A Long Surviving Case of Pseudomeigs’ Syndrome Caused by Krukenberg Tumor of the Stomach

Bahadir Cetin, Sabahattin Aslan, Melih Akinci, Can Atalay and Abdullah Cetin

Ankara Oncology Hospital, Department of Surgery, Ankara, Turkey

Received April 4, 2004; accepted November 4, 2004

Meigs syndrome is defined as the triad of benign ovarian tumor with ascites and pleural effusion that resolve after resection of the tumor. Pseudomeigs’ syndrome is a serious disease characterized by malignant ovarian tumor, but ascites and hydrothorax usually reveal no malignant cells. Here, we report a 47-year-old pre-menapausal female patient with cardiaca cancer. Nearly 14 months after D3 dissection, she developed Krukenberg tumors on both ovaries causing a Pseudomeigs’ syndrome with benign ascites and right hydrothorax, which resolved dramatically after resection of the tumors and rectouterine pouch peritonectomy. She survived nearly 3 years after metastasectomy with a total survival of 46 months. The patient died because of massive liver metastases. The present case suggests that Pseudomeigs’ syndrome should be considered in patients with Krukenberg tumors, ascites and hydrothorax and that resection of the tumors may bring long-term palliation.

Key words: gastric cancer – Krukenberg tumor – Pseudomeigs’ syndrome

INTRODUCTION

Krukenberg tumors are metastatic tumors of the ovaries (1). Meigs’ syndrome is characterized by benign ascites and hydrothorax caused by the fibrous neoplasm, generally fibromas of the ovaries (2,3). Rarely ovarian malignancy and even, to a lesser extent, metastatic tumors of the ovaries can cause the same syndrome with benign hydrothorax and ascites. In those cases, the condition is called Pseudomeigs’ syndrome (2,3). In both syndromes, tumor excision cures ascites and hydrothorax (3).

We would like to share our own experience of a gastric carcinoma patient with Krukenberg tumors on both ovaries causing a Pseudomeigs’ syndrome and to review the relevant literature.

CASE

A 47-year-old pre-menapausal female patient was admitted to our hospital with an endoscopic and pathological diagnosis of undifferentiated adenocarcinoma located on the cardia and the lesser curvature of the stomach. The physical examination, radiological imaging and laboratory tests were normal. At laparotomy, gastric cancer located at the cardia and the lesser curvature invading the serosa was identified. No visceral metastases, no peritoneal involvement and no ascites were noted. Cytological examination of peritoneal washing revealed no malignancy. A total gastrectomy with D3 dissection including splenectomy, cholecystectomy and omentobursectomy was performed. Post-operative histological examination of the specimen was reported as poorly differentiated adenocarcinoma of the stomach invading the serosa with clear surgical margins and metastases of five of the 16 lesser curvature lymph nodes but no other metastases in the remaining 49. The Medical Oncology Department offered 5-fluorourasil (500 mg/m²) and calcium folinate (20 mg/m²) for 5 days monthly, but the patient refused chemotherapy after the first cycle. The patient did not visit our hospital for 13.5 months until she developed cachexia, dyspnea, massive ascites, right sided hydrothorax and mobile tumors of nearly 10 cm on both ovaries. She also suffered from difficulty of defecation possibly because of the masses. The Medical Oncology and Gynecology Departments offered no additional therapy. A right chest tube drainage relieved her dyspnea. Repeated cytological examinations of the ascites and hydrothorax revealed no malignant cells. As the metastatic tumors on both ovaries were large and debilitating [computed tomography (CT) or ultrasound images are not available for technical reasons], palliative oopherectomy was offered. After the patient’s consent was obtained, both ovaries and the two metastatic nodules (each 0.5 cm in size) located on the peritoneum lining the rectouterine pouch were removed under spinal anesthesia. Post-operative convalescence of the patient was striking: the ascites and the hydrothorax were totally resolved within a week together with disappearance of anorexia and defecation.
Long-term survival for Pseudomeigs’ syndrome

DISCUSSION

Meigs’ syndrome is characterized by the presence of benign ascites and hydrothorax in association with benign fibrous ovarian tumors such as fibromas (2). Fluid accumulation is more common with ovarian fibromas >6 cm (2). The pathophysiology of ascites is speculative. The proposed mechanisms are irritation of the peritoneal surfaces by the tumor itself, direct pressure on surrounding lymphatic or blood vessels, hormonal stimulation, tumor torsion and release of mediators. The etiology of the pleural effusion is also unclear. The pathogenesis possibly can be explained by the transfer of ascitic fluid via transdiaphragmatic lymphatic channels and diaphragmatic defects (4,5). Sometimes this clinical picture is encountered with other ovarian tumors, especially ovarian malignancies including metastatic tumors of the ovaries such as Krukenberg tumors. This clinical picture with benign ascites and pleural effusion is termed Pseudomeigs’ syndrome (2,3). Pseudomeigs’ syndrome is a serious condition in association with malignant ovarian tumor, but ascites and hydrothorax usually reveal no malignant cells (3,6,7). Cytological examination of the body cavity effusions may help to differentiate between reactive process and tumor spread. While detection of malignant cells is a sign of metastatic disease and a sign of poor prognosis, benign effusions affect neither disease stage nor the patient’s prognosis (7). As distinction between mesothelial reaction and cancer cells can be difficult, immunocytochemistry can be employed in equivocal cases (7). Resection is the treatment of choice for Meigs’ syndrome, and it may also provide a long-term palliation in Pseudomeigs syndrome (3,7,8). In our case, repeated cytological examinations from ascites and hydrothorax revealed no malignant cells. The present case is the second report of Pseudomeigs’ syndrome caused by Krukenberg tumor from stomach cancer. Because ascites and hydrothorax usually are the signs of terminal malignant illness, some other cases may be misdiagnosed. The important lesson of this case is that Pseudomeigs’ syndrome should be considered for differential diagnosis in benign ascites and hydrothorax encountered in cancer patients.

In 1896, Krukenberg described what he presumed was a new type of primary ovarian neoplasm, and the true metastatic nature of this lesion was established 6 years later (9). Krukenberg tumor arises in the ovarian stroma and has characteristic mucin-filled signet ring cells (6). The other tumor metastases to the ovary do not have the classical histological appearance of a Krukenberg tumor. Accounting for 30–40% of cancers metastatic to the ovaries, Krukenberg tumors are rare (6,10). In spite of the definitions, some authors call all ovarian metastases Krukenberg tumor but others limit definition only for either gastrointestinal cancer metastases or stomach cancer (7,10). Krukenberg tumors are more common in pre-menopausal women (10,11). Review of the literature has identified a number of diagnostic and management issues that appear to impact on survival. Median survival times show a significant variation, the worst for gastric primary with 7.7 months and the best for endometrium cancer with 3.4 years (8). Although metastases of primary tumor to the ovary were reported to be a poor prognostic factor, the absence of residual disease after treatment and limited spread of disease are favorable prognostic factors (1). Patients with disease confined to the ovaries have been reported to have a better survival than patients with disease spreading to other pelvic and abdominal sites (1). For the present case, a short survival was expected. This was because, first of all, the primary cancer was a stomach cancer and, secondly, she had disease spread to the pelvis (two peritoneal metastatic nodules in the rectouterine pouch) which were signs of a poor outcome (1,8,12). The second intervention was thus palliative to relieve her symptoms. Contrary to the poor prediction, however, she survived nearly 3 years after that operation and total survival reached 46 months.

In the literature, some authors advocate resection of Krukenberg and other metastatic tumors of the ovary as this provides higher survival advantage than doing nothing (1,3,10,13,14). Others suggest prophylactic oophorectomy for gastrointestinal cancers in both pre- and post-menopausal patients as this would eliminate at least the need for a repeat laparatomy and may improve the prognosis (3,9,10,11,15).
In conclusion, the most important message from this case is that Krukenberg tumors from gastric cancer may cause benign ascites and hydrothorax, or Pseudomeigs’ syndrome, and tumor resection may provide a long-term palliation.

References