Pseudo-Meigs’ Syndrome Caused by a Krukenberg Tumour of Gastric Cancer

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Abstract

A 50-year-old woman who presented with a one-month history of abdominal fullness and dyspnoea was admitted to our hospital. Esophagogastroduodenoscopy showed the scirrhous-type gastric cancer on the greater curvature of the gastric body. Computed tomography revealed bilateral large ovarian tumours with massive right pleural effusion and ascites. A repeated cytological examination of pleural effusion and ascites revealed no malignant cells. The definitive diagnosis of pseudo-Meigs’ syndrome was made by confirming the fact that pleural effusion and ascites disappeared after bilateral oophorectomy. Resection of ovarian tumours may also lead to long-term survival, even in the patients with pseudo-Meigs’ syndrome caused by gastric cancer.

Key words: pseudo-Meigs’ syndrome, gastric cancer, Krukenberg tumour, oophorectomy


Case Report

A 50-year-old woman who presented with a one-month history of abdominal fullness and dyspnoea was admitted to our hospital. Esophagogastroduodenoscopy showed scirrhous-type gastric cancer on the greater curvature of the middle gastric body (Fig. 1A). A biopsy specimen revealed a poorly differentiated adenocarcinoma (Fig. 1B). Computed tomography (CT) revealed bilateral large ovarian tumours with massive ascites (Fig. 1C, D) and para-aortic lymph node swelling. A chest X-ray showed right pleural effusion (Fig. 2A) and the coronal section of the CT image showed right pleural effusion and ascites (Fig. 2B). The laboratory studies indicated that the serum carbohydrate antigen (CA) 19-9 and CA125 levels were 559.7 U/mL (normal range, <37) and 489.8 U/mL (normal range, <35), respectively. No peritoneal metastasis was detected by CT, and a repeated cytological examination of the pleural effusion and ascites revealed no malignant cells. Because the ovarian tumours caused pain and debilitation, palliative oophorectomy with the removal of ascites was performed without neoadjuvant chemotherapy (Fig. 3A). The histopathological findings revealed the presence of poorly differentiated adenocarcinoma, which was similar to the gastric cancer of the primary region (Fig. 3B). After oophorectomy, the pleural effusion vanished immediately (Fig. 4), suggesting pseudo-Meigs’ syndrome (P-MS). Subsequently, systemic chemotherapy was initiated. Because marked tumour shrinkage was achieved after seven courses of TS-1/CDDP therapy, distal gastrectomy was performed (1). However, peritoneal metastases were confirmed during surgery. Despite the continued systemic chemotherapy (TS-1→paclitaxel→irinotecan), the patient ultimately succumbed to the disease 27 months after oophorectomy. No re-accumulation of the pleural effusion or ascites was observed until peritonitis carcinomatosa developed.

Discussion

In 1937, Meigs and Cass described Meigs’ syndrome (MS) as a benign ovarian fibroma associated with ascites
Figure 1. Scirrhous-type gastric cancer was located on the greater curvature of the middle body (A). A biopsy specimen revealed poorly differentiated adenocarcinoma (B). Computed tomography revealed bilateral large ovarian tumours (C, D).

Figure 2. A chest X-ray showed right pleural effusion on admission (A). The coronal section CT image showed right pleural effusion and ascites (B).

Figure 3. Macroscopic findings of the resected ovarian specimens are shown (A). The histopathological findings revealed a poorly differentiated adenocarcinoma, which was similar to the gastric cancer (B).
and hydrothorax that resolved on removal of the fibroma. Meigs distinguished the definition of MS from P-MS according to the histology of the primary tumour (2). He attributed the name P-MS to pelvic pathology other than benign ovarian tumours that caused the same clinical picture (3). In 1950, Dick et al. reported the first case of P-MS caused by a Krukenberg tumour of gastric cancer (4). Since then, only eight cases have been reported: two cases in the English literature (4, 5), two in the Japanese literature (6, 7), and four in Japanese proceedings. Characteristically, the onset age is relatively young and all of the pathologies were the diffuse-type gastric cancer. Pleural effusion is more prevalent on the right side, and the ovarian tumour is predominantly bilateral. The final survival times previously described in the literature were 32.5 (5), 27 (present case), and 17 months (7), which is longer than typical for stage IV gastric cancer (median survival time of approximately 12 months). These reports suggest that resection of ovarian tumours may provide not only a palliative benefit, but also lead to long-term survival in patients with and without P-MS (8, 9). However, the reason why resection of ovarian tumours may lead to long-term survival remains unclear. One possible reason is that metastasectomy for ovarian tumour often leads to the improvement of the performance status, which makes it possible to continue adequate systemic chemotherapy.

In conclusion, gastric cancer with metastatic disease to the ovary may result in P-MS. The recognition of this syndrome may allow for a prompt diagnosis and appropriate treatment, including resection of the ovarian tumours.

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References