

Ultrastructure of Bovine Ovarian Follicles Induced to Extended Growth by Perioestrous Suprabasal Progesterone Levels

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The present study was undertaken to determine if a short-term prolonged growth of the ovulatory follicle (12 to 18 h after expected time of ovulation), induced by progesterone implants, would cause ultrastructural changes in the follicular wall. Oestrous behaviour, follicular growth, follicular and blood plasma levels of oestradiol-17 β , progesterone and plasma luteinizing hormone (LH) were monitored in heifers oophorectomized at 9 to 12 h (controls) or 36 h after the onset of oestrus, in order to sample the pre-ovulatory follicle present. The suprabasal plasma progesterone concentrations (approximately 1.2 nmol L⁻¹) allowed expression of oestrus at the expected time, but ovulation was delayed owing to the absence of a LH-surge. The resulting prolongation of follicle growth was associated with mild degenerative changes in the follicle wall, i.e. both granulosa and thecal cells presented increased electron density, higher amounts of secondary lysosomes and lipid droplets, increased inter