

71. GRAFTING OF OVARIAN TISSUE IN A NON-HUMAN PRIMATE MODEL

M. Pangestu¹, M. Diamente³, D. Pawitri², J Shaw¹ and A. Trounson¹

¹Monash Institute of Reproduction and Development, Monash University, ²Monash IVF, Clayton Vic 3168, Australia; ³Centre Primate Research Centre, Bogor Agricultural University, Bogor, Indonesia.

Ovarian tissue can contain a large number of immature oocytes. In species such as the mouse and sheep these remain functional and can give rise to live young following frozen storage and grafting. Frozen storage of ovarian tissue has therefore been suggested as a strategy for cryobanking female germ cells for rare or endangered species and for young women who are at high risk of premature menopause. Trials on a small number of women and non-human primates show that grafts of frozen-thawed ovarian tissue can restore menses, but have not ascertained how long the grafts remain functional or whether normal, fertilizable, oocytes can be collected from these grafts. In this study, frozen-thawed ovarian tissue were autografted to eleven previously ovariectomised female macaques (*M. fascicularis*) aged between 4 and 15 years at the start of the study. The females were studied for at least 6 months following graft replacement to a subcutaneous site on the abdomen to ascertain: the delay until menses were restored, the regularity and length of the cycles and whether cycles ceased. Oocyte retrievals were performed in a hormonally stimulated cycle to assess the number, quality and fertilizability of oocytes from the grafts. *Results.* Menstrual cycles were restored to all females usually within 3 months of graft replacement, but only 6 of the females developed regular cycles. Oocytes (including MII oocytes) could be recovered from some, but not all grafts, and some, but not all, females. There was evidence that graft function (regularity of cycles) declined with time. The number of oocytes recovered from the equivalent of one grafted ovary was significantly lower than the number recovered from an intact single ovary. We conclude that ovarian autografting to a subcutaneous site does permit maturation of oocytes and oocyte retrieval for assisted reproductive techniques, the efficiency is, however, low.