

# ANOGENITAL CLEFT IN A BITCH – A CASE REPORT

Ivan Fasulkov\*, Anatoli Atanasov, Anton Antonov

Department of Obstetrics, Reproduction and Reproductive Disorders, Faculty of Veterinary Medicine, Trakia University, 6000 Stara Zagora, Bulgaria

\*Corresponding author, E-mail: i.fasulkov@gmail.com

**Summary:** A female 4-month-old Pug dog was referred to the Small Animal Clinic of the Faculty of Veterinary Medicine, Trakia University, Stara Zagora with a history of difficult and painful urination, reddening and swelling of external genitalia since one month of age. The owner had noticed the anomaly several days after the birth of the puppy, but had not sought medical advice as there were no signs of discomfort. The physical examination did not reveal any deviations from the normal state. The inspection of external genitalia showed an incomplete occlusion of the skin between the dorsal commissure of the vulva and the anus, exposing directly the swollen and hyperaemic vaginal vestibule and clitoris. The diagnosis of congenital incomplete closure of the anogenital space (anogenital cleft) was made and surgical repair of the anomaly was performed. The anomaly was corrected surgically by creating a dorsal vestibular wall by means of inverted V-shaped perineoplasty. An inverted V-shaped incision was made on the skin between the anus and dorsal commissure of the vulva, followed by removal of the tissue between the vestibular mucosa and the skin edge. The wall of the vaginal vestibule was closed by interrupted absorbable 2-0 polyglycolic acid sutures and the skin – with interrupted non-absorbable sutures. The outcome of the operation was excellent, without any postoperative complications or other genital defects. The follow-up examination performed 5 month later showed a normal position of the external genitalia and the anogenital space.

**Key words:** bitch; anogenital cleft; perineoplasty

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## Introduction

Congenital anomalies in the region of the anus, rectum and external genitalia are observed mainly in dogs and cats (1, 2, 3, 4, 5). These pathological conditions are rarely encountered in the clinical practice but nevertheless, they are important as in most cases, they are life-threatening for neonate animals (2, 3).

Congenital anogenital anomalies are mainly seen in dogs and could be present as anal stenosis, atresia ani, anus vestibularis, anogenital cleft,

cloaca and rectogenital or rectourethral fistula (2, 4, 5, 6, 7, 8, 9, 10, 11, 12).

The congenital lack of anogenital space is an incomplete closure of the skin fold between the anus and the dorsal commissure of the vulva. This anomaly is called anovulvar (13, 14), anovaginal (15, 16), anogenital (11), vulvovaginal (12) or vulvovestibular cleft (17).

The anogenital cleft is a rare congenital anomaly in dogs and cats due to incomplete closure of dorsal urogenital folds (7, 17, 18). An incomplete occlusion of the skin between the dorsal vulvar commissure and the anus is observed, exposing the bottom of the vaginal vestibule and the clitoris. This defect could be also seen in hermaphroditism (19).

## Case history

A female 4-month-old Pug dog was referred to the Small Animal Clinic of the Faculty of Veterinary Medicine, Trakia University – Stara Zagora with a history of difficult and painful urination, reddening and swelling of external genitalia since one month of age. The owner had noticed the anomaly several days after the birth of the puppy, but had not sought medical advice as there were no signs of discomfort. There were no other littermates with the same disorder, the animal had not suffered from other illnesses and had not been treated on any occasion.

The physical examination did not reveal any deviations from the normal state. The puppy was female, 4-month-old, weighed 6.7 kg, with preserved appetite and normal values of rectal temperature, respiratory and heart rates. The inspection of external genitalia showed an incomplete occlusion of the skin between the dorsal commissure of the vulva and the anus, exposing directly the swollen and hyperaemic vaginal vestibule and clitoris (Fig. 1).

On the basis of summarized data from the history and physical examination, the diagnosis of congenital incomplete closure of the anogenital space (anogenital cleft) was made and surgical repair of the anomaly was performed.

The operation site was aseptically prepared. Premedication was done by subcutaneous injection of 0.04 mg/kg atropine sulfate (Atropinum sulfuricum; Sopharma; Bulgaria). The induction of anaesthesia was done by intravenous application of the combination 0.4 mg/kg diazepam (Diazepam; Sopharma; Bulgaria) and 10 mg/kg ketamine (Ketaminol 10; Intervet; Holland). After endotracheal intubation, inhalation anaesthesia was maintained with isoflurane (Forane; Abbott Laboratories Ltd; United Kingdom). The surgical correction of this congenital defect consisted in inverted V-shape perineoplasty described by Wilson and Clifford (7) and Burt and Smith (20). An inverted V-shaped incision was made on the skin between the anus and dorsal commissure of the vulva, followed by removal of the tissue between the vestibular mucosa and the skin edge. The wall of the vaginal vestibule was closed by interrupted absorbable 2-0 polyglycolic acid sutures (Marlin; Catgut GmbH; Markneukirchen) (Fig. 2) and the skin – with interrupted non-absorbable Vitalon No 0 sutures (Dr Hammer & Co. GmbH, Hamburg) (Fig. 3).

Post operative treatment consisted in intramuscular administration of 30 mg/kg Lincomycin/Spectinomycin 5/10 (Alfasan International; Holland) for 5 days and 2 mg/kg ketoprofen (Ketofen; Merial; Lion; France)



**Figure 1:** Appearance of the patient by the time of its referral at the clinic – incomplete closure of the anogenital space, hyperaemia and tissue swelling



**Figure 2:** Closure of the vaginal vestibular wall by simple interrupted sutures





**Figure 3:** Final appearance of the anogenital space after the surgical correction



**Figure 4:** Patient's appearance 5 months after the surgery – normal position of external genitalia and of anogenital space

for 3 days. A protective Elizabethan collar was placed. Skin sutures were removed by the 10<sup>th</sup> day after the defect repair and by that time, the recovery was evaluated as good. The follow-up examination performed 5 months later showed a normal position of the external genitalia and the anogenital space (Fig. 4).

## Discussion

This case report described a rare congenital anogenital anomaly in the dog.

According to White (19), the congenital incomplete occlusion of the skin between the anus and dorsal vulvar commissure is related to staining of the clitoris and the vaginal vestibule with faeces and exposure of these anatomical structures to external influences. Thus, this defect requires a surgical repair by the inverted V-shaped perineoplasty technique (7, 18, 19, 20).

Another possible complication of this defect is vaginal hyperplasia (13) and that is why we performed the surgical correction before the first oestrus of the patient.

In this puppy, the operative intervention using inverted V-shaped perineoplasty gave an excellent result, was performed easily and without post operative complications.

The choice of this technique for correction of the described defect relied upon the expected good effect consisting of prevention of contamination and infection of external genitalia and the excellent cosmetic effect (17).

The prognosis for the congenital incomplete occlusion of the anogenital space is good when treated surgically and timely similarly to reports of other authors (7, 13, 20).

## References

1. Niebauer GW. Rectum, anus, and perianal and perineal regions. In: Harvey CE, Newton CD, Schwartz A, eds. Small animal surgery. Philadelphia: J. B. Lippincott, 1990: 381–402.
2. Matthiesen DT, Marretta SM. Diseases of the anus and rectum. In: Slatter D, ed. Textbook of small animal surgery. 2nd ed. Philadelphia: W. B. Saunders, 1993: 627–45.
3. Niebauer GW. Rectoanal disease. In: Bojrab MJ, ed. Disease mechanisms in small animal surgery. 2nd ed. Philadelphia: Lea & Febiger, 1993: 271–84.
4. Hoskins JD, Dimski DS. The digestive system. In: Hoskins JD, ed. Veterinary pediatrics: dogs and cats from birth to six months. 2nd ed.

Philadelphia: W. B. Saunders, 1995: 133–87.

5. Mahler S, Williams G. Preservation of the fistula for reconstruction of the anal canal and the anus in atresia ani and rectovestibular fistula in 2 dogs. *Vet Surg* 2005; 34: 148–52.

6. Hare WSD. Anus vestibularis in a young bitch. *Can J Comp Med* 1959; 23 (9): 278–81.

7. Wilson CF, Clifford DH. Perineoplasty for anovaginal cleft in a dog. *J Am Vet Med Assoc* 1971; 159: 871–5.

8. Seim HB III. Diseases of the anus and rectum. In: Kirk RW, ed. *Current veterinary therapy IX*. Philadelphia: W. B. Saunders, 1986: 916–21.

9. Marretta SM, Matthiesen DT. Problems associated with the surgical treatment of diseases involving the perineal region. *Probl Vet Med* 1989; 1: 215–42.

10. Kochankov D, Vassilev N, Parvanov P. Diseases of the genitals in dogs and cats. *Stara Zagora: Aria*, 1998: 150.

11. Prassinis NN, Papazoglou LG, Adamama - Moraitou KK, et al. Congenital anorectal abnormalities in six dogs. *Vet Rec* 2003; 153: 81–5.

12. Romagnoli S, Schlafer DH. Disorders of sexual differentiation in puppies and kittens: a diagnostic and clinical approach. *Vet Clin North Am Small Anim Pract* 2006; 36: 573–606.

13. Mostachio GQ, Vicente WRR, Cardilli DJ, et al. Anovulvar cleft and vaginal prolapse-hyperplasia in a bitch. *J Small Anim Pract* 2007; 48: 713–5.

14. Lorenz M, Mark Neer T, DeMars P. *Small animal medical diagnosis*. 3rd ed. Ames: Wiley-Blackwell, 2009: 329.

15. Holt P. Anal and perianal surgery in dogs and cats. In *Pract* 1985; 7 (3): 82–9.

16. Hosgood G, Hoskins JD. *Small animal pediatric medicine and surgery*. Oxford: Butterworth Heinemann, 1998: 103.

17. Wykes PM, Olson PN. Vagina, vestibule, and vulva. In: Slatter D, ed. *Textbook of small animal surgery*. 3rd ed. Vol. 2. Philadelphia: W. B. Saunders, 2003: 1502–10.

18. Aronson L. Rectum and anus. In: Slatter D, ed. *Textbook of small animal surgery*. 3rd ed. Vol. 2. Philadelphia: W. B. Saunders, 2003: 682–6.

19. White RN. Surgery of the genital tract. In: Simpson G, England G, Harvey M, eds. *Manual of small animal reproduction and neonatology*. Gloucester: British Small Animal Veterinary Association, 1998: 179–80.

20. Burt TJ, Smith CW. Vulvovaginal cleft in a dog. *J Am Anim Hosp Assoc* 1975; 11: 774–7.

## ANOGENITALNA RAZPOKA PRI PSICI – KLINIČNI PRIMER

I. Fasulkov, A. Atanasov, A. Antonov

**Povzetek:** Na kliniko za male živali na Veterinarski fakulteti Univerze Trakia v Stari Zagori je bila napotena 4-mesečna psička pasme pug z znaki težkega in bolečega uriniranja, pordelosti in otekanja zunanjih spolovil, ki so se pojavljali od enega meseca starosti naprej. Lastnik je opazil težave nekaj dni po rojstvu mladiča, vendar ni poiskal veterinarske pomoči, ker pri psički ni opazil nobenih znakov nelagodja. Fizični pregled ni pokazal nobenih odstopanj od normalnega stanja. S pregledom zunanjih spolovil smo ugotovili nepopolno zaporo dorzalnega stika med nožnico in zadnjikom, izpostavljeno, oteklo in pordelo nožnično ustje in klitoris. Postavili smo diagnozo prirojenega nepopolnega zaprtja anogenitalnega prostora in nepravilnost kirurško popravili. Dorzalno steno nožničnega ustja smo naredili s perineoplastično operacijo v obliki črke V. Na koži med zadnjikom in dorzalnim robom nožnice smo naredili zarezo v obliki narobe obrnjene črke V, nato smo odstranili tkivo med robom kože in sluznico ustja. Steno nožničnega ustja smo zašili s prekinjenim šivom z absorptivnim materialom iz 2-0 poliglikolične kisline, kožo pa s prekinjenim šivom z neabsorptivnim materialom. Operacija je popolnoma uspela, psička ni imela po operaciji nikakršnih komplikacij. Po 5 mesecih smo na kontrolnem pregledu ugotovili normalen položaj zunanjih spolovil in anogenitalnega prostora.

**Ključne besede:** psica; anogenitalna razpoka; perineoplastika