Video Article

Laparoscopic and imaging findings of growing teratoma syndrome

Taşkın et al. Growing teratoma syndrome

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Abstract

Growing teratoma syndrome (GTS) occurs during post-treatment observation of ovarian malignant germ cell tumors. The characteristic features of this syndrome are normal tumor markers' level and to be revealed tumoral mass or implants at imaging studies. We report a case of growing teratoma syndrome in a 22-year-old woman with malignant germ cell tumor. After staging surgery and chemotherapy, computerized tomography showed peritoneal implants. Laparoscopy was planned to exclude malignant recurrence. During laparoscopy, smooth and pink lesions were seen at the lateral pelvic wall. Histopathologic evaluation showed that mature teratoma tissue with extensive mature glial components. GTS is not a malignant condition and the benefit of radical surgical intervention in cases without mass-related complication has not been proved. GTS should be kept in mind after primary treatment of ovarian immature teratoma.

Keywords: Growing teratoma syndrome, laparoscopy, management

Introduction

A 19 year-old nulli-gravid young woman with massive ascites and abdominal mass was referred to our clinic. Laboratory examinations revealed elevated tumor markers (AFP: 922.4 ng/mL, CA 125: 331 U/mL, CA 19-9: 418.1 U/mL). Computed tomography revealed a huge mass filling the abdomen and large amount of ascites (Figure 1). Midline laparotomy was performed due to the pre-diagnosis of ovarian malignant germ cell tumor. During the intraoperative observation a huge left side ovarian mass and massive peritoneal-omental implants were detected. Subsequently, left salphingo-oophorectomy, total omentectomy, peritonectomy, bilateral pelvic and para-aortic lymph node dissection were performed. There was no residual tumor at the end of the surgery. Final pathology was stage IIIC immature teratoma with retroperitoneal lymph nodes involvement. Four cycles of bleomycine-etoposide-paclitaxel (BEP) chemotherapy was administered. At the end of the treatment tumor markers were within normal range.

Two months after chemotherapy (6 months after the operation), during routine follow-up visit, CT examination revealed peritoneal implants (Figure 2). Tumor markers were within normal ranges. The patient was asymptomatic. Recurrence of malignant germ cell tumor was not expected and in turn laparoscopy for further differential diagnosis was scheduled. During laparoscopy, smooth and pinky lesions were detected at the lateral pelvic wall (Figure 3) (Video 1). These lesions were superficial and easily removable. There was no invasion to the sub-tissue. The operation was completed after taking multiple biopsies from the lesions detected.

There were no postoperative complications. Histo-pathologic evaluation revealed mature teratoma tissue with extensive mature glial components. The diagnosis was GTS and adjuvant therapy was considered unnecessary. The patient is alive without recurrence in since the initial diagnosis of germ cell tumor 15 months ago and followed up every 3 months.

Information constant was taken from the patient.

Discussion

Growing teratoma syndrome (GTS) is characterized with tumoral lesions growing during or after the chemotherapy for malignant germ cell tumors in which the tumor markers are within normal range. It is a rare condition and men with testicular germ cell tumors experience this situation more than women with ovarian germ cell tumors (1). The rate of GTS is unknown. The median interval between the diagnosis of ovarian immature teratoma and growing teratoma syndrome was 9 months (range 4-55) (2). Although approximately 100 cases have been reported in the English literature, a recent article showed that GTS is more common than previously reported, with an incidence of 40% in patients who had already undergone surgery (3,4). Mostly, it is occurred in pelvic region but also there are some patients with extra-pelvic disease such as lung, mediastinum, central nervous system, spleen and diaphragm (5,6,7).

The benefit of radical surgical intervention in cases without mass-related complication has not been proved. Disease can be asymptomatic and totally stable over a long period which raises the question of a more conservative surgical approach in patients with massive peritoneal spread (8). Radical surgeries such as peritonectomy, splenectomy or bowel resection may be needed to achieve complete debulking (9). However, these radical interventions are not standard in asymptomatic GTS (3). Radical surgery should be performed in symptomatic patients as a final solution.

As mentioned above, this condition can be managed by observation without any therapeutic intervention. However, GTS should be definitively diagnosed and malignant germ cell tumor recurrence should be excluded prior to management decision. Imaging studies may not be enough to make differential diagnosis between malignant recurrence and GTS. Laparoscopy

is helpful to distinguish GTS from malignant recurrence and to preclude unnecessary chemotherapy. Laparoscopy can be helpful to observe abdomen and to obtain tissue for the definitive diagnosis.

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Figure 1. Preoperative tomography findings of abdominal mass

Figure 2. Tomography findings of peritoneal implants

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