Sertoli-stromal Cell Tumor Containing Metastatic Lung Cancer Tissue

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Summary: A patient with a Sertoli-stromal cell tumor (SSCT) that contained metastatic lung cancer tissue is described, the first such report. The left ovarian tumor, which developed in a patient known to have lung cancer, mainly exhibited the histology of SSCT with a retiform pattern, and included a component of well-differentiated adenocarcinoma. Immuno-histochemical specific stain for surfactant distinguished the adenocarcinoma from the primary ovarian tumor.

Key words: Sertoli-stromal cell tumor — metastatic ovarian cancer — lung cancer — anti-surfactant apoprotein — double tumors

Introduction

The ovary is a common site of metastases from extragonadal malignancies. However, metastases into an ovarian neoplasia are rare, with only few such cases documented in the English literature (Hines et al. 1976; Smale, 1980). We recently encountered a case of ovarian Sertoli-stromal cell tumor (SSCT) in a patient with a known lung cancer. We report this case because of its rarity, and the diagnostic difficulty.

Case Report

A 70-year-old Japanese woman was admitted to Kurume University Hospital with suspected lung cancer. A chest X-ray, computed tomography, and sputum cytology revealed lung cancer as well as a tumor of the left ovary. Sputum cytologic specimens showed a papillary cluster consisting of atypical cells which suggested an adenocarcinoma. No hormonal abnormalities were indicated by the laboratory data. Surgery was recommended for the rapidly growing ovarian tumor. We performed a bilateral salpingo-oophorectomy and total hysterectomy.

Pathological findings

The tumor weighted 3 kg and measured 20×19×10 cm. Its surface was...
smooth and there were no adhesions to surrounding tissues. The solid component of the tumor consisted of lobulated, moderately hard, and yellow to white tissue. Microscopic examination with HE staining revealed a retiform pattern characterized by a network of rete testis. The tubules were lined by a single cuboidal cell with round to oval nuclei that contained only rare mitotic figures. The stromal component with retiform areas was composed of myxomatous and fibrous tissue. The non-retiform areas showed poorly differentiated SSCT that consisted of sarcomatoid stroma. In the papillary areas, the tubules consisted of peg-shaped or columnar cells. Papillary cribriform structures were lined by flat or cuboidal cells (Fig.1). These areas resembled a lung cancer, a well-differentiated adenocarcinoma, or a sclerosing bronchial alveolar carcinoma. Immunohistochemical examinations were performed by the streptavidin-biotin complex method using the following antibodies; (1) anti-surfactant apoprotein (PE-10; obtained from Teijin Co., Japan), (2) anti-EMA, and (3) anti-PAS. Results were positive in only the papillary area with anti-surfactant apoprotein (PE-10) (Fig.2), and anti-EMA. This indicated that the papillary areas were metastatic lung cancer, papillary adenocarcinoma of Clara cell type tissue, in SSCT.

Pathological examination indicated that the tumor was an ovarian SSCT with metastatic lung cancer in FIGO stage Ia. Subsequently, postoperative chemothera-

Fig.1. Hollow tubules lined by well-differentiated cuboidal to columnar cells and papillary adenocarcinoma of Clara cell type (H.E. ×400).
Fig. 2. Papillary adenocarcinoma of Clara cell type show an intensely positive reaction for anti-surfactant apoprotein (PE-10, ×400).

apy was administered using etoposide, 50 mg/kg body weight per day for 14 days with an intraperitoneal infusion of cisplatin, 75 mg/m² given on day 6. Treatment was repeated every 2 months’ for 12 months. Although the patient has lung cancer, she is alive with no evidence of recurrence of the ovarian tumor.

Discussion

The varying histological spectrum of SSCT can lead to confusion in making the diagnosis. Its histological type is a key prognostic factors (Young and Scully, 1983). In this patient case, we had to distinguish between a Sertoli-Leydig cell tumor of the retiform type, with a heterologous component, with clear cell carcinoma been suspected, and metastatic lung cancer. By using a monoclonal antibody PE-10 against surfactant apoprotein, we determined that the papillary areas consisted of metastatic lung cancer. This reagent is considered useful in detecting pulmonary adenocarcinoma (Noguchi et al. 1989; Shimosato and Noguchi, 1993).

There are only few reports of the metastasis of a malignant tumor to a primary ovarian tumor (Hines et al. 1976; Smale, 1980). The metastasis of a lung cancer to the ovary is uncommon, less than 2% in Japan. No cases of metastasis to a primary ovarian tumor have been reported in Japan. To our knowledge, this is the first report of a metastatic lung cancer with a concomitant ovarian Sertoli-stromal cell tumor.
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References


