

## Scientific Report

# A rare case of recurrent cystic Gartner's duct in a crossbred heifer and its successful management

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## Summary

Description of a rare recurrent Gartner's duct cyst associated with yeast infection in a crossbred heifer is reported. The recurrence was caused by uncontrolled yeast infection that showed *in vitro* sensitivity to oxytetracycline. Administration of local clotrimazole and systemic oxytetracycline as per recommended therapeutic dose regime resulted in complete recovery.

**Key words:** Recurrent vaginal cyst, Crossbred heifer, Kashmir

## Introduction

Cyst of Gartner's duct is a very rare condition in animals (Roberts, 1998). Gartner's ducts are vestiges of primitive mesonephric ducts located on each side of the vaginal floor beneath the mucosal epithelium and are normally difficult to locate (Roberts, 1998). They are detectable microscopically as discontinuous ducts (lined by simple epithelium) in cranial vagina. Obstruction of the duct follows trauma or severe inflammation (necrotic vaginitis) at the time of breeding or calving. They may also develop due to chlorinated naphthalene poisoning and ovarian follicular cysts. With a lesser degree of dilation, the cysts are more readily palpable than visible. However, in cases with well-developed cysts, they are clearly visible through the elevated and thinned vaginal wall (Schlafer and Miller, 2007), although these cysts generally do not result in infertility and sterility. But, some cysts close to cervical canal, particularly the larger ones may cause

infertility by blocking the path of sperms to the cervix during natural service and artificial insemination. Successful treatment of simple cyst of Gartner's duct was reported by some workers (Ghuman *et al.*, 2008; Prabhabaran *et al.*, 2008). Here we wish to report an unusual case of recurrent vaginal cyst in a crossbred heifer from a rural area of temperate Kashmir valley (India).

## Case history, observation and treatment

A crossbred Jersey maiden heifer, aged 3 years and weighing 160 kg, was presented with a history of manifesting discomfort, restlessness and kicking the abdomen with hind legs for 8 days. The symptoms had started immediately after natural service. Per-rectal examination revealed an oval bulge (~12 cm length, 5 cm diameter) close to and in contact with the cervix. Both uterine horns revealed increased tonicity. Analgesia of the perineal area was achieved

by 5 ml of 2% lignocaine hydrochloride as caudal epidural block. Vaginal speculum lubricated with sterile vaseline was introduced gently. The surface of the swelling was examined and carefully given a stab incision using a B.P blade (No: 11). Approximately 1.0 liter thick, viscous, sticky, whitish mucus drained out freely. Ten ml of the evacuated material was collected in a sterilized test tube for further analysis. On the basis of the character of the bulge and absence of cells in the collected sample (on microscopic evaluation), the condition was diagnosed as a vaginal cyst. After evacuation of accumulated fluid, 5 ml of lugol's iodine (2%) was infused into its cavity. Residual fluid evacuation, flushing of the cystic cavity with 0.2% lugol's iodine, intrauterine infusion of Cflox TZ IU (Ciprofloxacin hydrochloride 125 mg + Tinidazole 150 mg per 5 mL; Intas Pharmaceutical Ltd., India), parental antibiotic (Enrofloxacin® 7 mg/kg body weight i.m.) and analgesic (Meloxicam 0.2 mg/kg i.m.) were continued daily for 5 days. Vaginal speculum examination, 10 days after initiation of the treatment, revealed normal cervical os and vagina free of any bulge or fluid accumulation.

Twenty days later the animal was again presented with symptoms of discomfort and tenesmus for 3 days. Per-rectal examination revealed recurrence of the cyst (~10 cm long, 4 cm diameter); however, this time the uterine horns were atonic and flaccid. Cystic fluid was again evacuated aseptically under epidural analgesia. The fluid sample was subjected to bacterial and fungal cultural examination along with antibiotic sensitivity test. 500 mL of cystic fluid was evacuated this time and the cystic cavity flushed with 0.2% lugol's iodine. Laboratory findings revealed presence of yeast in the fluid that was highly sensitive to oxytetracycline. Subsequently infusion of 2% clotrimazole (Candid-v gel, 15 gm) into the vaginal and cystic cavity was continued for 12 days along with systemic administration of oxytetracycline (10 mg/kg body weight i.m. for 7 days). No recurrence was detected at 3 consecutive examinations, 15-20 days apart and also four months later when the animal was presented for artificial insemination.

## Discussion

Perusal of the available literature indicates identification of cystic Gartner's duct in cows during abattoir surveys (Perkins *et al.*, 1954; Alam, 1984). Hatipoglu *et al.* (2008) recorded 1.07% cystic Gartner's duct from 1113 samples collected from an abattoir at Konya, Turkey. The incidence figures of this condition in live cows has not been reported to date. According to McEntee and Nielsen (1976), cystic Gartner's ducts are very rare in virgin females but are seen quite frequently in pleuriparous cows with vaginal infections. The present case puts on record the first case of Gartner's duct cyst and its successful treatment in a live heifer.

Cyst of the Gartner's duct is occasionally encountered in cattle on the floor of the vagina at 4 or 8 o'clock position (Alam, 1984). Although the condition is usually associated with cystic ovary, vaginitis and chlorinated naphthalene poisoning (Noakes *et al.*, 2000; Schlafer and Miller, 2007; Ghuman *et al.*, 2008), it is difficult to ascertain the exact etiology of the condition (Hatipoglu *et al.*, 2008). This gland is very sensitive to estrogens, responding to secretion of thin mucus and hyperplasia of the ductal epithelium. Gross exaggeration of responses in hyper-estrogenism accounts for the cystic development. Large retention cysts also follow inflammatory stricture of the short excretory duct. Abscessation may follow localization of infection in the cysts (Schlafer and Miller, 2007). This condition may also lead to recurrent vaginal prolapse due to continuous irritation (Ghuman *et al.*, 2008). Cystic Gartner's duct accompanied by cystic ovary was reported earlier (McEntee, 1990; Ghuman *et al.*, 2008). In the present case, ovaries were non cystic. Possibly forceful intromission of penis during coitus along with vaginal infection has resulted in development of the vaginal cyst (McEntee, 1990). Recurrence of the cyst in our case resulted from infection caused by yeast that was diagnosed and managed successfully.

It can be concluded that recurrent cystic Gartner's duct in cattle resulting from yeast

infection can be effectively controlled by administration of local clotrimazole and systemic oxytetracycline.

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