
In order to establish the magnitude of and temporal changes in the pressure within in situ conceptuses during early pregnancy conceptus pressure was measured by the servo-nulling method employing a micro-pipette. Implantation site volume increased from 7 through 10 dpc: 0.16 ± 0.03; 0.57 ± 0.14; 1.66 ± 0.37 and 2.32 ± 0.73 cm³, respectively (day 7 vs 10 p < 0.01). Conceptus pressure declined between 7 through 10 dpc: 5.87 ± 1.53; 5.29 ± 1.53; 3.77 ± 0.95 and 3.18 ± 0.76 mmHg, respectively (day 7 vs 10 p < 0.05). Pressure fluctuated slightly: the frequency of change declined between 7 and 8 dpc (3.17 ± 1.25 to 1.59 ± 0.50 peaks/min; p < 0.01) and reached 1.08 ± 0.30 peaks/min at 10 dpc. Fluctuations in pressure correlated with myometrial contractions. The decline in conceptus pressure suggests that the uterine wall becomes increasingly compliant as blastocyst cavity/yolk sac fluid accumulates within the conceptus. Conceptus expansion resulting from internal pressure may enhance conceptus/uterine metabolic exchange by increasing the ratio of conceptus surface to cytoplasmic mass and by facilitating apposition of conceptus-uterine surfaces. (*Alexander-von-Humboldt-Stiftung Forschungs-Stipendiat.)