THE PROGNOSTIC SIGNIFICANCE OF LYMPHOVASCULAR SPACE INVOLVEMENT IN PATIENTS WITH UTERINE-CONFINED ENDOMETRIOID ENDOMETRIAL CANCER

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Objective
We evaluated whether or not lymphovascular space involvement (LVSI) is a risk factor for the relapse of disease in patients with uterine-confined endometrioid endometrial cancer.

Methods
A retrospective chart review was carried out of 165 patients with uterine confined endometrioid-type endometrial cancer after initial treatments including total abdominal or laparoscopic hysterectomy, and bilateral salpingo-oophorectomy, with or without lymphadenectomy, peritoneal washing between 1998 and 2010. The patients with positive peritoneal cytology were not excluded.

Results
The median age was 52 years (range, 26 to 81 years) with a median follow-up of 46 months (range, 1 to 144 months). One hundred twenty-four patients (75.2%) received no adjuvant treatment, 41 patients (24.8%) received adjuvant treatment including platinum-based chemotherapy, radiation therapy, and chemoradiation. LVSI was present in 29 patients (17.6%). Eight patients (4.8%) developed recurrences. Using univariate analysis, age > 50 years, the tumor grade, and LVSI were found to relate to recurrence-free survival ($P < 0.05$). LVSI was associated with other prognostic factors such as old age, a higher tumor grade, and deeper myometrial invasion. But multivariate analysis showed no significance. LVSI was not an independent factor to predict recurrence ($P = 0.093$).

Conclusion
LVSI was associated with an increased likelihood of recurrence via univariate analysis in patients with uterine-confined endometrioid endometrial cancer. Multivariate analysis showed no statistical significance. The presence of LVSI seems to have no effect, in and of itself, to alter the treatment plan or to predict the prognosis.

Keywords: Endometrial cancer; lymphatic vessels; Recurrence
poor survival for several types of gynecologic cancers [4-7]. Once LVSI has occurred, the tumor cells theoretically have the potential to metastasize to regional lymph nodes or further. Thus, LVSI has been noted as an important prognostic factor that is significantly correlated with nodal metastases, tumor recurrence, and patient survival [1,2,8]. The findings of previous studies have been contradictory with respect to the significance of LVSI as an independent prognostic factor. In this study, we focused on patients with uterine-confined endometrioid endometrial cancer. The objective of our study was to evaluate the prognostic significance of lymphovascular space involvement in patients with uterine-confined endometrioid endometrial cancer.

Materials and Methods

We retrospectively reviewed the pathologic and clinical data on all the patients who were diagnosed with endometrial cancer between January 1998 and June 2010 at the Department of Obstetrics and Gynecology, Gil Hospital, Gachon University of Medicine and Science. All the subjects underwent a total abdominal hysterectomy or laparoscopic hysterectomy, bilateral salpingo-oophorectomy (BSO), peritoneal washing cytology, and with/without lymphadenectomy. The patients with uterine-confined endometrial cancer were included. The histology of all the patients was the endometrioid type and all other histologic subtypes were excluded. The patients with positive peritoneal cytology were not excluded. Clinic-pathologic data such as age, tumor grade, myometrial invasion depth, presence of LVSI, presence of hormone receptor, cervical involvement, and peritoneal cytology were reviewed. LVSI was defined as the presence of viable tumor cells in the endothelial-lined channels, that is, either lymphatics or capillaries, outside the tumor mass. The follow-up consisted of three months for first three years, six months for next two years, and then yearly reviews. The patients were routinely followed for at least 5 years. Statistical analysis of the data was performed using chi-square test and Fisher’s exact test in univariate analysis. Cox proportional hazard model was used in multivariate analysis. The odds ratios and 95% confidence intervals were calculated. P-values less than 0.05 were considered significant. Statistics were analyzed using SPSS ver. 18.0 (SPSS, Inc., Chicago, IL, USA).

Results

One hundred sixty-five patients fulfilled the study criteria. All the patients underwent a hysterectomy with BSO surgical treatment. Pelvic lymph node dissection was performed on ninety-five patients and both pelvic and para-aortic lymph node dissection was performed on twenty-four patients. The mean number of removed pelvic lymph nodes was 19.9 ± 16.6 (range, 4 to 73) and the mean number of removed para-aortic lymph nodes was 1.4 ± 4.7 (range, 2 to 32) (Table 1). Twenty-nine (17.6%) patients were found to have LVSI. All the cases were negative for lymph node involvement. Adjuvant treatment was administered to the patients: 23 patients received radiation therapy, six received chemoradiotherapy, and 12 received chemotherapy. Eight patients (4.8%) developed recurrences. The median time to recurrence was 27 months. LVSI was significantly correlated with an increasing depth of myometrial invasion, a higher tumor grade, and age>50 years (P < 0.05) (Table 2). Five-year progression-free survival was significantly associated with age, a higher tumor grade, and LVSI by univariate analysis (Table 3, Fig. 1). But the pathologic factors were not significant in multivariate analysis (Table 4). The median follow-up of the overall patients was 46 months (range, 1 to 144 months). The five-year progression free-survival rate of all patients was 78%. Recurrence occurred in five patients who have LVSI and in three patients who did not have LVSI (Table 5) and there was no death of disease in our patients.

Discussion

LVSI is associated with lymph node metastasis and is evaluated ac-