Case JP

(PCS-5514)

Clinical History: F/49. Serous borderline tumor resected 9 years before. Recurrence treated by pelvic and para-aortic lymphadenectomies.

Diagnosis: Serous borderline tumor and low-grade serous carcinoma (in situ and microinvasive) arising from extensive nodal endosalpingiosis.

DISCUSSION

Tumors of borderline malignancy show histologic and cytologic features that are intermediate between those of clearly benign and clearly malignant tumors of the same cell type(s); they exhibit epithelial proliferation greater than that seen in their benign counterparts but an absence of destructive invasion of the stroma, and are associated with a much better prognosis, stage for stage, than that of ovarian carcinomas. Despite this lack of invasiveness within the ovary, these tumors – particularly the serous type - can either implant on peritoneal surfaces or be associated with independent foci of primary peritoneal neoplasia, and rarely, invasion of the underlying tissues occurs in both circumstances; exceptionally, tumors of borderline malignancy spread via lymphatics and blood vessels. In addition, a small number of these tumors are combined with or transform over time into obviously invasive carcinomas. Although favorable in most cases, the biologic behavior of the borderline tumors differs from that of the obviously benign tumors of the same cell type(s); therefore, the designation tumors of borderline malignancy should be kept. Alternative terms such as proliferating, atypical, and atypical proliferating are misleading because they do not imply the malignant potential of a small but significant number of these tumors.

SBTs in Lymph Nodes

- About 23% of SBTs are associated with pelvic and para-aortic lymph nodal involvement.
- Benign glandular (Mullerian) inclusions are found in pelvic and periaortic lymph nodes in up to 41% of female pelvic lymphadenectomies.
- SBTs can develop from these inclusions.
- The distinction between primary nodal and metastatic SBT can be difficult. If the nodal SBT is focal and appears associated with numerous
benign inclusions, it probably represents synchronous neoplasia. Involvement of vascular sinuses suggests metastasis.

Thus, two main pathogenetic mechanisms of lymph node involvement in SBT have been proposed: a) the spread of circulating cells and clusters of SBT to lymph nodes via the lymphatic vessels; and b) development of SBT (or even low-grade serous carcinoma) from nodal endosalpingiosis (non-neoplastic müllerian glands and cystic spaces lined by tubal epithelium).

Recently, it has been demonstrated that nodal endosalpingiosis not only occurs more commonly in SBTs compared with other müllerian malignancies, but also in SBT with lymph node involvement compared with SBT without LNI. There is a statistically significant association between endosalpingiosis and the intraglandular growth of lymph node involvement. It has been proposed that up to a third of patients with SBT and lymph node involvement nodal foci of SBT may derive independently from nodal endosalpingiosis due to field effect.

Whether the lymph node involvement represents synchronous neoplasia or true metastatic SBT, does not change the favorable prognosis of these patients and should not influence their treatment. A recent report, however, has suggested that nodular epithelial aggregates (1-8 mm) often accompanied by desmoplastic stromal reaction and micropapillary architecture are associated with decreased disease-free survival. Rarely, SBTs extend to extra-abdominal lymph nodes including cervical lymph nodes. Occasionally, extensive lymph node metastases occur in patients with invasive peritoneal implants and are associated with poor prognosis.

Another nodal lesion that may cause confusion in the identification of metastatic tumor is the finding of cytokeratin-positive mesothelial cells, singly or in groups, occupying either the subcapsular sinuses or the lymph node parenchyma. This phenomenon is thought to be associated with marked proliferation of these cells as a result of peritoneal involvement by tumor; the mesothelial cells would be subsequently filtered (‘deportation’) from the peritoneal fluid by regional lymph nodes. Immunostaining with a panel of antibodies may be of help. The most useful markers are BerEp4, which reacts with serous tumors but not with mesothelioma. In contrast, calretinin, cytokeratin 5 (CK5), and thrombomodulin, all react with mesothelioma but not with serous carcinomas.
REFERENCES


