjenital anomali*

\*Corresponding author: Ahmet GÜRSEL, Aydın Adnan Menderes University, Faculty of Veterinary Medicine, Department of Surgery, 09016, Aydın, Turkey. e-mail: vet.ahmetgursel@yandex.com. ORCID: 0000-0002-4201-2419

Received Date: 29.03.2022 – Accepted Date: 23.05.2022

DOI: 10.53913/aduveterinary.1095390

## Introduction

Congenital ano-rectal deformities are rarely encountered in small animals (Fossum, 2013; Pamuk et al., 2009). AA is a congenital defect in the ano-rectum that results in closure of the anal canal and/or abnormal routing of feces (Papazoglou & Ellison, 2012). It develops due to incomplete separation of the urorectal fold from the primitive cloaca or inability to perforate the anal membrane after anus formation (Vianna & Tobias, 2005) including congenital anal stenosis (Type I. Four types of AA have been described in small animals. In Type I

AA there is a congenital stenosis of the anus, whereas in Type II AA; the anal membrane is present and ends as a blind sac just cranial to the anus, with the rectum not punctured. In Type III AA; the anus is closed and the blunt end of the rectum ends more cranially than Type II. Lastly, in Type IV A; the anus and the last section of the rectum are developed normally, but the rectum ends in the pelvic canal in the form of a blind sac. Rectovaginal fistula (RVF) formation may occur in female cats in Type II AA (also rarely in Type III AA) (Figure 1) (Kurt & Turan, 2021). In this case report, the treatment with anoplasty surgery in a kitten with Type I AA will be described.

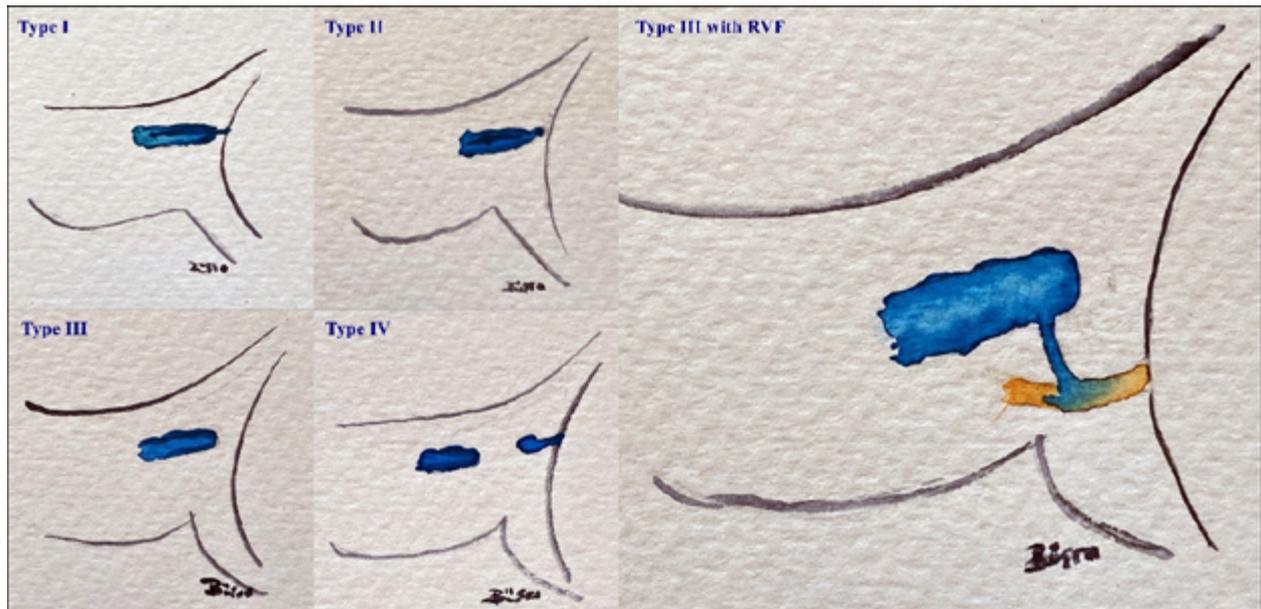


Figure 1. Types of AA, RVF: Rectovaginal fistula (Kurt & Turan, 2021).

## Case History and Clinical Findings

The study consists of a 2-month-old Persian kitten with a body weight of 1 kilogram who was brought to Aydın Adnan Menderes University Faculty of Veterinary Medicine Research and Practice Animal Hospital, Surgery Department with the complaint of defecation through a very narrow opening since birth. In the clinical examination of the patient, abdominal distention,

swelling around the anus, and a vulva-like cleft between the anus and the penis were detected (Figure 2). The patient took a defecation position and had difficulty defecating. Dense stool was detected in the intestines at the laterolateral oriented abdominal X-ray (Figure 4). Anal stenosis was detected by retrograde contrast radiography and surgical intervention was decided (Figure 3).



Figure 2. Vulva-like cleft (arrow) between anus and penis.

Cephalosporin (Sef 250 mg/5ml oral suspansiyon®, 20 mg/kg, oral, twice a day, Gensenta İlaç Sanayi ve Ticaret A.Ş., Turkey) and nutritional support (Viyo Recuperation Cat®, 30 ml, daily, Vito International, Belgium) was prescribed to be administered for the patient 3 days before the operation. The patient was general anesthetized with xylasin (Xylazin Bio 2%®, 1 mg/kg, intramuscularly, Bioveta PLC, Czech Republic) and ketamine (Ketasol 10%®, 11 mg/kg, intramuscular, Richter Pharma AG, Austria). The patient was placed in the sternal position, and then the narrowed part of the rectum was resected with 360° anoplasty. The anal opening was widened by suturing the rectal mucosa with simple separate sutures and a 4-0 monofilament polypropylene suture (Atramat®, Mexico) to the mucosa (Figures 5 and 6). Cephalosporin (Sef 250 mg/5ml oral suspansiyon®, 20 mg/kg, oral, twice a day, Gensenta



Figure 3. Indirect radiography, anal stenosis (arrow).



Figure 4. Fecal impaction on radiography.

ilaç Sanayi ve Ticaret A.Ş., Turkey) was used in the postoperative 5-day period. Nutritional support (Viyo Recuperation Cat®, Vito International, Belgium) and kitten wet food were given as postoperative nutrition (N&D Prime Chicken & Pomegranate Kitten®, Farmina, Italy).

No problem was detected about defecation in the postoperative 25<sup>th</sup> day control.

### Discussion

AA requires immediate treatment. As AA usually goes unnoticed, kittens die soon after birth. It can be diagnosed by checking the defecation of kittens after birth or in suspicious cases by detecting fecal accumulation inside the intestines by radiography.

In Type I AA, the owner of the patient may state in her

or his anamnesis that there is difficulty in defecation and straining after the kitten has been weaning. Applications such as special diets, laxatives, and enemas fail. On physical examination, there is tenderness and an anal reflex. Definitive diagnosis can be achieved by radiography (Prassinis et al., 2003). Abdominal radiography can be used to evaluate the degree of colonic dilatation and rectum. Studies have reported that the diagnosis of Type I AA can also be maintained by ultrasonography and the length of the narrowed region can be determined by this method. For evaluating and conducting anatomic typing of AA in small animals, computed tomography and magnetic resonance may also be useful (Ellison & Papazoglou, 2012). Based on clinical examination and radiography findings, the patient was diagnosed with Type I AA. The diagnosis was confirmed by surgery.

The prognosis of Type II and Type III AAs are worse than

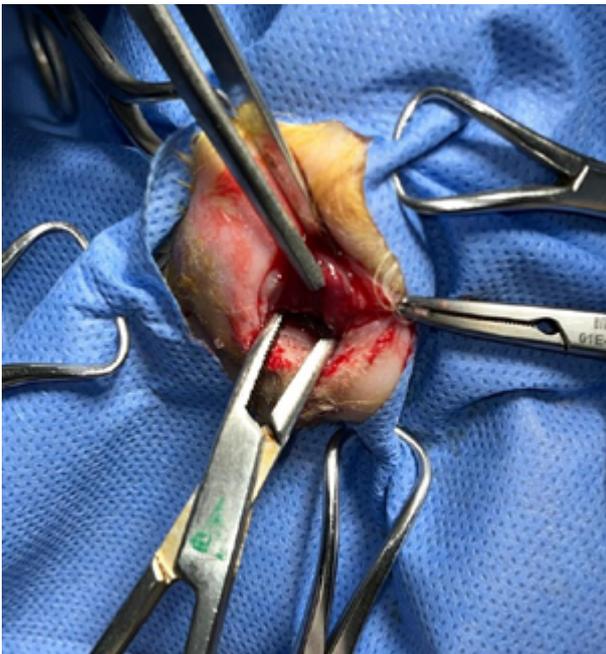


Figure 5. Widening of the anal opening.



Figure 6. Postoperative anal opening.

in Type I since the colonic dilatation develops (Prassinos et al., 2003). In Type I and Type III AA cases, there is no defecation so surgical treatment is required (Ellison & Papazoglou, 2012). In this study, the kitten survived because faecal output was achieved through a narrow opening. Enema was applied in a private clinic for a long time, but it could not be treated because the opening was narrow and it was transferred to Aydın Adnan Menderes University Faculty of Veterinary Medicine Research and Practice Animal Hospital, Surgery Department. Studies report that deaths can be prevented in cases of atresia ani by early diagnosis and surgical treatment (Aslan et al., 2009). The goal of the treatment is to maintain anorectal continuity, preserve the external anal sphincter and colon function. Surgical treatment should be promptly performed before colonic atony or megacolon occurs, associated with the chronic and prolonged distention (Prassinos et al., 2003). No sign of megacolon was detected in the indirect radiographs.

There is not much literature about the treatment of Type I AA in cats. In Type I AA, the stricture can be treated by anoplasty or balloon dilatation (Papazoglou & Ellison, 2012). In the presented study, successful treatment was achieved with the anoplasty operation. As postoperative nutritional support; Viyo Recuperation® (30 ml daily, Viyo Recuperation Cat, Viyo International, Belgium) was prescribed, which is rich in vitamins, minerals, amino acids, fatty acids and also contains glutamine, arginine, taurine and omega-3 fatty acids.

### Conclusion

Cases of atresia ani are often overlooked due to misdiagnosis, delayed treatment, or lack of knowledge about treatment, and patients die or are euthanized. Therefore, few cases are reported in the literature. In this case, diagnosis and surgical correction in Type I AA were successful.

### Conflict of Interests

The authors declare that they have no conflicts of interests.

### References

- Aslan, L., Karasu, A., Gençcelep, M., Bakir, B., & Alkan, İ. (2009). Evaluation of Cases with Congenital Anorectal Anomalies in Ruminants. *Yüzüncü Yıl Üniversitesi, Veteriner Fakültesi Dergisi*, 20(1), 31–36.
- Ellison, G. W., & Papazoglou, L. G. (2012). Long-term results of surgery for atresia ani with or without anogenital malformations in puppies and a kitten: 12 cases (1983–2010). *Journal of the American Veterinary Medical Association*, 240(2), 186–192. <https://doi.org/10.2460/javma.240.2.186>
- Fossum, T. W. (2013). *Small Animal Surgery - 4th Edition*.
- Kurt, B. K., & Turan, G. (2021). Successful treatment of type III atresia ani and rectovaginal fistula in a kitten. *Vlaams Diergeneeskundig Tijdschrift*. <https://doi.org/10.21825/VDT.V90I4.20712>
- Pamuk, K., Sarıtaş, Z. K., Demirkan, I., & Korkmaz, M. (2009). Afyon Kocatepe Üniversitesi Veteriner Fakültesi Cerrahi Kliniğine Getirilen Hastaların Değerlendirilmesi: 1090 olgu (2001-2008). *Kocatepe Veterinary Journal*, 2(1), 29–33.
- Papazoglou, L. G., & Ellison, G. W. (2012). Atresia Ani in Dogs and Cats. *A Bird's-Eye View of Veterinary Medicine*. <https://doi.org/10.5772/30991>

Prassinos, N. N., Papazoglou, L. G., Adamama-Moraitou, K. K., Galatos, A. D., Gouletsou, P., & Rallis, T. S. (2003). Congenital anorectal abnormalities in six dogs. *Veterinary Record*, 153(3), 81–85. <https://doi.org/10.1136/vr.153.3.81>

Vianna, M. L., & Tobias, K. M. (2005). Atresia Ani in the Dog: A Retrospective Study. *Journal of the American Animal Hospital Association*, 41(5), 317–322. <https://doi.org/10.5326/0410317>