

## Should we modify the current FIGO staging system for stage IIIC ovarian cancer?

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Ovarian cancer is the leading cause of death among female reproductive tract cancers and the fifth most common overall cause of cancer death among women, with 22,430 newly diagnosed cases and 15,280 cause-specific deaths estimated in the United States in 2007.<sup>1</sup> In Korea, it marks the eighth most common female cancer (3.6%) among 43,627 new total female cancer cases, and cancer death (3.1%) among 24,014 cause-specific deaths.<sup>2</sup>

In 1983, Chen et al. reported the incidence of retroperitoneal lymph node metastases in untreated cases of ovarian carcinoma. The incidence of positive para-aortic nodes in Stage I disease was 18.2%; in Stage II, 20.0%; in Stage III, 41.9%; and in Stage IV, 66.7%. The corresponding incidence of pelvic node metastasis was 9.1% in Stage I, 10.0% in Stage II, 12.9% in Stage III, and 33.3% in Stage IV. In total, the incidence of para-aortic node metastasis overall was 37.7% and of pelvic node metastasis, 14.8%.<sup>3</sup>

Direct relationships between nodal metastasis and clinical stage, tumor grade, and histologic type of tumor have been demonstrated. Grade 3 tumors were associated most frequently with nodal involvement, with an incidence of 52.5% positive para-aortic nodes and 15.5% positive pelvic nodes of. In patients with serous type malignancy, the frequencies of positive para-aortic/pelvic nodes were 44.4%/16.7%, respectively; 50.0%/10.0% in the undifferentiated type, 25.0%/25.0% in the clear cell type, and 14.3%/14.3% in the mucinous type. In the series, 32 patients (52.5%) had positive retroperitoneal nodal involvement. Therefore, they concluded that selective biopsies of the para-aortic and pelvic lymph nodes should be part of any "staging laparotomy" for ovarian carcinoma.<sup>3</sup>

Thereafter, the GOG study confirmed that surgical exploration for early stage carcinoma of the ovary should include biop-

sies of the retroperitoneal pelvic and para-aortic lymph nodes, excision of the infracolic omentum, biopsies of pelvic and abdominal peritoneum, including the right diaphragm, and peritoneal cytologic studies.<sup>4</sup> Therefore in 1986, the International Federation of Gynecology and Obstetrics (FIGO) cancer committee announced that initial comprehensive surgical staging according to FIGO staging systems with maximal cytoreductive surgery for patients with ovarian cancer is important for determining the diagnosis and in identifying prognostic factors.<sup>5</sup>

Since then, surgery has played a key role in the management of this disease, in which the presence of metastatic disease in retroperitoneal lymph nodes is indicative of a poor prognosis.<sup>6</sup> However Carino et al.<sup>7</sup> noticed that a significant increase in survival ( $p=0.04$ ) was found for patients classified as stage IIIC only according to lymph node involvement, compared to patients with peritoneal stage IIIC with positive lymph nodes (3-year survival: 46% vs. 12%). A small increase in survival was observed for node (-) patients compared to node (+) patients, for both stage III and IV, even with the same residual tumor size, but the difference was not statistically significant. A Japanese study also reported that relatively good survival was observed for patients with intraperitoneal tumors limited to the pelvis and lymph node involvement who had underwent systematic aortic and pelvic lymphadenectomy. In other words, Stage III disease based only on lymph node positivity had fairly good survival.<sup>8</sup>

Baek et al.<sup>9</sup> reported almost the same results in this issue. They studied a relatively large numbers of 272 patients with stage IIIC epithelial ovarian cancer who had underwent cytoreductive surgery according to the FIGO guidelines, followed by platinum based chemotherapy from September 1989 to September 2006. The median follow-up period was 37 months, and they observed that patients with stage IIIC disease due to positive nodes only had significantly longer disease-free survival (DFS) and overall survival (OS) compared to other stage IIIC patients ( $p<0.001$  and  $p<0.001$ ). The DFS and OS of these patients was significantly better than those of other stage IIIC patients who achieved complete or optimal cytoreduction ( $p<0.001$  and  $p<0.001$ ). The outcome was even better than that of stage IIIa and IIIb patients ( $p<0.05$

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and  $p < 0.05$ ). Therefore they concluded that patients with stage IIIC epithelial ovarian cancer due to positive nodes only had a more favorable prognosis compared to other stage IIIC patients. Furthermore, they proposed that reevaluation of the current FIGO staging system for stage IIIC epithelial ovarian cancer is required. I think many gynecologic oncologists would agree with this opinion.

In conclusion, the study by Baek et al.<sup>9</sup> provides important information regarding the prognosis of lymph nodes involvement and influence on survival in patients with stage IIIC epithelial ovarian cancer. However the information cannot be directly used to justify the modification of the current FIGO staging system for stage IIIC epithelial ovarian cancer. As with all observational studies, it should be considered to be potential pitfall of the FIGO staging system for epithelial ovarian cancer, and guide clinicians to be aware of the same phenomenon in our patients. We need to wait until more data has accumulated that produces the same and consistent results as in this present study, and, ultimately, to improve survival and patient outcomes.

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