Letters to the Editor

CORRESPONDENCE RE: MIKAMI Y, HATA S, KIYOKAWA T, MANABE T. EXPRESSION OF CD10 IN MALIGNANT MULLERIAN MIXED TUMORS AND ADENOSARCOMAS: AN IMMUNOHISTOCHEMICAL STUDY. MOD PATHOL 2002;15:923–30.

To the Editor: CD10 has been described as a good marker of mesonephric lesions and was considered to be useful in differential diagnosis between mesonephric carcinoma and endometrioid carcinoma (1). Therefore, it was quite surprising that Mikami *et al.* (2) observed CD10 positivity in epithelial component of uterine carcinosarcomas that are in fact non-mesonephric mullerian derived (often endometrioid) carcinomas with sarcomatous metaplasia (3). So I decided to try to find out whether CD10 can be positive also in common endometrioid carcinomas. We have performed CD10 immunostain (56C6, Neomarkers, Fremont) on a small series of 12 cases of uterine carcinomas. Nine tumors were found in curettage specimen and three in ectomy specimens. Age of the patients ranged from 49 to 81 years (mean 58 years). Ten cases were common endometrioid carcinomas (Fig. 1A), and two tumors were serous papillary carcinomas of the uterine corpus.

Four (40%) of 10 endometrioid carcinomas showed CD10 positivity, whereas both papillary serous carcinomas were CD10 negative. The reactivity showed apical-luminal and membranous pattern (Fig. 1B), and, to a lesser extent, it was seen in the cell cytoplasm. In two cases, approximately one-third of neoplastic cells showed CD10 positivity, whereas in a further two tumors only scattered CD10+ cells were found. CD10+ cells were seen in both well-formed glandular and poorly differentiated areas. Squamoid structures had a tendency to be CD10-positive.

This result demonstrates that CD10 can be positive in endometrioid carcinomas, and that CD10 positivity in epithelial component of uterine carcinosarcoma is still consistent with mullerian (*i.e.*, non-mesonephric) derivation of this tumor. CD10 positivity in endometrioid carcinoma can be sometimes quite strong, and it can mimic CD10 reactivity of mesonephric carcinoma. For that reason, CD10 should be used for differential diagnosis between endometrioid and mesonephric carcinoma with caution, perhaps being useful only in cases with none or scattered positivity that will favor an endometrioid differentiation. Endometrioid carcinoma can be included in the expanding list of CD10-positive carcinomas of various locations (4, 5).

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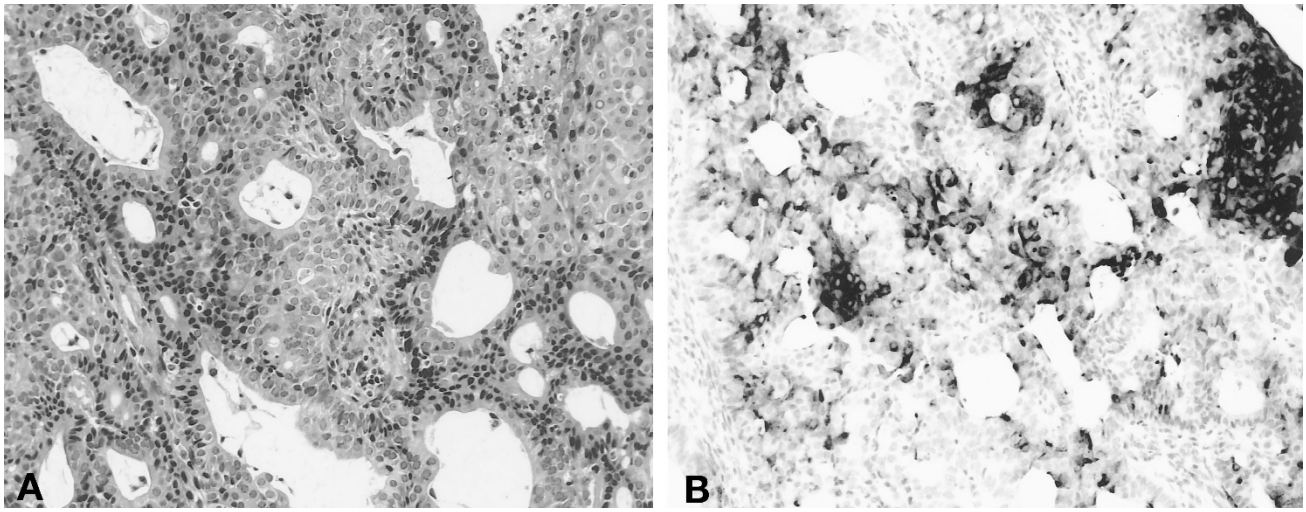

FIGURE 1. Conventional endometrioid adenocarcinoma (**A**) with focal squamoid area (***top and right***) contains numerous CD10-positive cells (**B**). More intense immunostaining of that squamoid area is well seen.

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In reply: We appreciate Dr. Zamecnik's editorial comments regarding the expression of CD10 in endometrial carcinomas. As he mentioned, we observed CD10 expression in components of carcinoma in malignant mullerian mixed tumors (MMMTs) (1), which is not a rare event. Recent papers have demonstrated the utility of CD10 in diagnosing or excluding endometrial stromal sarcomas (ESSs) (2, 3). However, following the recent publication of an intriguing paper describing CD10 expression in mesonephric adenocarcinomas (4), Ordi *et al.* recently demonstrated that a variety of mesonephric duct-derived tissues, including mesonephric remnants (mesonephric remnants of the uterine cervix, epoophoron, rete ovarii), and tumors of wolffian origin of the broad ligament and ovary, are positive for CD10. However, CD10 was almost invariably negative in mullerian epithelia of the female genital tract and in their corresponding tumors, with the exception of focal expression found in squamous epithelia and tumors with squamous differentiation (5). CD10 was also positive in the syncytiotrophoblast, cytotrophoblast, and intermediate trophoblast of normal gestations, partial and complete moles, choriocarcinoma, and placental site trophoblastic tumors (5).

Interestingly, as described by Ordi *et al.*, Suzuki and colleagues showed CD10 expression in portions of squamous differentiation in endometrioid adenocarcinomas (6). We also identified focal CD10 expression in the foci of squamous differentiation in components of adenocarcinoma in MMMTs (Fig. 1) (1). The significance of this observation remains unclear. However, we believe that CD10 expression is neither origin-specific nor organ-specific as evidenced by CD10 expression in a variety of tumors including epithelial and non-epithelial neoplasms as shown by Chu *et al.* (7). Although consistent CD10 expression in mesonephric adenocarcinoma appears to be a diagnostic finding supporting the diagnosis, interpretation of CD10 expression should be performed with great caution. In this regard, we agree with the warning by Dr. Zamecnik. CD10 immunohistochemistry appears to be a useful diagnostic tool in our routine pathology practice, when combined with a constellation of morphologic features as well as clinical information.

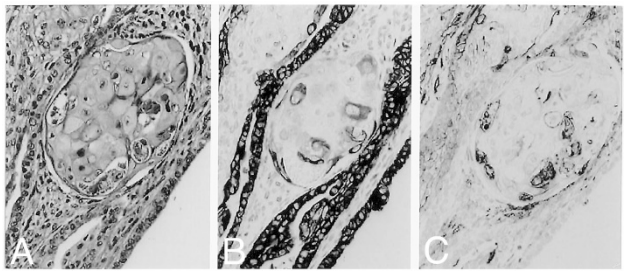

FIGURE 1. Adenocarcinoma with squamous differentiation (A) in a malignant mullerian mixed tumor (MMMT). The portion of the tumor showing squamous differentiation as well as typical adenocarcinomatous component is immuno-positive for cytokeratin (AE1/AE3)(B) and CD10 (C).

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