

Vulval discharges in bitches

Deepthi V¹, Pravin Maruti Madabhavi², Gobika S³, M Bagavathi⁴

¹PhD Scholar, Division of Pharmacology & Toxicology, ICAR- Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, ²Assistant professor, Division of Pharmacology & Toxicology, Shourabh College of Veterinary Science, Hindaun city, Rajasthan, ³M.V.Sc, Animal Nutrition, TANUVAS, ⁴Assistant Professor, Animal husbandry Department, Vanavarayar Institute of Agriculture, Pollachi, Tamilnadu.

Corresponding author's email: deepthi99v@gmail.com

DOI: <https://doi.org/10.5281/zenodo.19653238>

ABSTRACT

Vulvar discharges in bitches arise from the uterus, vagina, vestibule, vulva, or urinary tract and occur in both intact and neutered animals, classified primarily by colour (greenish-black, serosanguineous, straw yellow, sanguineous, scanty mucoid, purulent), smell, and volume to differentiate physiological from pathological causes. Physiological discharges include proestrus spotting, Oestrus changes, lochia postpartum (greenish due to uteroverdin, lasting up to 3 weeks) and dioestrus mucoid secretions, while pathological ones like pyometra (diestrus purulent, hormonally mediated by progesterone after endometrial hyperplasia), metritis (postpartum foul reddish-brown), vaginitis (mucopurulent), subinvolution of placental sites (SIPS, prolonged sanguineous beyond 6 weeks postpartum), split heat (prolonged serosanguineous in young bitches), and transmissible venereal tumour (TVT, haemorrhagic with cauliflower masses) require targeted diagnostics including vaginal cytology (VEC), vaginoscopy, ultrasonography, and radiography. Diagnosis integrates age, history (e.g., recent whelping, breeding, oestrus), and clinical signs; treatments range from supportive care and antibiotics for infections to ovariectomy for pyometra/SIPS or chemotherapy (vincristine 0.5-0.7 mg/m² IV weekly) for TVT, emphasizing early intervention to prevent sepsis or anaemia.

INTRODUCTION

Vulvar discharge in bitches signals diverse reproductive and urinary conditions, demanding prompt veterinary evaluation to distinguish normal oestrous cycles from life-threatening infections like pyometra or metritis (Feldman & Nelson, 2003; Johnston *et al.*, 2001). These discharges, noted in intact or spayed females across ages, originate from uterine (e.g., lochia, pyometra), vaginal (vaginitis, TVT), or urinary sources, classified by colour for efficient triage: greenish-black (lochia or infection), serosanguineous (proestrus, split heat, abortions), straw yellow (oestrus), sanguineous (SIPS, neoplasms, TVT), scanty mucoid (dioestrus, late pregnancy), and purulent (pyometra, metritis, vaginitis). As a common presentation in veterinary practice, understanding etiology—hormonal (progesterone-driven immunosuppression in dioestrus), infectious (ascending bacteria from vagina), traumatic or neoplastic guides diagnostics like VEC (e.g., >80% cornified cells in oestrus, neutrophils in dioestrus/vaginitis), imaging, and history e.g., postpartum timing for metritis (Root Kustritz, 2008).

Greenish-Black Discharge

Greenish-black discharge typically appears in bitches nearing or following parturition, manifesting as lochia—a normal postpartum vulvar flow of foetal fluids and placental remnants tinted by the pigment uteroverdin after placental separation (Johnston *et al.*, 2001). This discharge peaks in volume during the first week and may persist up to three weeks or longer, gradually diminishing in amount while shifting from green to red then brown; it remains physiological if non-malodorous and non-profuse, but pus-streaked or foul lochia signals uterine infection requiring intervention (Root Kustritz, 2008).

Serosanguineous Discharge

Serosanguineous discharge arises from proestrus (lasting under 10 days as spotting from oestrogen-stimulated endometrial hyperaemia via erythrocyte diapedesis, with pheromones like methyl hydroxy benzoate attracting males), split heat (prolonged oestrogen in young bitches causing failed ovulation, split into behavioural first half, 4-8 week

anoestrus, then fertile oestrus with progesterone below 2 ng/ml), trauma, neoplasms, coagulopathies, or abortions often infectious, yielding mixed red-green-brown from RBC breakdown (Pretzer, 2008). In proestrus, vaginostomy reveals oedematous pink-white mucosal folds with fluid, vulva turgid and warm, and vaginal cytology shows parabasal/intermediate cells plus RBCs/neutrophils; ovarian neoplasia, though rare, presents in older dogs as palpable/radiographic abdominal masses or ultrasonographic irregularities from epithelial origins like adenocarcinoma.

Straw Yellow Discharge

Straw yellow discharge characterizes oestrus, accompanied by behavioural attractivity and vaginal cytology dominated by over 80% superficial cornified cells without neutrophils. Oestrogen withdrawal shrinks oedematous vaginal folds, reducing angulations in vaginostomy (Feldman & Nelson, 2003).

Sanguineous Discharge

Sanguineous discharge links to subinvolution of placental sites (SIPS, common in primiparous bitches under 3 years with prolonged postpartum bleeding beyond 6 weeks, no systemic signs, normal labs but syncytial trophoblast-like cells on cytology and enlarged placental sites ultrasonographically; self-resolves, monitored for anaemia, prevented by post-whelping oxytocin), uterine/vaginal/urinary neoplasms, cystitis/calculi, or transmissible venereal tumour TVT—a benign coitally transmitted reticuloendothelial neoplasm in young adults with 57-64 chromosomes, causing haemorrhagic cauliflower masses on genitalia, friable bleeding, anaemia; cytology shows round cells with vacuoles; treated via weekly vincristine 0.5-0.7 mg/m² IV for 2-8 doses, monitoring WBC (Feldman & Nelson, 2003).

Scanty Mucoid Discharge

Scanty mucoid discharge occurs in dioestrus early phase with mucoid-to-purulent flow, cytology featuring neutrophils amid intermediate/parabasal cells under progesterone-induced immunosuppression) or late pregnancy (cervical plug liquefaction near whelping (Johnston *et al.*, 2001).

Purulent Discharge

Purulent discharge in bitches is most frequently associated with uterine infections such as pyometra and postpartum metritis or with vaginitis (Smith, 2006). Pyometra generally develops during

dioestrus when progesterone stimulates cystic endometrial hyperplasia and suppresses uterine immune defences, facilitating bacterial colonization (Pretzer, 2008). Metritis occurs after parturition due to bacterial infection of the uterus, commonly associated with retained placenta or foetal tissue (Root Kustritz, 2008). Vaginitis may be primary or secondary and often presents with mucopurulent discharge accompanied by vulvar licking and pollakiuria (Feldman & Nelson, 2003).

DIAGNOSIS BY HISTORY

Diagnosis hinges on bitch age/history: puppy vaginitis <6 months, self-limiting mucoid resolving at first heat via exam/vaginostomy; cycling bitch post-oestrus bloody 1-8 weeks: split heat via cytology; 8-10 weeks purulent: pyometra persistent weeks physiological pro/oestrus or follicular cysts via ultrasound. bacterial-heavy normal dioestrus or metritis/pyometra/vaginitis; recent breeding sanguineous day 30: split heat/abortion; purulent: pyometra/vaginitis); whelping egg-white: plug; black-green: separation; bloody shock: rupture); recent whelp purulent/fever: metritis; green >12h: retained; haemorrhage: tears/coagulopathy; spayed (serosanguineous: ovarian remnant/oestrogen; purulent: vaginitis/stump pyometra. Aids include vaginal exfoliative cytology, vaginostomy, ultrasound, radiography (Wheeler, 2011).

CONCLUSION

Accurate diagnosis of vulvar discharges relies on integrating bitch age, breeding/whelping history, discharge characteristics, and aids like VEC, vaginostomy, ultrasound (e.g., enlarged uterus in pyometra/metritis, large placental sites in SIPS), and radiography, enabling differentiation of self-limiting puppy vaginitis from pyometra or TVT. Physiological discharges (proestrus <10 days, lochia <3 weeks non-foul) warrant monitoring, while pathological cases demand tailored therapy—antibiotics/fluids/oxytocin/PGF2 α for metritis, ovariohysterectomy for pyometra/SIPS, vincristine for TVT—to avert complications like sepsis, anemia, or fertility loss, underscoring ovariohysterectomy's role in prevention. Early owner recognition and intervention optimize outcomes in canine reproductive health.

REFERENCES

- Feldman, E. C., & Nelson, R. W. (2003). *Canine and feline endocrinology and reproduction* (3rd ed.). Saunders.
- Johnston, S. D., Root Kustritz, M. V., & Olson, P. N. (2001). *Canine and feline theriogenology*. WB Saunders.
- Pretzer, S. D. (2008). Bacterial and protozoal causes of pregnancy loss in the bitch and queen. *Theriogenology*, 70(3), 320–326.
- Root Kustritz, M. V. (2008). Diestrual vulvar discharge in a bitch. *Journal of the American Veterinary Medical Association*, 232(6), 841–843.
- Smith, F. O. (2006). Canine pyometra. *Theriogenology*, 66(3), 610–612.
- Wheeler, R. (2011). Vulvar discharge. In S. D. Johnston et al. (Eds.), *Small animal theriogenology*. Elsevier.