

## CORRELATION BETWEEN CLINICAL SYMPTOMS AND ULTRASONIC FINDINGS IN PATIENTS WITH POLYCYSTIC OVARY SYNDROME

(Polycystic ovary syndrome/Ultrasonography)

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We ultrasonographically classified thirty-three patients with polycystic ovary syndrome in three groups; general cystic pattern (GCP), peripheral cystic pattern (PCP), and mixed type (MT) and compared the clinical symptoms (obesity, hirsutism, menstrual irregularity). The results are as follows:

- 1) Patients with GCP and MT are often obese.
- 2) Hirsutism was more frequent in patients with PCP.
- 3) The frequency of oligomenorrhea was much the same in the three groups, and a secondary amenorrhea of grade 2 existed only in case of GCP.

Thus, in cases of polycystic ovary syndrome, the clinical symptoms differ and there are variations in the pathogenesis.

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In 1935, Stein and Leventhal<sup>1)</sup> were the first to document evidence of bilateral polycystic ovaries with clinical symptoms of amenorrhea, hirsutism and obesity. To investigate the pathogenesis of polycystic ovary syndrome (PCOS), it is important to evaluate hormonal analysis, morphological status of ovary, and clinical symptoms. Matsunaga, I. et al<sup>2)</sup> reported that ultrasonography was a pertinent diagnostic tool for a non-invasive diagnosis of PCOS and ovarian structures in patients with PCOS were evident in the form of peripheral or general cystic patterns. Therefore, we investigated the correlation between the ultrasonic appearance of the ovaries and clinical symptoms in

patients with PCOS.

## MATERIALS AND METHODS

Thirty-three patients with PCOS were diagnosed by ultrasonograph and classified into three groups as follows: 14 with general cystic pattern (GCP), 16 with peripheral cystic pattern (PCP), and 3 with mixed type (MT) ultrasonographically<sup>2)</sup>. Clinical symptoms such as obesity, hirsutism, and menstrual irregularity were compared. The obesity-index used was the Japanese variation of Broca's index<sup>3)</sup>, namely, patients who were 20 per cent or over the ideal body weight, 10 per cent or more over the ideal body weight, -10 per cent or more over the ideal body weight, -20 per cent or more over the ideal body weight and -20 per cent under the ideal body weight were classified as obese, obese-tendency, standard weight, thin and emaciation, respectively.

## RESULTS

Fig.1 shows the distribution of the obesity-index in each group. Mean values of obesity-index in cases of GCP, PCP, MT were +10.5%, +3.8%, +18.5%, respectively. In case of GCP, severe obesity (+66.7%, +66.2%) was present. The relationship between ultrasonic groups and the obesity-index in patients with PCOS is shown in Fig.2. Patients with a standard weight accounted for the largest majority and no patient was emaciated. Obese and obese tendency patients accounted for 27.3 per cent in the three groups. Obese patients in GCP (21.4%) and in MT (33.3%) exceeded those in PCP (6.3%). Fig.3 shows the relationship between the ultrasonic groups and hirsutism. Hirsutism was recognized at eleven patients (33.3%) and was seen more frequent in case of PCP (37.5%). Fig.4 shows the relationship between ultrasonic findings and menstrual irregularity. Oligomenorrhea accounted for 66.7% and secondary amenorrhea for 33.4%. The frequency of oligomenorrhea was not so changed among the three groups. Secondary amenorrhea of grade 2 existed only in case of GCP (14.3%). Table 1 shows serum testosterone levels in those with PCOS. Testosterone levels were relatively high in hirsute patients. Statistical differences between hirsute patients and non hirsute ones were nil.

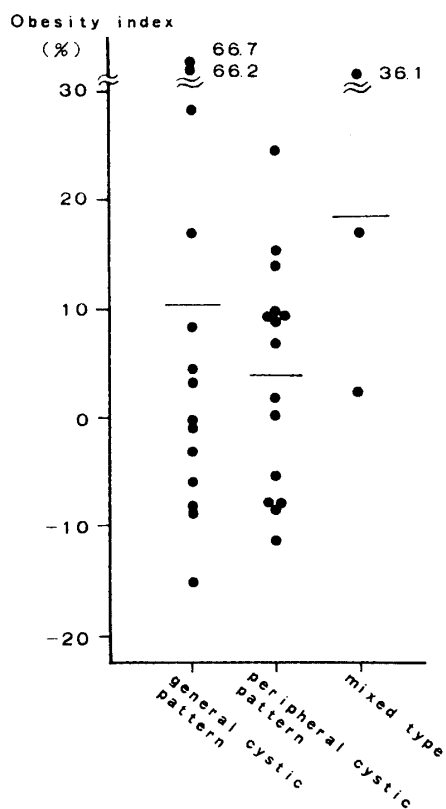


Fig.1 Distribution of the obesity-index in patients with PCOS

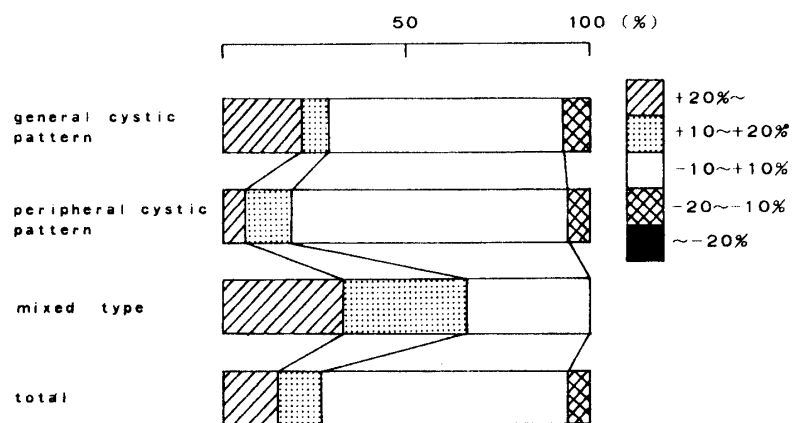


Fig.2 Ultrasonic groups and the obesity-index in patients with PCOS

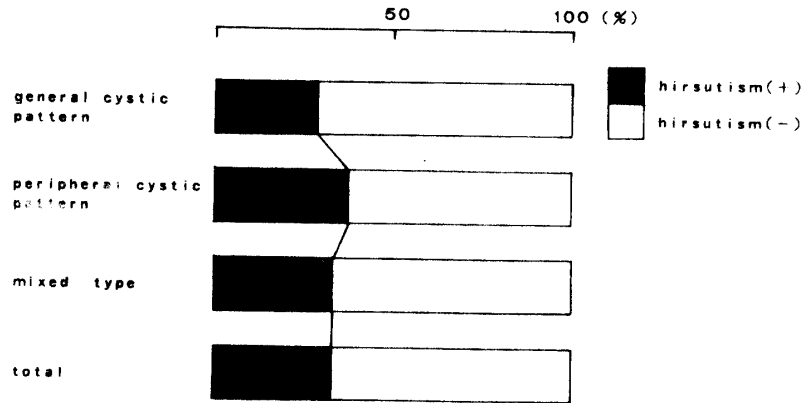


Fig.3 Ultrasonic groups and hirsutism in patients with PCOS

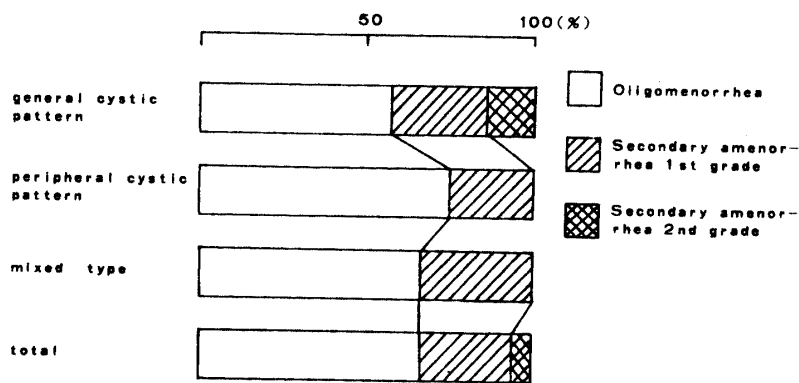


Fig.4 Ultrasonic groups and menstrual irregularity in patients with PCOS

### DISCUSSION

We classified PCOS patients ultrasonographically into three groups and compared the clinical symptoms. Gamal et al<sup>4)</sup> studied the ultrasonic appearance in 20 PCOS patients and noted three patterns: (1) isoechoic, with no discernible cysts; (2) hypoechoic, with multiple small cyst of <1cm; (3) hypoechoic, with single cyst of >1cm. In their study, obesity, amenorrhea, hirsutism were more common in the group with enlarged ovaries, whereas oligomenorrhea occurred more frequently in the groups with normal sized ovaries. Thus, a relationship between morphology of PCOS and clinical symptoms was suggested. Mori et al<sup>5)</sup> differentiated PCOS morphologically into two types; typical PCOS, and atypical PCOS. They compared the morphological findings and clinical symptoms, and concluded that hirsutism was frequent in typical PCOS. In the three groups in our study, there were considerable differences in obesity-index, hirsutism, menstrual irregularity and testosterone levels. Oligomenorrhea and hirsutism were more common in those with PCP. On the

contrary, PCOS with obesity were more often observed in those with GCP than in cases of PCP. These findings suggest various expressions in atretic follicles and that the clinical symptoms of PCOS differ.

#### REFERENCES

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