

Short Communication

PYOMETRA IN A JERSEY CROSSBRED COW - DIAGNOSIS AND TREATMENT

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ABSTRACT: The present report focuses on the diagnosis of pyometra and salpingitis by the use of transrectal ultrasonography and its successful treatment with administration of PGF₂α at 72 hr intervals.

Key words: Bilateral pyosalpinx, Jersey crossbred cow, PGF₂α, Pyometra, Transrectal ultrasonography.

Pyometra is characterized by a pus filled uterus in the presence of a corpus luteum (CL), a closed cervix and failure to express estrus (Sheldon *et al.* 2006). However, cervical lumen is not completely occluded and the purulent discharge can be noticed in the vagina when the animal lies down, urinates or defecates in some cases (Praveen Raj *et al.* 2015). Also, pyometra can be considered as a sub-set of endometritis where cows ovulate in the presence of a contaminated uterus (Chapwanya 2008). An increased amount of pathogenic bacteria reside within the uterus when the corpus luteum forms and results in pyometra (Noakes *et al.* 1990). Pyosalpinx refers to presence of pus in one or both fallopian tubes. Infection may start from vagina and progress up to the cervix, uterus and to one or both fallopian tubes, if not diagnosed and treated at earlier stages (Shivhare *et al.* 2012). Prolongation of the luteal phase may be attributed to increased concentrations of luteotrophic prostaglandin (PGE₂) associated with endometrial bacterial infection (LeBlanc 2008). The present report emphasizes on the diagnosis and successful treatment of pyometra but failure to conceive due to bilateral pyosalpinx.

Case details

A pluriparous cow with a history of clinical endometritis was examined at University dairy farm, DGCN COVAS, Palampur and was diagnosed with pyometra. Last calving of the cow was reported 8 months ago. Ultrasonographic examination of fallopian tubes indicated the presence of pus in it. During transrectal

ultrasonography (TRUS), echogenic pus inside the uterine horns and corpus luteum on the ovary was clearly evident. Pyosalpinx was also diagnosed during TRUS (Fig. 1 and Fig. 2). The treatment of cow was done by repeatedly administering 500 µg PGF₂α analogue (Cloprostenol; Zydus Animal Health Ltd.) intramuscularly on day 1, 4, 7, 10, 13 (72 hr intervals) after diagnosis. Administration of Ciprofloxacin (C-Flox Power; Intas Pharmaceuticals Ltd.) @ 5 mg/kg body weight intramuscularly was done for first 5 days after diagnosis. TRUS was conducted on a weekly interval to assess the efficacy of the treatment. Final examination was done on day 42 which revealed the normal size of both uterine horns (Fig. 3) and CL present was also normal in size and was not persistent during next estrous cycle (Fig. 4). However, cow failed to conceive during next few estrous cycle as pyosalpinx was present.

Discussion

Diagnosis of pyometra by transrectal ultrasonography is based on the appearance of increased volume of accumulated echogenic uterine content without fetus and cotyledons, closed cervix and corpus luteum on the ovary (Bon Durant 1999, Sheldon *et al.* 2006). Pyometra is characterized by the presence of corpus luteum on ovary and accumulation of fluid of mixed echo-density in the uterine lumen and distention of the uterus on ultrasonographic examination (Manns *et al.* 1985). Common treatment followed is administration of PGF₂α. Treatment of endometritis with PGF₂α or a synthetic analogue is done to stimulate uterine defense mechanisms

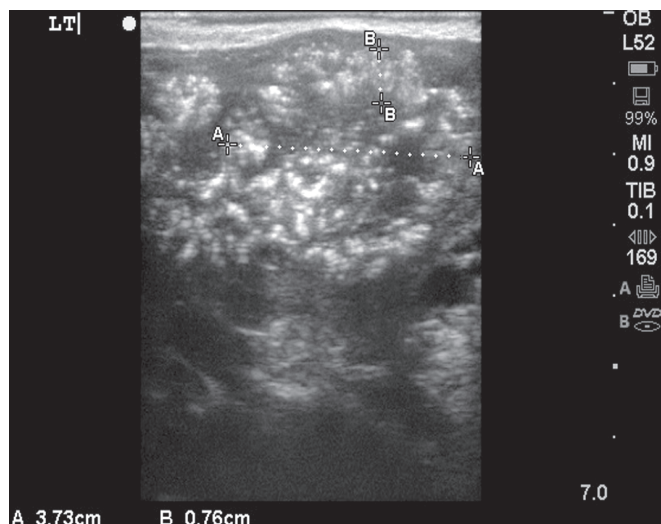


Fig. 1. Snowy (echogenic) appearance indicating presence of pus in the left uterine horn; (A) showing TD (37.3 mm); (B) showing endometrial thickness (7.6 mm) on day 1.

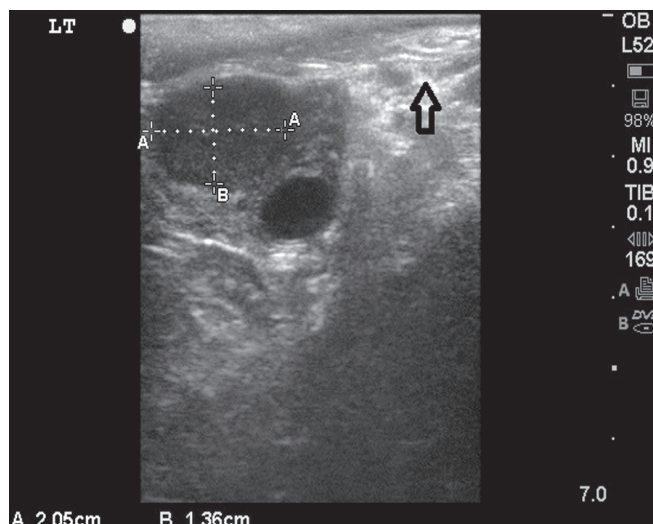


Fig. 2. Image showing CL; (A) showing TD (20.5 mm) and (B) showing LD (13.6 mm); black arrow indicating pyosalpinx in the left fallopian tube on day 1.

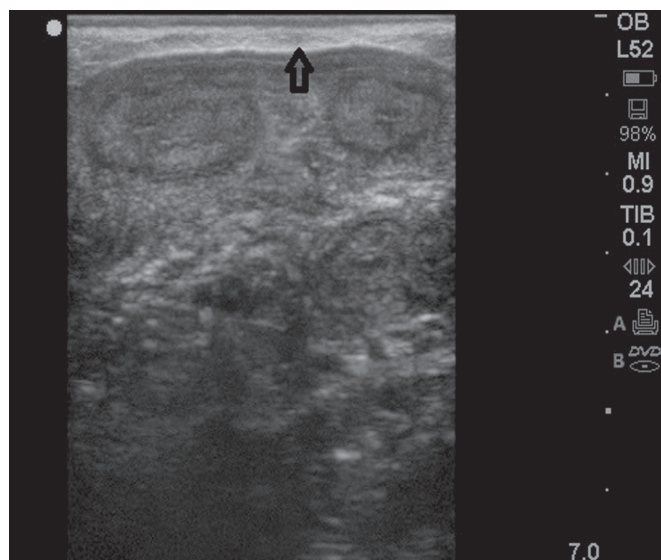


Fig. 3. Transverse section of both uterine horns after PGF₂α treatment showing decrease in size as well as no echogenic material was present; black arrow indicating perimetritis which is a sequel of pyometra on day 42.

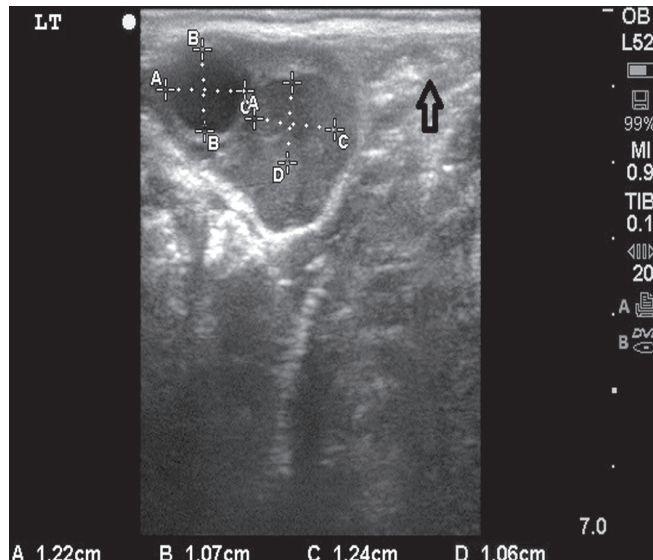


Fig. 4. Image showing CL and follicle: (C) showing TD (12.4 mm) and (D) showing LD (10.6 mm) of CL; (A) showing TD (1.22cm) and (B) showing LD (10.7 mm) of follicle; black arrow indicating pyosalpinx in the left fallopian tube on day 42.

by destroying the corpus luteum and removing the progesterone source (Hendricks *et al.* 2006). The decrease in progesterone and increase in estrogen concentrations associated with luteolysis and follicular growth result in maximal resistance of the uterus to bacterial infection. Also, PGF₂α has the least harmful effects and milk does not have to be discarded (Praveen Raj *et al.* 2015). Conception failure due to tubal blockage is either because of preventing sperm from reaching the egg or preventing the egg from reaching the uterus (Shivhare *et al.* 2012). In this case, PGF₂α helps in evacuating pus from uterus via increasing contractile potential of uterine muscles and

[TS = Transverse Section, LD = Longitudinal Diameter, TD = Transverse Diameter, CL=Corpus Luteum].

regression of persistent CL. However, early diagnosis should be done to prevent the chances of infection to ascend and infertility.

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