

creased. On the other hand, typical dose relationship was not obtained in cells treated with Mitomycin C for 1 hour.

These results may be useful to designing for the cancer chemotherapy.

#### 41. Studies on Psychosomatic Medicine in Gynecological Disease the Relationship between Hormonal System and Autonomic Nervous System

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The hormone system appears to be closely related to the autonomic nervous system, as demonstrated by the symptoms with which patients come to physicians. For instance, various symptoms of the autonomic nervous dysfunction will occasionally appear following the hormone treatment.

12 cases of uterine bleeding (100 cases) were considered to be psychosomatic with identifiable cases in their psychology. 11 cases demonstrated so called "syndrome shift" following gynecological treatment. 50 cases with symptoms of menopause were given hormone treatment alone. 74% showed a normal pattern of Cornell Medical Index revealed good results and 35% of which having neurotic patterns showed good results ( $P < 0.01$ ). 10 cases showing no effect in response to hormone treatment were treated with psychosomatic approach (autogenic training, fasting therapy etc). 4 cases of pseudocyesis wanted to have a good family relationship. So the syndrome shifts appeared without psychotherapy including their family members. 5 mg of diazepam were administered intravenously in the course of the Rubin test for 85 cases and 46 cases resulted in showing change.

So psychological considerations for the treatment in the field of gynecology are reported in this study as a result of a psychosomatic approach.

#### 42. Psychosomatic Studies during Labor—Mainly Electrophysiological Studies during Dilatation

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It has been generally believed and we also reported that the use of the relaxation technique will not only decrease the labor pain but also shorten the duration of labor. In this report, we studied relationship between microvibration (MV) or electromyogram, respiration and external tocometry during the first stage of delivery, psychological questionnaire inventory tests in puerperium, and obstetric factors of 63 pregnant women. Main results obtained in this study were as follows.

1) There was a significant correlation between slow wave of MV, regular respiration and the group of advanced labor without any manipulation ( $p < 0.01$ ).

2) As for the group with complications, namely toxemia, diabetes mellitus, anemia and so on, there was a tendency of the dominant fast wave of MV.

3) There was a significant correlation between high score group of L scale, high and low score group of N scale in Maudsley test and the dominant fast wave of MV ( $p < 0.05$ ).

4) In the relationship between MV and respiration, it was a significant correlation that the group of regular pattern of respiration was dominant slow wave of MV ( $p < 0.005$ ).

5) There were no significant changes of MV during dilatation, but respiration got irregular at last phase of dilatation.

#### 43. Psychosomatic Aspects of Endocrinological Environment and Lactation in the Puerperium

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It's well known fact interrelationship between emotions and endocrine functions. The effects of psychosomatic and endocrinological environment

on lactation were observed at the point of 5th day, 1M, and 2Ms after delivery. Psychosomatic observations were done by interview, CMI, MPI, MAS and autonomic nerve function test. Also serum LH, FSH, PRL, LH-RH,  $E_2$ , P and T were measured. The results are summarized as follows:

Women who are psychosomatically abnormal (abnormal group) in comparison with psychosomatically normal (normal group), it seems that the endocrinological environment show delayed tendency to the eumenorrhoeic patterns compared with the normal group. Administrations of LH-RH and TRH were performed on five cases each of normal and abnormal women at the period of one month after delivery. The responses to each tests were poor in the abnormal group on contrast with normal group. Interrelationship of psychosomatic state and endocrinological environment on good and poor lactating women were observed. Compared with good and poor lactating as the same way, there were some similar patterns of abnormal group's and poor lactating one's at each points. It seems that there are close relationship between psychosomatic states and endocrinological environment on lactation.

#### 44. Clinical Endocrinological Aspects of Non-puerperal Galactorrheic Women

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Between 1977 and 1978, fourteen non-puerperal galactorrheic patients with amenorrhea visited the infertile clinic of the Shinshu University Hospital Department of Obstetrics and Gynecology. They were divided into four groups (5 cases of definite or probable prolactin-secreting pituitary adenoma, 5 cases of idiopathic galactorrhea, 2 cases of drug-induced galactorrhea, and 2 cases of polycystic ovarian syndrome) according to their detailed histories, sella X-ray, basal blood levels of luteinizing hormone, follicle-stimulating hormone and prolactin, and LH-RH and TRH test. Out of them, five cases were conceived with only bromocriptine.

In the same duration, eleven galactorrheic patients with normal menstrual cycles also were seen by us. All of their blood levels of prolactin were below 100 ng/ml, and the prolactin response to

TRH was not different from non-galactorrheic normal women. The short luteal phase (within ten days) defect was found in 5 cases. Among 5 patients who were treated by bromocriptine, only one case became pregnant.

#### 45. Treatment of Hyperprolactinemic Patients with Neurosurgery and Bromocriptine

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Twenty-seven women with prolactin producing tumors and 8 with functional hyperprolactinemia were studied. Mean serum PRL in patients with pituitary adenoma was significantly higher than that in functional cases, but over all there was no correlation between serum PRL levels and the size of tumors. Basal serum LH, FSH and  $17\beta$ -estradiol levels were lowered in almost patients with pituitary adenoma. LH response to LH-RH was impaired in 10 tumoral cases with visual field defects, and normal in 5, impaired in 3 and exaggerated in 6 cases with microadenoma. Fourteen patients were operated. PRL was not normalized in 10 cases with visual disturbance postoperatively and bromocriptine was necessary to reduce PRL to normal levels. In 14 patients with microadenoma, 10 of them were treated with bromocriptine alone, four of them were treated with operation, of whom 9 led to a significant fall of the PRL level and induced regular menses. Four of 8 patients with functional hyperprolactinemia were induced regular menses with bromocriptine. The present data indicates that selective neurosurgery or combined with bromocriptine can normalize PRL levels and induce regular menses in patients with hyperprolactinemia.

#### 46. Effects of Bromocriptine Treatment on Hypophysio-gonadal Function

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