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Elevated Serum CA-125 in a Patient with Follicular Lymphoma and a History of Ovarian Cancer

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Key Words

Follicular lymphoma · Ovarian Cancer · CA-125

Abstract

A patient with a previous history of epithelial ovarian cancer presented to her physician with diffuse adenopathy. On subsequent evaluation, she was found to have a follicular lymphoma. Work-up revealed an elevated serum CA-125 antigen level, raising the question of whether the laboratory abnormality represented evidence of recurrence of the original epithelial cancer. The subsequent major decline in this tumor marker following treatment directed to the lymphoma provided strong support for the conclusion that the elevated CA-125 was secondary to this malignant process and not ovarian cancer.

Case Report

A 56-year-old female presented to her primary care physician with sharp left upper quadrant pain of 2 weeks' duration. She was found to be pancytopenic. Work-up including a CT scan of her chest, abdomen and pelvis revealed cervical, axillary, retroperitoneal, mesenteric, periceliac and porta hepatis lymphadenopathy, and marked splenomegaly. Left axillary fine needle aspiration revealed a grade II–III/III follicular lymphoma. A bone marrow biopsy showed a normocellular bone marrow without involvement of the lymphoma.

Serum CA-125 antigen level at diagnosis was 612 U/ml. Of note, 2 years prior to the current presentation, the patient had been found to have a poorly differentiated, serous stage IIA ovarian cancer with papillary features. She had been treated with a total abdominal hysterectomy and bilateral salpingoophorectomy, followed by 6 cycles of carboplatin and paclitaxel administered by her local oncologist. There had been no evidence of disease recurrence since that time and the serum CA-125 had remained in the normal range until 1 year prior to her diagnosis of follicular lymphoma. A CT scan was performed at that point and showed pelvic lymphadenopathy and splenomegaly. She was given the option of watchful waiting, hormone treatment, or chemotherapy for recurrent ovarian cancer by her

local oncologist. She decided on watchful waiting and came to Cancer Treatment Centers of America a year later for a second opinion.

The patient received 2 weekly treatments with rituximab and her CA-125 level decreased from 612 to 242 U/ml. Moreover, on physical exam her spleen size had normalized. She then received 2 cycles of bendamustine plus rituximab and CA-125 returned to a normal level (15.7 U/ml). A repeat CAT scan showed complete resolution of her lymphadenopathy and splenomegaly.

Discussion

Serum level of Ca-125 is a well-recognized marker for the biological activity of epithelial ovarian cancer [1]. However, the test is rather non-specific, being abnormal in a number of malignant and non-malignant conditions.

Several reports have noted elevated levels of CA-125 in both non-Hodgkin's lymphoma (NHL) and Hodgkin's lymphoma. It has been suggested that CA-125 might be produced by mesothelial cells in response to cytokines released by the lymphoma cells [2–8]. There appears to be a strong association between increased serum CA-125 levels in lymphomas and evidence of abdominal involvement with the malignant process [7, 8].

In a report by Benboubker et al. [3], the serum level of CA-125 was frequently increased in a subgroup of patients with NHL and correlated with poor outcome in low-grade NHL. In another study, Lazzarino et al. [7] found an elevated CA-125 in 40% of patients with NHL which normalized in individuals who attained a complete remission.

In conclusion, the serum CA-125 antigen level is frequently elevated in a subgroup of patients with NHL and may be a useful tool to assess response to treatment. Further, as in epithelial ovarian cancer, this blood marker may be rationally employed as a strategy to monitor the status of disease following the completion of the delivery of anti-neoplastic drug therapy.

Finally, this case serves as an excellent example of the need to consider reasonable alternative explanations for a documented rise in a non-specific serum tumor maker.

References

- 1 Bast RC, Klug TL, St. John E, et al: A radioimmunoassay using a monoclonal antibody to monitor the course of epithelial ovarian cancer. *N Engl J Med* 1983;309:883–887.
- 2 Birgen D, Ertem U, Duru F, et al: Serum CA125 levels in children with acute leukemia and lymphoma. *Leuk Lymphoma* 2005;46:1177–1181.
- 3 Benboubker L, Valat C, Linassier C, et al: A new serologic index for low-grade non-Hodgkin's lymphoma based on initial CA125 and LDH serum levels. *Ann Oncol* 2000;11:1485–1491.
- 4 Battle M, Ribera JM, Oriol A, et al: Usefulness of tumor markers CA 125 and CA 15.3 at diagnosis and during follow-up in non-Hodgkin's lymphoma: a study of 200 patients. *Leuk Lymphoma* 2005;46:1471–1476.
- 5 Wei G, Yuping Z, Jun W, Bing Y, Qiaohua Z: CA125 expression in patients with non-Hodgkin's lymphoma. *Leuk Lymphoma* 2006;47:1322–1326.
- 6 Bonnet C, Beguin Y, Fassotte MF, Seidel L, Luyckx F, Fillet G: Limited usefulness of CA125 measurement in the management of Hodgkin's and non-Hodgkin's lymphoma. *Eur J Haematol* 2007;78:399–404.
- 7 Lazzarino M, Oriandi E, Klersy C, et al: Serum CA125 is of clinical value in the staging and follow-up of patients with non-Hodgkin's lymphoma: correlation with tumor parameters and disease activity. *Cancer* 1998;82:576–582.
- 8 Kuroda H, Kida M, Watanabe H, Shirao S, Konda K: Serum CA125 level associated with disease activity in a patient with follicular lymphoma. Division of Gastroenterology, Chitose City Hospital. *Rinsho Ketsueki* 2005;46:281–283.