Malignant primary peritoneal mesothelioma: report of two cases and review of literature

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Summary

Introduction: Malignant primary peritoneal mesothelioma is a rare and highly aggressive tumor. This tumor can be misdiagnosed as ovarian carcinoma. *Case:* Two cases of malignant primary peritoneal mesothelioma that were misdiagnosed as ovarian carcinoma were operated in our instutition. Patients were 74 and 45 years-old at admittance. *Conclusion:* Malignant primary peritoneal mesothelioma is being a problem for gynecologic oncologists because of the close similarity with epithelial ovarian cancer. Diagnosis and treatment of these patients are still under debate.

Key words: Peritoneal mesothelioma; Diagnosis; Epithelial ovarian cancer.

Introduction

Malignant peritoneal mesothelioma (MPM) is an uncommon and very aggresssive tumor. The first report of this disease was by Miller and Wynn in 1908 [1]. Since then many treatment methods as surgery, chemotherapy, and radiotherapy were proposed and used but none seemed to alter the natural progression of this disease [2-4]. Treatment methods and survival figures for this malignancy are limited and ineffective. Oncogenetic mechanisms and tumor behavior which cause aggresiveness and poor response to therapy are still under investigation. Aggressive cytoreductive surgery and adjuvant chemotherapy are accepted as the definitive treatment method. Adjuvant chemotherapy method is accepted as hyperthermic intraperithoneal chemotherapy (HIPEC). Patients who suffer from this cancer type usually present with abdominal pain or distention. Many of these patients are operated by gynecologic oncologists because of very similar symptoms and findings with epithelial ovarian cancer. The differential diagnosis between this rare but aggressive tumor and both serous papillary carcinoma of the ovary and peritoneum is a problem [5-7].

Case Reports

Patient 1

A 74-year-old woman was admitted to our clinic with complaints of abdominal distention and gastrointestinal (GI) problems. On examination her abdomen was distended and no obvious mass was palpated. An abdominal ultrasonography (US) revealed diffuse ascites, peritoneal implants, and a tumoral mass of 14 cm in diameter located on the transverse colon and omentum. Abdominal computed tomography (CT) scan showed a large mass on the transverse colon (15 x 15 cm). A serologic survey including CA125, CA 19-9, CA 15-3, carcino embryonic antigen (CEA), and alpha feto protein (AFP) levels were studied and were all found to be in normal ranges. A laparotomy was carried out and total abdominal hysterectomy with bilateral salpingo-oophorectomy (TAH+BSO), infracolic omentectomy, bilateral pelvic and paraaortic lymphadenectomy, and segmental colon resection were performed and there were many peritoneal implants. Pathologic evaluation of the specimen was reported as well-differentiated papillary peritoneal mesothelioma (WDPPM). Pathologic differential diagnosis was made by the immunhistochemical analysis results; and tumor was found to be positive for calretinin, CK7, CD56, mezothelin, and CA125 while negative for CK20, CDX2, chromogranin, synaptophysin, and CD15 (Figure 1). The patient was referred to the medical oncology department for adjuvant chemotherapy after an uncomplicated recovery period.

Patient 2

A 45-year-old woman was admitted to a gynecology clinic with the complaint of abdominal distension and pain. Abdominal US in that clinic revealed a pelvic cystic mass and the patient was operated. She was found to have frozen pelvis which was determined to be inappropriate for surgery. Peritoneal and tumoral biopsies were done and surgery was completed. The pathology result was reported as primary peritoneal mesothelioma (positively stained for Calretinin, CK7, HBME-1, and negative for CEA). Abdominal and thorax CT scans were done and the thorax was found to be normal. An abdominal scan revealed that the pelvis was full of tumoral mass as “frozen pelvis”, omental caking, retroperitoneal enlarged lymph nodes, and ascites. The patient was referred to our gynecologic oncology clinic for further evaluation and treatment.

A second laparotomy was decided together with the general surgeons. The gynecologic oncology team was invited because of the frozen pelvis. Patient had a second laparotomy and TAH+BSO, infracolic omentectomy, bilateral pelvic and paraaortic lymphadenectomy, appendectomy and peritoneal debulking were carried out. Pathologic evaluation reported a primary epitheloid mesothelioma with deciduoid variant

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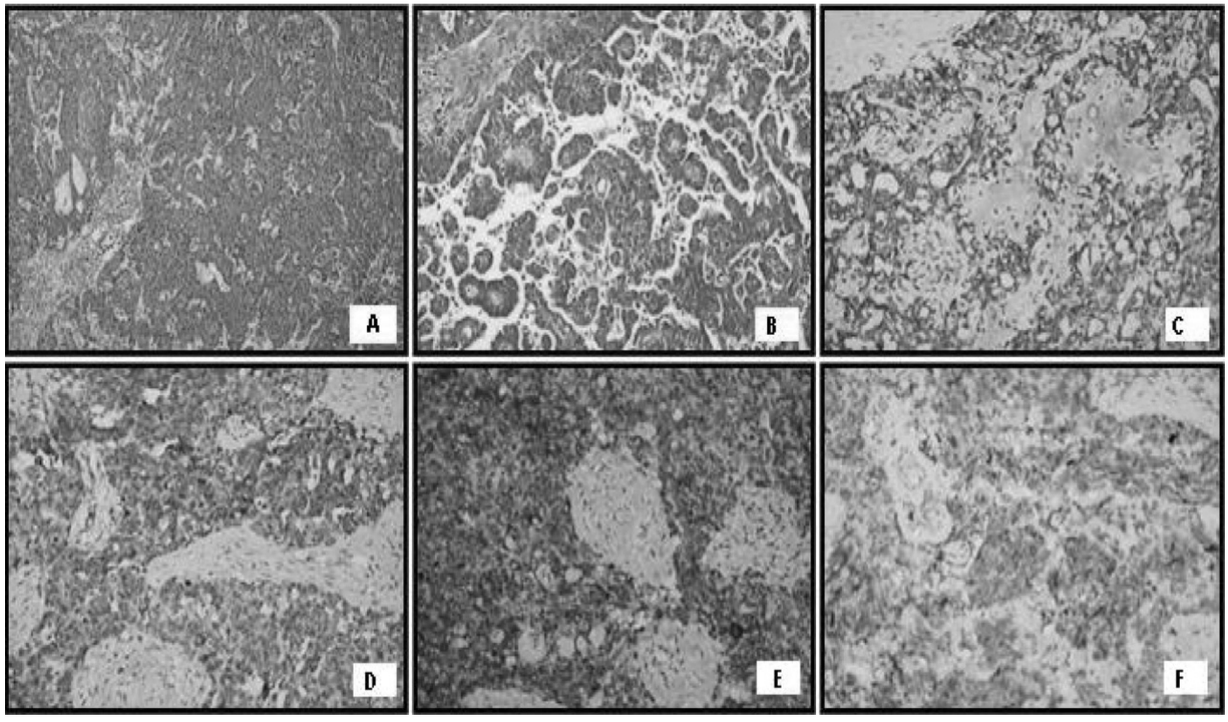

Figure 1. — Tumor having solid (A; HE x100) and papillary growth (B; HE x100) of cells with large cytoplasm, vesicular nuclei and positively stained with CK7 (C), calretinin (D), mezothelin (E), and CD56 (F) (x400).

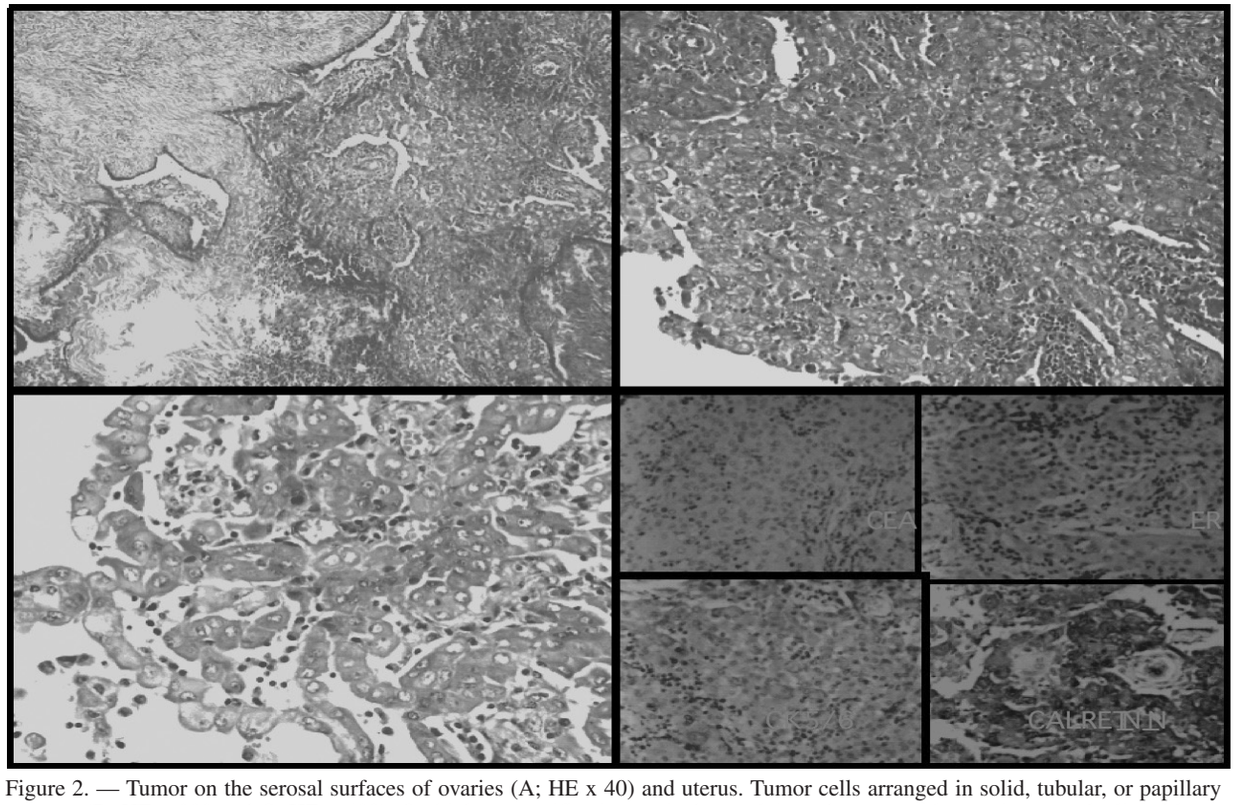

Figure 2. — Tumor on the serosal surfaces of ovaries (A; HE x 40) and uterus. Tumor cells arranged in solid, tubular, or papillary patterns (B; HE x 200 and C; HE x 400). On higher magnification vesicular nuclei can be seen with prominent nucleoli and large polygonal cytoplasm remiscent of desidual cells (C). Immunohistochemical studies show calretinin and CK5/6 positivity, with negative CEA, ER, and PR.

(Figure 2). The patient was referred to the medical oncology department for adjuvant chemotherapy after an uncomplicated postoperative period.

Conclusion

Mesotheliomas are tumors usually arising from the pleural cavity, and some from peritoneal surfaces. This tumor type usually runs a rapid and fatal course [8] and occurs mostly in the fifth and seventh decades of life [9]. The most common admittance symptoms of these patients are abdominal pain and and increasing abdominal girth. The classic knowledge includes asbestos exposure for the etiologic risk factors of this disease, but only 58% of peritoneal mesothelioma cases had this exposure in the past. Decreasing usage and control of asbestos exposure also render this etiopathologic relation more suspicious today. Many of these patients are diagnosed as having ovarian carcinoma and are operated by gynecologic oncologists in a similar method with ovarian carcinoma. The main differential diagnosis is primarily made on the basis of immunohistochemistry that yields positive staining of calretinin, Wilm's tumor-1 antigen, mesothelin, and antimesothelial cell antibody-1 [6]. Definitive surgical therapy is the main treatment and should include cytoreductive surgery, the same as for ovarian carcinoma. Gynecologic oncologists are becoming more important for the disease diagnosis and treatment because of their experience in late stage epithelial ovarian carcinoma treatment. Gynecologic oncology consultation should be the main evaluation in these patients that are admitted to general surgery and gastroenterology clinics.

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