Short Communication

# SUCCESSFUL MANAGEMENT OF FALSE ANESTRUS IN A PUNGANUR COW BY DOUBLE PGF2α PROTOCOL

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## ABSTRACT

*A pluriparous Punganur cow calved 9 months back was presented to Large Animal Gynaecology Unit with the history of anestrus. On rectal examination, uterus was flaccid and uterine horns were similar. Transrectal ultrasonography revealed presence of corpus luteum in the right ovary and small follicles in the left ovary. Based on the history, per rectal examination and transrectal ultrasonography, the case was diagnosed as false anestrus due to silent estrus. Double prostaglandin (PGF2α) protocol was followed. After first injection of PGF2α, animal was examined on day 11 where the ultrasonography revealed corpus luteum in the right ovary and medium size follicle in the left ovary. Animal came to estrus after 72 hours of second PGF2α injection and inseminated. Pregnancy was confirmed by 90 days post insemination.*

**Key words:** Anestrus, double prostaglandin, ultrasonography

Received : 05.07.2024 Revised :22.04.2025 Accepted : 25.04.2025

## INTRODUCTION

Failure of estrus or anestrus is the most common cause of infertility in cattle. Anestrus in cows can be classified into two classes - class I (false anestrus), cows with a functional corpus luteum whereas class II (true anestrus) are cows with inactive ovaries (Roberts, 1982). Gautam (2023) reported 61% of the cows had postpartum anestrus where two-third of the animals had true anesrtum and one-third had silent estrus. The incidence of silent ovulation is high in first postpartum ovulation when compared to second and subsequent postpartum ovulation (Isobe *et al*., 2004). Silent estrus or weak estrus is characterized by the absence of the behavioral indicators of estrus at the anticipated period (Mwaanga and Janowski, 2000). Treatment include improved management practices, frequent rectal examination for predicting the time of estrum, removal of corpus luteum and estrus

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synchronization by progestagens (Roberts, 1982). One of the practical ways to induce estrus in cows with silent heat is through prostaglandin (PGF2α) therapy (Mwaanga *et al*., 1999).

## CASE HISTORY AND OBSERVATIONS

A pluriparous Punganur cow calved three times was presented to Large Animal Gynaecology Unit, Madras Veterinary College, Vepery, Chennai with the history of anestrus even after 9 months of calving. On clinical examination, all the parameters were within the normal range. Animal's body condition score was 3 out of 5. On rectal examination, cervix and uterus were palpable in pelvic cavity. The uterus was flaccid and uterine horns were similar. Transrectal ultrasonography revealed presence of corpus luteum (Size: 15.8 ×16.0 mm) in the right ovary (Fig. 1) and small follicles in the left ovary. Based on the history, per rectal examination and transrectal ultrasonography, the case was diagnosed as false anestrus due to silent estrus.

## TREATMENT

On the day of presentation (Day 0) the animal was administered Inj. Cloprostenol sodium 500 mcg I/M, Inj. Vitamin AD3E 5ml I/M and Inj. Phosphorus 7ml I/M. On day 11, per rectal examination revealed cervix and uterus were in the pelvic cavity and uterus was flaccid. Transrectal ultrasonography revealed presence of corpus luteum in the right ovary (Fig. 2) and medium size follicle in the left ovary and second PGF2α injection was given on day 11 after the first PGF2α injection. Animal exhibited estrus 72 hours after second PGF2α injection and ultrasonographic examination revealed presence of follicle of size 10.2 × 13.3 mm in the left ovary (Fig. 3), regressing corpus luteum in the right ovary (Fig. 4) and animal was inseminated. Pregnancy was confirmed on day 90 post insemination (Fig.5).

## RESULTS AND DISCUSSION

Farm animal infertility can result from a number of factors, including diet, physiological disturbances, hormonal causes and infectious causes that can act separately or in combination. In silent estrum the cow may not exhibit estrum, despite the herdsman's attentive observation, yet upon rectal examination the cow shows evidence of having ovulated by the presence of corpus luteum. Silent estrus may result from insufficient estradiol or from a higher threshold of estradiol being required in the central nervous system to elicit behavioural signs. A regressing corpus luteum that is still generating progesterone also may be necessary for good signs of estrus to occur. Treatments include improved management practices, frequent rectal examination, removal of corpus luteum, estrogenic therapy and estrus synchronization by using oral progestogens. Estrus can be induced either by using single or double PGF2α alone or in combination with other hormones like estrogen, GnRH or progestogen (Roberts, 1982). In the present report, double PGF2α protocol was followed. Macmillan and Day (1982) noted normal or above normal fertility following induction of estrus with

PGF2α. The luteolytic effect of PGF2α requires the animal to be in diestrus (days 7–17). Ultrasonography was the important tool in this case, by which the size of dominant follicle, mature corpus luteum and regressing corpus luteum were confirmed thus favoured to opt the treatment protocol. Poor estrus detection or silent estrum has greater impact on the economical status of a farm and farmer. Khan *et al*., (2009) estimated that 18-40% of the cattle and buffaloes were culled due to infertility problems which include anestrum and repeat breeding.

## CONCLUSION

Anestrus is one of the causes of infertility in cows, which affect the economic status of the farmer. In the present case, the false anestrus is due to silent estrus caused by hormonal imbalance. Regular observation of estrus cycle and ultrasonographic examination in appropriate time helps to diagnose the condition of the animal. Here, diagnostic tool and adopting efficient therapeutic measures plays a major role to control economic loss of the farm.

Structures visualized in ultrasonography and treatment protocol followed:

| Day | Structures visualized in Ultrasonography | | Treatment |
|---|---|---|---|
| | Right ovary | Left ovary | |
| Day 0 | Corpus luteum | Small follicles | Inj. Cloprostenol sodium |
| Day 11 | Corpus luteum with cavity | Medium sized follicle | Inj. Cloprostenol sodium |
| 72 hours after second PGF2α injection | Regressing Corpus luteum | Dominant Follicle | Animal was inseminated |

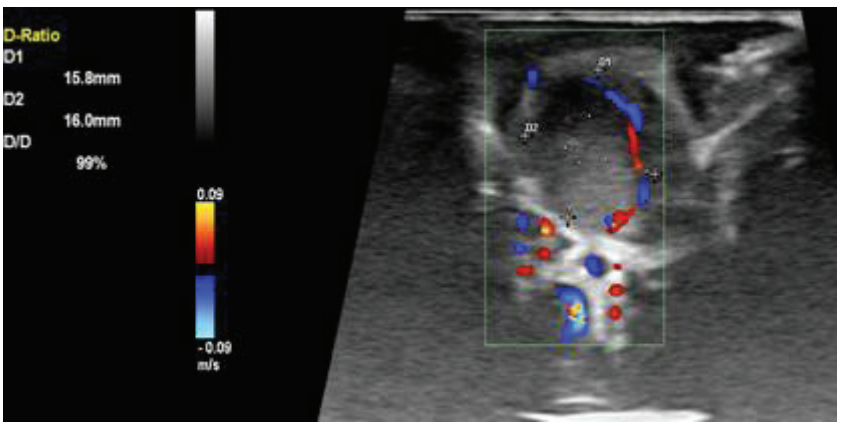


**Fig. 1** Ultrasonographic picture of corpus luteum (15.8 ×16.0 mm) in the right ovary on day 0

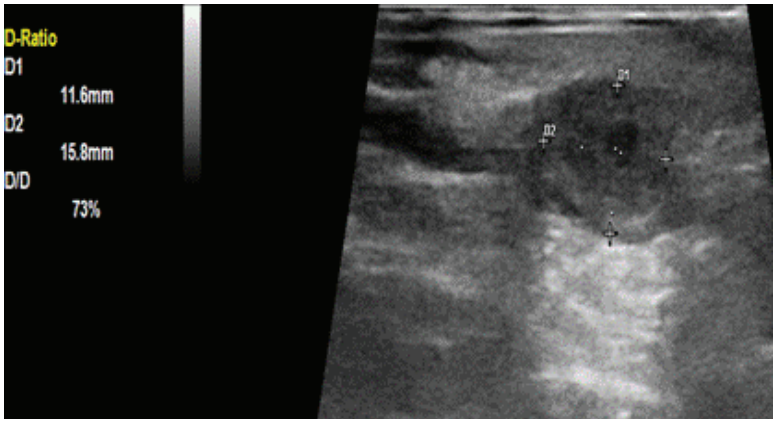


**Fig. 2** Ultrasonographic picture of corpus luteum with cavity in the right ovary on day 11

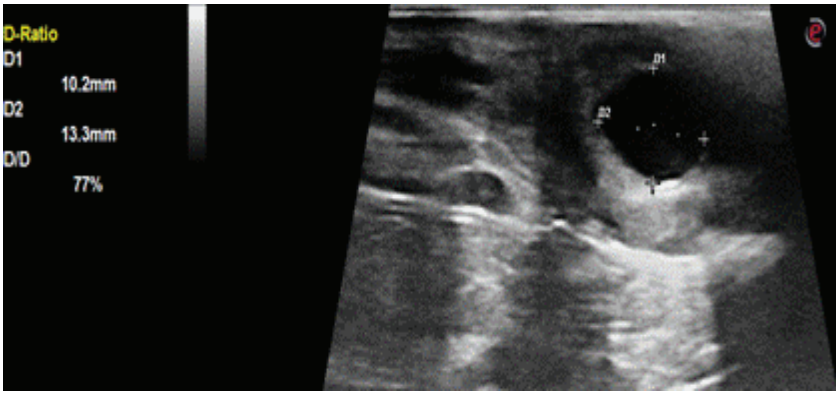


**Fig. 3** Ultrasonographic picture of follicle (10.2 × 13.3mm) in the left ovary 72 hours after second PGF2α injection

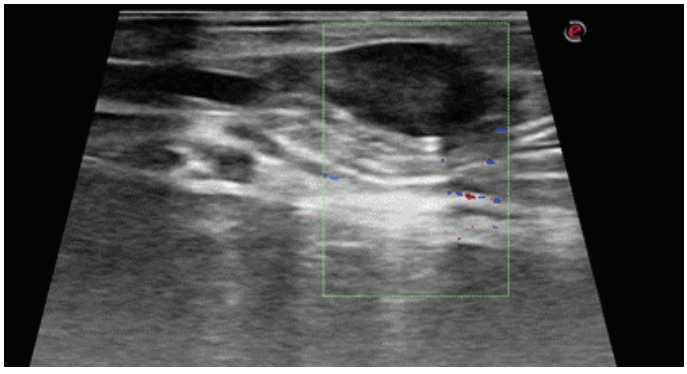

**Fig.4** Ultrasonographic picture of regressing corpus luteum in the right ovary72 hours after second PGF2α injection

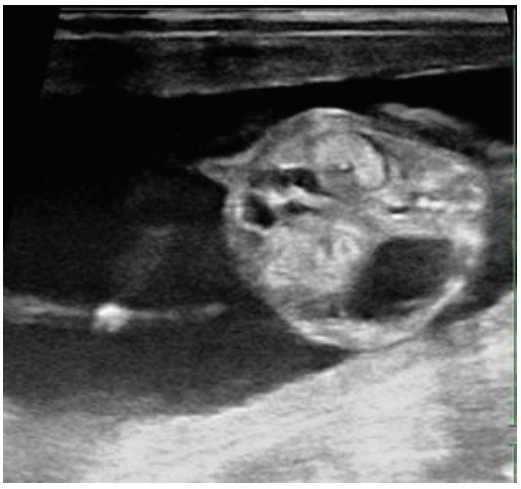

**Fig.5** Ultrasonographic picture of fetal parts

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