CASE REPORT

Massive ascites, pelvic mass, elevated CA-125 and weight loss: think outside the 'ovaries'

Jehan Khalid Mohammed Musleh, Mohammed Almulhem, Nourah Hasan Al Qahtani

Department of Obstetrics and Gynaecology, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia

Correspondence to
Dr Nourah Hasan Al Qahtani,
nhqahtani@uod.edu.sa

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SUMMARY

A 44-year-old woman presented with 3 months' history of painless progressive abdominal distension and weight loss of more than 15 kg. Clinically a pelviabdominal mass with ascites was detected. CT scan of the pelvis and abdomen showed a subserosal leiomyoma with huge amount of ascites. Cancer Antigen (CA)-125 was 546 kU/L. Exploratory laparotomy with myomectomy was done and this was followed by dramatic improvement postoperatively.

BACKGROUND

Pseudo-Meigs' syndrome refers to the coexistence of a pelvic mass other than an ovarian fibroma in conjunction with ascites and/or a pleural effusion, provided that the latter resolves after surgical removal of the pelvic mass.¹ It is considered a rare entity.

We report a rare case of atypical pseudo-Meigs' syndrome (subserosal leiomyoma associated with massive ascites and an elevated level of CA-125 without pleural effusion).

CASE PRESENTATION

A 44-year-old woman presented with 3 months' history of painless progressive abdominal distension and weight loss of more than 15 kg. There was no history of nausea, vomiting, change in bowel habits, pedal oedema, shortness of breath or abnormal uterine bleeding. Menstrual history was unchanged. She was assessed in two other hospitals, and she was advised to undergo abdominal hysterectomy and bilateral salpingo-oophorectomy due to the high probability of ovarian malignancy. She came to our hospital for a third opinion.

Gynaecological and obstetric histories were unremarkable.

General physical examination, chest and cardiovascular examination were normal.

Abdominal examination showed non-tender, soft, symmetrically distended abdomen with an irregular firm non-tender mobile 11×20 cm pelviabdominal mass which extended towards the right lumbar region. There was shifting dullness.

Bimanual examination was limited because of the distension.

Vulva was normal on inspection and speculum examination showed a healthy cervix that was pulled posteriorly and towards the left fornix.

INVESTIGATIONS

Complete blood count: haemoglobin 11.7 g/dL, haematocrit 36.6%, white blood count (WBC) $6.3 \times 10^9/L$, platelets $378 \times 10^9/L$.

Renal function test: blood urea nitrogen 11 mg/dL, creatinine 0.6 mg/dL, Na⁺ 137 mEq/L, K⁺ 4 mEq/L, chloride 100 mEq/L.

Liver function test: bilirubin (total 0.3 mg/L, direct 1 mg/L), albumin 3.5 g/L, Serum Glutamic Oxaloacetic transaminase (SGOT) 16 U/L, Serum Glutamic Pyruvic transaminase (SGPT) 26 U/L, Alkaline Phosphatase (ALKP) 70 U/L.

Hepatitis panels were non-reactive. Thyroid stimulating hormone was 1.158 u/L.

CA-125 546 kU/L, carcinoembryonic antigen 0.99, cancer antigen (CA) 15-3 12.5 U/L, cancer antigen (CA) 19-9 3.8, Alpha-fetoprotein (AFP) 0.79 ng/mL, Beta-human chorionic gonadotropin (B-hCG negative).

ESR 119 mm/hour, quantitative C reactive protein 1.9 mg/dL. These investigations were requested in view of the presence of weight loss and massive ascites.

Peritoneal fluid analysis: cloudy and yellow, red blood cells (RBC) 269/cumm, white blood cells (WBC) 408/cumm (seg 6%, lymph 93%, mono 1%).

Fluid: lactate dehydrogenase test 103, glucose 103, amylase 32 IU, protein 6.5, albumin 3.6 g/L.

Fluid cultures (Alpha-fetoprotein, aerobic, anaerobic, fungus) were all negative.

Fluid cytology was negative for malignant cells.

Pap smear was negative for cervical intraepithelial neoplasia or malignancy.

Ultrasound of the pelvis revealed a retroverted uterus of 8.1×5 cm long with a homogenous endometrium, normal left ovary, right ovary was not visualised, right adnexal solid vascular 20.47×11.83 cm mass and fluid collection in the cul-de-sac and the peritoneal cavity.

Chest X-ray was normal.

Abdominopelvic CT scan: massive ascites, bilateral hydronephrosis due to back-pressure effect of the pelvic mass, a huge lobulated pelvic mass with the same uterine enhancement suggestive of leiomyoma, normal spleen and kidney, smallish fatty liver and no para-aortic or inguinal lymphadenopathy. (figure 1)

DIFFERENTIAL DIAGNOSIS

Leiomyoma (subserous, broad ligament).

Ovarian tumours (other than fibroma).

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Figure 1 Transverse, coronal and sagittal CT abdominal views that show massive ascites along with a pelvic mass adjacent to the uterus suggestive of leiomyoma.

Ovarian metastasis from breast or gastrointestinal tract malignancies.

TREATMENT

Ascitic tap was performed initially (for symptomatic relief) where 2000 cc of ascitic fluid was drained.

The patient underwent an exploratory laparotomy. On entrance into the peritoneal cavity, approximately 2 L of ascitic fluid was drained. A huge highly vascular left-sided multilobulated anterior subserous fibroid 15×20 cm (figure 2). This mass was adherent to the small intestine and parietal peritoneum. It was smooth, firm and 'glistening' in appearance.

Myomectomy was performed after gently dividing the adhesions. Haemostasis was assured by placing haemostatic sutures to the myoma pedicle. The procedure was complicated by a 2×2 cm small bowel mesenteric tear that was repaired by the general surgeon using 4-0 Prolene. Haemostasis was also ensured in the intestinal surface using surgical adhesive (Bio-Glue). Surgical drain was placed at the end of the procedure. The estimated blood loss was approximately 1800 mL. Two units of packed red blood cells were administered.

OUTCOME AND FOLLOW-UP

The patient had an uneventful postoperative course. The bowel function was resumed on the second postoperative day. The surgical drain was removed on the fifth postoperative day.

The patient was discharged home in a satisfactory condition on iron supplement. Pathology assessment confirmed the diagnosis of a degenerative leiomyoma without any evidence of malignancy. A dramatic improvement was appreciated by the patient.

She was seen 4 weeks later with no more complaints, and she regained the lost weight.

DISCUSSION

Meigs' syndrome is an uncommon condition that was first reported by Meigs and Cass in 1937.¹ The definition of this syndrome is limited to the existence of benign and solid ovarian tumours, especially fibromas that are accompanied by ascites and hydrothorax. Pseudo-Meigs' syndrome is defined as being similar to Meigs' syndrome, except that the tumour may be associated with the ovaries, the fallopian tubes, the uterus, round ligaments or the colon.²

The 'atypical Meigs syndrome' is defined as the association of ascites and pleural effusion with uterine fibroma. If there is no pleural effusion, which is extremely rare, this variant in terms of presentation is called atypical pseudo-Meigs' syndrome.²

Tumours associated with pseudo-Meigs' syndrome are usually found in women's genitalia. The most commonly described tumour type is a leiomyoma, which is usually found in the uterus or the broad ligament. Other reported ovarian tumours responsible for pseudo-Meigs' syndrome are Struma ovarii tumours, mucinous or serous cystadenomas, germ cell tumours and ovarian metastasis from colon and stomach cancers.³⁻⁵ Similar cases were reported in a patient with systemic lupus erythematosus,⁶ in pregnancy⁷ and with leiomyosarcoma.⁸

The origin of the ascitic fluid remains unclear. Some authors postulate different mechanisms, such as active secretion by the tumour or the peritoneum, lymphatic obstruction, venous obstruction, inflammatory reactions, toxins and low serum proteins.⁸

Figure 2 The resected leiomyoma; notice the large pedicle surface area.

In our case, the patient presented with an abdominal distension that was attributed to massive ascites, bilateral hydronephrosis and pelvic mass but no hydrothorax. History of unexplained weight loss over a short period (as in our case) in conjunction with main complaint necessitates a detailed clinical assessment to exclude the possibility for underlying malignancy.

CA-125 was 546 kU/L which is secondary to peritoneal inflammation and mesothelial expression of CA-125 but it is considered an elevated level for leiomyoma. There are few published cases of leiomyomas causing pseudo-Meigs' syndrome. In all those cases there were degenerative changes in the fibroids. This is the first case of atypical pseudo-Meigs' syndrome with bilateral hydronephrosis and weight loss.

It is unclear whether the common fibroids and fibroids causing pseudo-Meigs' syndrome are cytogenetically related. There is some evidence to support a model in which accumulation of two independent mutations—a classical structural rearrangement involving *HMG2* and *RAD51L1*, in combination with a loss of the second *RAD51L1* allele—might play a major role in

the development of pseudo-Meigs' syndrome.⁹ No cytogenetic studies were done in our case.

The hall mark for this condition is the complete resolution following surgical resection.

Once the diagnosis of fibroids is confirmed, it can be removed using minimally invasive procedures. Unfortunately, this was not available in our institution.

Contributors JKMM collected the data related to patient's history and wrote the primary draft of the paper. MA collected the investigations of the patients and the conception of the paper. NHAQ initiated the conception and reviewed and edited the final draft of the paper.

Competing interests None declared.

Patient consent Obtained.

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Learning points

- Pseudo-Meigs' syndrome in the form of pelvic mass other than ovarian fibroma, ascites and/or pleural effusion is a rare condition but requires a detailed clinical assessment to identify the underlying aetiology as many of these are related to malignancy (ie, leiomyosarcoma, breast or Gastrointestinal tractmetastasis).
- Elevated Cancer Antigen (CA-125) level may indicate peritoneal irritation.
- Pelvic ultrasound alone is inadequate for the diagnosis; CT scan or MRI are helpful diagnostic tools.
- Peritoneal irritation due to adhesions with the fibroid may lead to ascites.

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