13. EFFECT OF GRAFT SITE ON OVARIAN TISSUE GRAFTS IN THE MOUSE

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The rate at which grafts become revascularized differs at different sites. The number of follicles which survive grafting also different graft sites, it is, however, not known whether the quality of oocytes grown at different sites differ in their capacity to form fetuses and live young. To investigate this question ovaries of C57Bl×CBA F1 mice were cut in half and grafted to either of three different graft sites (ovarian bursa, kidney capsule, subcutaneous tissue) in females of the same F1 line. Oocytes were collected 3 weeks after grafting directly from the grafted ovaries and then both matured and fertilized in vitro. As controls, we investigated oocytes collected from the ovary (these mature to MII after overnight in vitro maturation) and ovulated, mature MII, oocytes. Results: graft recovery (no. recovered/no. grafted) was higher for the kidney capsule (46/48, 96%) and bursa (35/40, 88%) than for subcutaneous grafts (60/96, 63%). Subcutaneous grafts gave the lowest oocyte recovery (55 oocytes from 60 grafts). All oocytes recovered from the grafts were matured and fertilized in vitro. The fertilization of the control IVM IVF group was equivalent to the IVM IVF grafted groups, but all IVM IVF groups were below the in vivo matured, control (81-85% 2-cells). Two-cell embryos were transferred to pseudopregnant recipients and collected at day 15 of gestation. Embryos derived from grafts to the bursa were also transferred and left to go to term. Oocytes collected from grafts to the ovarian bursa gave rise to fetuses (4/14, 28%) and live young (2/8, 25%) with the same efficiency as normal IVF controls (5/20, 30% and 3/12, 25% respectively). We also obtained fetuses from the kidney capsule (2/20) and subcutaneous (1/1) grafts. Embryos derived from grafts to the kidney capsule were associated with a large number of fetal resorptions (9 of 11 implanted embryos), but the weights of the two remaining fetuses were comparable to that in the IVF control group (both were 0.26 ± 0.01 g). Further studies are being conducted to ascertain whether the observed differences in oocvte developmental potential are a result of the effect of the graft site on the developing oocyte.