INTRODUCTION

The association of a benign ovarian tumor with ascites and hydrothorax was first described by Meigs and Cass in 1937 [1]. Meigs syndrome was further categorized as a benign solid ovarian tumor with the gross appearance of a fibroma, such as a fibroma, thecoma, or granulosa cell tumor. It may be accompanied by ascites and hydrothorax, which resolve after tumor removal [2]. While other benign fibromatosus tumors of the ovary are known as pseudo-Meigs syndrome, diseases that should be differentiated from Meigs syndrome include ovarian cancer, pedunculated myoma, tubo-ovarian abscess, and ectopic pregnancy. Here, we present a case of an ovarian fibromatosus tumor with ascites that mimicked an ovarian malignancy, in order to remind readers that this benign condition is not uncommon in gynecology.

CASE REPORT

A 52-year-old, para 3, female visited our obstetrics and gynecology clinic due to progressive abdominal fullness of 3 weeks’ duration. Tracing back her history, she had normal menstruation periods and no obvious gynecologic problems during her premenopausal period. She had suffered from abdominal fullness with
poor appetite for the previous 3 weeks. Ultrasound and computed tomography at another hospital and a local medical department showed a pelvic tumor with massive ascites and pleural effusion. She was then referred to our hospital and admitted to the oncologic department for further clinical and laboratory evaluations, including serum tumor markers, upper and lower gastrointestinal tract endoscopy, abdominal and chest ultrasound, paracentesis and thoracentesis. She was finally referred to our obstetrics and gynecology department because the imaging studies showed multiple uterine fibroids (Figure 1), and a large solid adnexal tumor about 16 cm in diameter (Figure 2), with massive ascites and hydrothorax (Figure 3). The other studies had negative findings; the levels of CA125 and carcinoembryonic antigen were 1,678 U/mL (normal, < 35 U/mL) and 2 ng/mL (normal, < 5 ng/mL), respectively. Under the impression of an ovarian tumor with ascites and hydrothorax, a laparotomy was arranged. During the operation, a big solid ovarian tumor was found, arising from the right side with no adhesion or metastatic spots. The tumor was confined to the ovary and had an irregular but smooth surface, a main solid part which was firm, homogeneous, and yellowish with hemorrhage (Figure 4). It measured 16 × 11 × 11 cm and weighed 820 g. The frozen section looked benign, and unilateral salpingo-oophorectomy was done. The final histopathologic findings showed a benign ovarian thecoma (Figure 5). The ascites and hydrothorax resolved after tumor resection. Neither ascites nor hydrothorax had recurred by the time of writing (i.e. 8 weeks after the operation).
The association of a benign ovarian tumor with ascites and hydrothorax that resolve after tumor resection is known as Meigs syndrome, and its importance was first emphasized by Meigs and Cass in 1937 [1]. The importance of Meigs syndrome is that the presence of ascites and pleural effusion does not necessarily indicate that a pelvic mass is malignant. The benign tumors in Meigs syndrome are usually fibromas or fibrothecomas, and constitute 4% of all ovarian neoplasms [3]. Others include mucinous cystadenomas and Brenner tumors of the ovary [4].

While pseudo-Meigs syndrome is a syndrome that includes hydrothorax and/or ascites secondary to ovarian neoplasms other than benign primary tumors, gastrointestinal malignancies, including colorectal or gastric adenocarcinomas (ovarian metastases from colon cancer), subserous uterine myomas (pedunculated myomas), ovarian hemangiomas, and struma ovari are rare etiologies for this syndrome [5–8].

From the basic biologic point of view, inflammatory cytokines are known to induce capillary leakage and third-space fluid accumulation in numerous gynecologic and non-gynecologic disorders. The cytokines, such as interleukin (IL)-1β, IL-6, IL-8, and tumor necrosis factor (TNF)-α in the interstitial fluid of Meigs syndrome with ascites and hydrothorax were studied, and they all decreased after tumor removal, except for TNF-α [9]. In addition, leptin levels were inversely correlated to tumor burden, third-space fluid accumulation and clinical status in Meigs syndrome. Meigs syndrome always mimics ovarian malignancy, although multiple tumor markers, such as CA125 and CA15-3, are elevated [10,11].

Most benign ovarian tumors can be differentiated from malignancies preoperatively. Nevertheless, malignant signs including ascites, hydrothorax, and elevation of serum tumor markers may obscure a benign condition such as Meigs syndrome. Other clinical signs including tumor blood flow, omentum cake, intra-abdominal implantations, lymph node metastases, and the powerful evidence of aspiration cytology are important diagnostic criteria for ovarian malignancies.

We have presented a not uncommon case of a benign ovarian thecoma, associated with hydrothorax and ascites, which mimicked an ovarian malignancy, in order to remind readers of the preoperative diagnosis of ovarian tumors, especially those with a solid component and ascites.

References