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Bilateral Cystic Ovarian Degeneration in a Sokoto Red Goat

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Abstract: A 1 1/2 years old apparently healthy Sokoto Red (SR) goat weighing 16 kg was diagnosed with bilateral Cystic Ovarian Follicles (COF) at postmortem carried out 24 h from the onset of standing heat. No follicles or recent copora lutea were visible on the ovaries. The weights of right and left ovaries with their cysts were 32 and 15 g, respectively. The lengths of the right (ROC) and left (LOC) ovarian cysts were 18 and 15 cm, respectively. The circumference of the bulbous ovarian end and the posterior tail-like extensions of the cysts were 12 vs. 2.5 and 6 vs. 2 cm, respectively for the ROC and LOC. The volume of follicular fluid contained in the ROC and LOC were 25 and 9.5 mL, respectively. It was concluded that the ROC had larger weight and dimensions than the LOC.

Key words: Cystic ovarian degeneration, Sokoto Red goat, ROC, follicle, ovaries

INTRODUCTION

Cystic Ovarian Degeneration (COD) is one of the most important causes of infertility and economic losses in dairy cattle (Lopez-Diaz and Bosu, 1992). Cystic Ovarian Follicles (COF) develop when one or more follicles fail to ovulate and subsequently do not regress but maintain growth and steriodogenesis (Silvia *et al*., 2002). It is characterized nymphomania, anoestrus and (or) abnormal ovarian cyclicity (Vanholder *et al*., 2006). Cystic ovarian follicles develop due to dysfunction in the hypothalamic-pituitary-ovarian axis which alters the preovulatory LH surge that induces normal ovulation (Yoshioka *et al*., 1996). Imbalances between insulin-like growth factors and their binding proteins have also been implicated in COD (Rodriguez *et al*., 2011). If left untreated, some animals with COD resume ovarian cyclicity, spontaneously. However, cysts also respond to treatment with human chorionic gonadotrophin, gonadotrophin releasing hormone and prostaglandin F_2 alpha (Cech and Dolezel, 2007).

MATERIALS AND METHODS

Case history: A 1 1/2 years old doe weighing 16 kg was slaughtered using standard procedure in the mini abattoir of the National Animal Production Research Institute, Shika, Ahmadu Bello University, Zaria, Nigeria. The doe was slaughtered at 24 h from the onset of standing oestrus. Prior to the oestrus, the doe had exhibited a prolonged cycle length of 30 days. After slaughter, the doe was skinned, flayed and the genitalia exteriorized. A detailed examination of the genitalia revealed a large well-developed follicular cyst on both ovaries. Each ovary with its cyst was then resected and weighed and its dimensions recorded with a measuring tape. The volume of follicular fluid from each cyst was also determined by aspiration with a 20 mL syringe and 18 g needle.

RESULTS AND DISCUSSION

The cysts were smooth and transparent owing to substantial accumulation of follicular fluid. Both cysts had a bulbous ovarian end and a posterior tail-like extension (Fig. 1). No follicles and recent corpora lutea were visible on the ovaries. The weights of the intact ovaries and their cysts were 32 and 15 g for the right and left ovaries, respectively. The volumes of follicular fluid contained in the right (ROC) and left (LOC) ovarian cysts were 25 and 9.5 mL, respectively. The lengths of the ROC and LOC were 18 and 15 cm, respectively. The circumference of the bulbous ovarian end and the posterior tail-like extensions of the cysts were 12 vs. 2.5 and 6 vs. 2 cm, respectively for the ROC and LOC.

The relatively larger dimensions of the ROC as compared to LOC observed in this case agree with earlier reports of higher ovarian dimensions and follicular fluid volume in the right as compared to the left ovary in goats (Kawu *et al*., 2002; Islam *et al*., 2007). This suggests a higher predisposition for the development of larger COF

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Fig. 1: Bilateral cystic ovarian follicles in a Sokoto Red goat; a) Right ovary devoid of follicles; b) Bulbous ovarian end of ROC; c) Tail-like extension of ROC; d) Left ovary devoid of follicles; e) Bulbous ovarian end of LOC and f) Tail-like extension of LOC

in the right than left ovary of goats. Bilateral COF have also been reported in dairy cattle (Lopez-Diaz and Bosu, 1992) and primates (Kumar *et al*., 2012; Restuccia *et al*., 2012). In temperate sheep and goats, diagnosis of COD is difficult because they proceed into seasonal anoestrus before the condition is detected (Lopez-Diaz and Bosu, 1992). However, in year-round breeders like SR goats, an unusually extended cycle length as observed in this case may suggest the possibility of the presence COF in the animal. This should warrant further investigation by ultrasonography and institution of appropriate therapy.

CONCLUSION

Based on the observations made in this case, it was concluded that in bilateral COD in goats, the ROC may have larger weight and dimensions than the LOC.

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