

## A NEW METHOD FOR EVALUATING OVARIAN FUNCTION IN SHEEP

A.R.RABIEE, I.J.LEAN, J.M. GOODEN AND J.O'BRIEN

Venous and arterial blood analysis combined with measurement of ovarian blood flow (OBF) is a useful method for evaluation of ovarian function. Previous studies have focused on OBF, effect of hormones on the ovary, and measurement of progesterone production. The present study was undertaken to determine the ovarian uptake of hormone precursors, energy and oxygen.

The ovarian artery is derived from the aorta and runs a mildly tortuous course close to the surface of the utero-ovarian vein. The utero-ovarian vein, forms from the fusion of one or more large uterine veins. The plexiform veins drain the ovary, and a tubal vein. We observe that there are two major veins draining the ovary that lie closely adherent to this arterio-venous plexus.

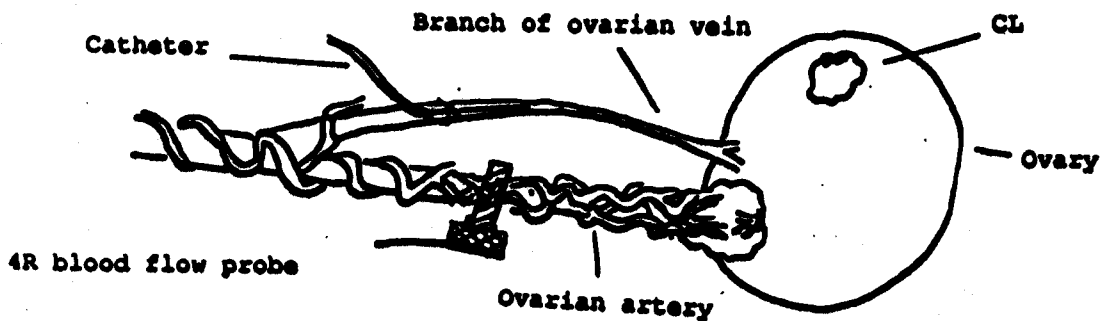


Figure : Location of venous catheter and blood flow transducer

Sheep (cross-breed ewes) were anaesthetised, and after a mid-ventral incision, the ovarian vein was cannulated with a polyvinyl cannula (OD:0.9mm, ID:0.5mm) filled with heparin saline and the catheter was held in place with a silk suture. In order to measure the OBF a blood flow transducer (4R Transonic Inc Ithaca, NY) was placed around the ovarian artery (see Figure). When heparin was flushed into the cannulated vein, arterial blood flow ceased, confirming that cannulated veins drain the ovary. After temporary closure of the abdominal wall, the femoral artery was catheterised and 12500IU of sodium heparin was injected. Continuous blood sampling was performed over a 3.5 hour period using a peristaltic pump. Samples of blood (10ml) were taken over 10 minute intervals in order to determine the arterio-venous differences in metabolites and steroid hormones levels. This method permits a validation that the ovarian vein is correctly identified and allows evaluation of ovarian function in situ.

LEE.C.S., and O'SHEA.J.D. (1976). *J Morphology*. 148: 289.

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Department of Animal Science, University of Sydney, Camden, NSW 2570