INTRODUCTION TO REVIEW ARTICLE

Ikuo Konishi

Ovarian cancer in endometriosis

Received: August 17, 2009

Endometriosis is a unique disease entity in which ectopic endometrial-like tissues exist in the ovary, pelvic peritoneum, and various other sites in young women; this entity produces severe symptoms and effects such as dysmenorrhea, dyspareunia, pelvic pain, and infertility. Recently, endometriosis has also received much attention as an important origin of cancer.¹ Although among various histological types of ovarian carcinoma, clear cell and endometrioid adenocarcinomas are known to arise frequently in ovarian endometriotic cysts, little was known about the incidence, molecular mechanisms, natural clinical course, possibility of early detection, or treatment strategy for these two types of ovarian carcinoma. Recently, however, there has been prominent progress in this field. Kobayashi's group² has reported that the possible incidence of malignant transformation of ovarian endometriotic cysts is 0.7%, based on the prospective follow-up of cohorts in the ovarian cancer screening program of Shizuoka Prefecture, Japan. In regard to the molecular basis of malignant change, Mandai's group

(Yamaguchi et al.)³ has disclosed that a high-iron microenvironment exists in ovarian endometriotic cysts, and that this may be related to clear cell carcinogenesis that is characterized by the expression of specific genes. Against this background, this review covers recent progress in the important area of ovarian cancer and endometriosis.

References

1. Nezhat F, Datta S, Hanson V, et al. (2008) The relationship of endometriosis and ovarian malignancy. *Fertil Steril* 90:1559–1570
2. Kobayashi H, Sumimoto K, Moniaw N, et al. (2007) Risk of developing ovarian cancer among women with ovarian endometrioma: a cohort study in Shizuoka, Japan. *Int J Gynecol Cancer* 17:37–43
3. Yamaguchi K, Mandai M, Toyokuni S, et al. (2008) Contents of endometriotic cysts, especially the high concentration of free iron, are a possible cause of carcinogenesis in the cysts through the iron-induced persistent oxidative stress. *Clin Cancer Res* 14:32–40

I. Konishi (✉)
Department of Gynecology and Obstetrics, Kyoto University
Graduate School of Medicine, Sakyo-ku, Kyoto 606-8507, Japan
Tel. +81-75-751-3267; Fax +81-75-761-3967
e-mail: konishi@kuhp.kyoto-u.ac.jp