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Expression of CA 125 in Adenomyosis (With 1 color plate)

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Key Words

CA 125

Adenomyosis

Immunohistochemistry

Abstract

To investigate the histogenic and cytogenic localization of CA 125 in patients with adenomyosis, sections from 8 adenomyosis cases were expressed with monoclonal anti-CA 125 antibodies. Consequently, CA 125 proved to be present on the glandular epithelium localized in muscle layers of adenomyosis.

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Introduction

We reported [1] that considerably higher levels of serum CA 125 were observed in patients with adenomyosis and that serum CA 125 could serve as a good marker to differentiate adenomyosis from uterine myoma. We have now used CA 125 for an immuno-histochemical diagnosis of adenomyosis.

Materials and Methods

CA 125 levels in 8 patients with adenomyosis and in 1 with serous cystadenocarcinoma of ovary were measured preoperatively, using an excised CA 125 RIA kit. Nonfixed, fresh frozen sections from 8 adenomyosis cases were stained with hematoxylin and eosin. Serial sections were expressed with monoclonal anti-CA 125 antibodies using the avidin-biotin-peroxidase (ABC) technique [2]. The monoclonal anti-CA 125 antibody was purchased from Centocor, Inc., Malvern, Pa., USA. Normal mouse serum instead of primary specific antibody was used as the negative control and a formalin-fixed, paraffin-embedded section of a serous cystadenocarcinoma of ovary, which was highly CA 125-reactive, was used as the positive control. The final reaction was achieved with diaminobenzidine and methylgreen.

Results

All 8 patients with adenomyosis had serum CA 125 levels in excess of 39 U/ml (range from 43 to 190 U/ml) and the serum CA 125 level in 1 patient with serous cystadenocarcinoma of ovary was 20,000 U/ml preoperatively. In histopathological studies of the adenomyosis, the lesions contained glandular epithelium and closely resembled normal endometrium and stromal cells. The immunohistochemical evidence was similar in all 8 cases. CA 125 was demonstrated immunohistochemically in the glandular epi-

CA 125 and Adenomyosis

thelial cells in case of adenomyosis, while stromal cells and muscle fiber cells were CA 125-negative (fig. 1). The normal endometrial glandular epithelium was also CA 125-positive (fig. 2).

Discussion

CA 125 was detectable on the surface epithelial cells of ovarian epithelial tumors [3] and in the fallopian tube, normal endometrium and endocervix [4]. Glycoprotein is present in the fetal coelomic epithelium [4]. It has heretofore not been expressed immuno-histochemically in cases of adenomyosis. We reported [1] that serum CA 125 levels in patients with adenomyosis were high preoperatively, but the reason for these high levels was not given. In the present study, we confirmed that CA 125 was present on the normal endometrial glandular epithelium and glandular epithelium localized in muscle layers of adenomyosis. Thus, the high levels of serum CA 125 are closely related to the number of endometrial glandular cells in patients with adenomyosis. The histogenic and cytogenic localization of expression of CA 125 in patients with adenomyosis is now under investigation.

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