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The purpose of this study is to elucidate morphological and functional similarity between the orthotopic and ectopic endometrium. Materials used were obtained from the specimens hysterotomized because of advanced Em in 55 patients, whose blood had been collected preoperatively.

Morphology on microscopic and electron microscopic observation revealed that Em had more similar structure to the basal layer of the orthotopic endometrium than to the functional layer: in the lesion of Em, gland cells were smaller in size and had scanty organellae, and stroma cells were spindle-shaped. Hormonal responses of each cells were milder and later than those of the orthotopic endometrium.

Functional studies resulted in: (1) 8S estradiol receptor in the orthotopic and ectopic endometrium had a peak at later proliferative phase and that of progesterone receptor at ovulatory phase with receptor assay, respectively. (2) Concentrations of estradiol in the orthotopic and ectopic endometrium showed a peak at ovulatory phase and that of progesterone at middle luteal phase, respectively. (3) The histogram mode of nucleic DNA of Em shifted to the right side at the late proliferative phase as that of the basal layer.

From the foregoing, we are convinced that the origin Em is from the orthotopic endometrium, especially from its basal layer, in view of morphological and functional similarities.

## 53. Pathogenesis of Internal Endometriosis (Adenomyosis) —Centering on the Direct Invasion of Endometrium into the Unterine Wall—

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We observed lymph vessels in the uterine muscle layer by india ink, investigated the cyclic changes of proliferative ability of the orthotopic and ectopic endometrium in comparison with the cyclic variations of nuclear DNA content, and measured the extent of connective tissue interstice in the muscle. Besides, studies were made on clinical statistics and histopathology of endometriosis.

As a result it was found that adenomyosis was an aquired disease with a peak between 30 and 35 years old (estimated) and accompanied often by myoma and external endometriosis. Adenomyosis had continuity to the orthotopic endometrium in 98.1% of the cases, which was confirmed by means of serial sections of the tissue. Lymph vessels were localized at the marginal area of nearly all lesions. Also, fragments of endometrium were observed of 0.67% in the lymph vessels and 0.46% in the blood vessels. On the other hand, it was clarified that the nuclear DNA content of the orthotopic and ectopic endometrium was varied cyclically in proportion to the extent of connective tissue interstice.

From the above, it was considered that adenomyosis was produced mostly direct, continuous invasion of the orthotopic endometrium into interstice among connctive tissue of the uterine muscle and partly through the vascular system. The predisposition might be due to the proliferative ability of the endometrium and the extended interstice among connective tissue of the muscle layer.

## 54. The Pituitary Function during the Long-termed Hormone Therapy on Pelvic Endometriosis

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This study was performed to obtain an additional information about the effect of pseudopregnancy therapy on pituitary function.

16 patients, aged 25-35 years old, in pseudopregnancy therapy for pelvic endometriosis, who orally recived 1-2 tabs. of the conbination of 2.0 mg of norethisterone and 0.1 mg of mestranol daily for 105-140 days, and 12 normal women in luteal phase as a control group were observed. Serum levels of FSH, Lh, PRL, TSH, estradiol ( $E_2$ ), progesterone (P), Triiodothyronine ( $T_3$ ), thyroxine ( $T_4$ ) and cortisol (C), before and after administering intravenously 100 ug of LH-RH or 500 ug of TRH, were measured.

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