tightly associated with somatic cell proliferation. We investigated the expression of Ki-67, NF-κB, and COX-2 in endometrial tissue, and the incidence of polyps with or without endometriosis.

Materials and Methods: The study group was 92 patients with endometriosis and the control group was 90 patients without endometriosis. The subjects were 30 samples. The 20 samples consisted of endometrial tissue with endometriosis, 10 samples with polyps, and 10 samples without polyps. The remaining 10 samples were endometrial tissue which had polyps without endometriosis. The control subjects were 10 samples of normal endometrial tissue. Expression of Ki-67, NF-κB, and COX-2 was immunohistochemically investigated by polyclonal antibody.

Results: Endometrial polyps were found in 53 of 92 (57.6%) women with endometriosis but only in 15 of 90 (16.7%) women without endometriosis. High expression of Ki-67 was shown in endometrial tissue with endometriosis with or without polyps. The expression of NF-κB and COX-2 was increased in endometrial tissue with polyps with or without endometriosis, but normal endometrium showed lower expression.

Conclusion: It is suggested that endometriosis may induce growth of endometrial polyps. It may be caused by the increased expression of Ki-67, NF-κB, and COX-2 in eutopic endometrium with endometriosis which is possibly due to the increase of the cellular proliferation and change of the cellular function.

O-14 Cultivation of Immature Male Germ Cells in Biodegradable Scaffold

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Objectives: Successful in vitro differentiation of spermatogenic cells is a potent method for the treatment of male sterility due to spermatogenic arrest. Many researches have been done to improve the culture efficiency and recent studies have shown that round spermatids could develop from the in vitro culture of 18 day-old mouse germ cells. The present study examined a new device for the culture of mouse male cells by assessing meiotic maturation of spermatogenic cells.

Materials and Methods: ICR male mice of 18 day-old were used. Testes were decapsulated and seminiferous tubules were dissociated enzymatically to release both somatic and germ cells. For the scaffold culture, dissociated cells were repacked in a biodegradable scaffold (InnoPol, InnoTech Medical Inc.) and then cultured for up to 18 day in modified RPMI 1640 medium at 32℃ with 5% CO_2 in air. For the monolayer culture, a group of dissociated cells were seeded into petri dish containing the same medium. For the organ culture group, fragments of seminiferous tubule were loaded onto a 0.22 μm membrane filter and cultured in an organ culture dish usign the same medium. After culture, cells were smeared onto L-lysine coated microscope slides and examined for the presence of transition protein-2 (TP-2) known to

be specific for the round spermatid using anti-goat rabbit transition protein (TP2) antibody.

Results: Viability of the cells cultured by monolayer method, organ culture method or in a biodegradable scaffold was 60%, 70% and 95% respectively. Microscopic observation indicated that 80% of the recovered germ cells developed to late spermatids and 20% reached elongated spermatids. In contrast, only 20% of germ cells cultured by the organ culture method developed to round spermatids. Monolayer culture method showed that only 10% of cultured germ cells developed to round spermatids. No elongated spermatids was found in cells cultured either by organ culture method or by monolayer method.

Conclusions: A culture system consisting of a biodegradable scaffold could support the in vitro differentiation of mouse male germ cells. Compared to the conventional monolayer culture method and organ culture method, the system appeared to be superior.

O-15 Effects of IGF-I, TGF-α and LIF on Apoptosis of Blastomere and oct4 Gene Expression in Mouse Preimplantation Embryos

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Objective: It has been shown that insulin-growth factor-I (IGF-I) and transforming growth factor-α (TGF-α) are important inhibitors of cell death and promote preimplantation embryo development, and leukemia inhibitory factor (LIF) is implicated in inhibiting the differentiation of cells. Oct4 is a transcription factor that maintains totipotency of the cells and its effects were recently reported to be dependent on its concentration in the nucleus. Especially, oct4 mRNA and protein are predominantly found in the inner cell mass (ICM) of the blastocyts. This study was carried out to investigate the effects of IGF-I, TGF-α and LIF on oct4 expression, in relation to cell number and apoptosis in mouse preimplantation embryos.

Materials and Methods: 2-cell embryos were collected post-hCG 48 hr and were cultured for 72 hr (control). Treatments consisted of following groups, each of which was cultured with IGF-I (1.7 nM), TGF-α (250 pM) and LIF (1000 unit/ml). Semi-quantitative RT-PCR was used to assess the gene expression of oct4 and cell apoptosis was detected by TUNEL counterstained with hematoxylin.

Results and Discussion: Oct4 gene expression was similar in all groups at 4-cell and morula stage, but increased in the IGF-I and TGF-α treated groups at blastocysts stage. The total number of blastomere was not different among all groups. But, the proportion of TUNEL-labeled nuclei in blastocysts significantly decreased from 28.7% (control) to 18.3% (IGF-I) and 10.8% (TGF-α), respectively. Taken together, in blastocysts, the anti-apoptotic action of IGF-I and TGF-α increased the ICM cell number combined with reduced cell death, therefore, oct4 gene expression increased. It is suggested that amount of oct4 gene expression may be associated with blastocyst quality. This study might be applicate to improve the culture system of the blastocyst transfer in human ART.