A case of Meigs' syndrome with a gigantic granulosa ovarian tumor

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Introduction

Ovarian tumors constitute a great diagnostic problem due to their asymptomatic character. Spielberg in 1866 first described a coexistance of ovarian tumor with hydrothorax, and Cullingworth in 1879 described cases of ovarian fibromas with ascites and hydrothorax. In 1937 Meigs and Cass reported seven cases of ovarian fibroma with ascites and hydrothorax and in the same year Roads and Teller reported an additional case which was named Meigs' syndrome [1]. Subsequently, cases of pelvic tumors associated with ascites and in some cases with hydrothorax other than ovarian fibroma were named Pseudo-Meigs' syndrome [1, 2, 3, 4].

We now describe a case of a gigantic granulosa cell ovarian tumor associated with ascites and hydrothorax. To our knowledge this condition is very rarely reported in the literature.

Case report

A 51-year-old woman complaining of shortness of breath, expansion of lower abdomen, dyspnea and coughing was admitted and hospitalised in February 1997.

From her medical history, she had had an appendicectomy before age 35, three uncomplicated deliveries, two missed abortions, and three ERCPs from 24/04/1991 until 21/05/1993 every seven months for menometrorrhagea. The histopathological findings from the curettages confirmed glandular cyst hyperplasia. At the present she is suffering from cholelithiasis.

Vital statistics were: height 160 cm, weight 62 Kg, blood pressure 125/70 mm Hg, pulse 70 b/min and temperature 36.8°C. There was dullness to percussion on the right lung field with decreased breath sounds. On examination of the abdomen, a solid mass, approximately 30 cm, was discovered from the uterus to the thorax. On bimanual pelvic examination a very large mass was discovered, probably starting from the right ovary, as the uterus was small and palpable and there was no indication that it was related to the mass.

Ultrasound examination showed a 30x30x20 cm mass, with cystic and compact elements, occupying most of the pelvic cavity but not connecting to the uterus. The mass had an irregular outline and ascites was verified in the region of Morisson gaubladder (Fig. 1). The ultrasound examination of the showed cholelithiasis, while the liver, spleen, pancreas, and kidneys had no pathological findings.

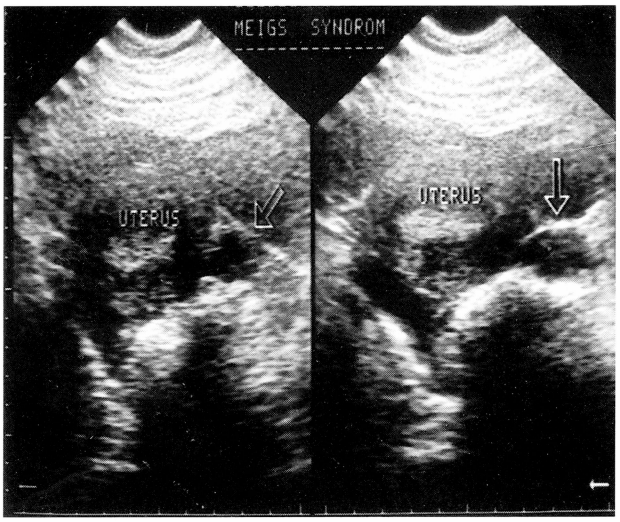

Figure 1.

The chest radiograph revealed fluid in the right hemithorax (Fig. 2).

The CT scan of the upper and lower abdomen verified ascites and a large tumor originating from the right ovary occupying most of the pelvic cavity (Fig. 3). Liver, pancreas, spleen and kidneys lacked any presence of lymphatic nodes.

Hematocrit was 27%, Hb: 7.6 gr%, WBC: 15,000 cc^3, urea: 32 mg%, blood sugar: 113 mg%, SGOT: 24 u/l, SGPT: 12 u/l,

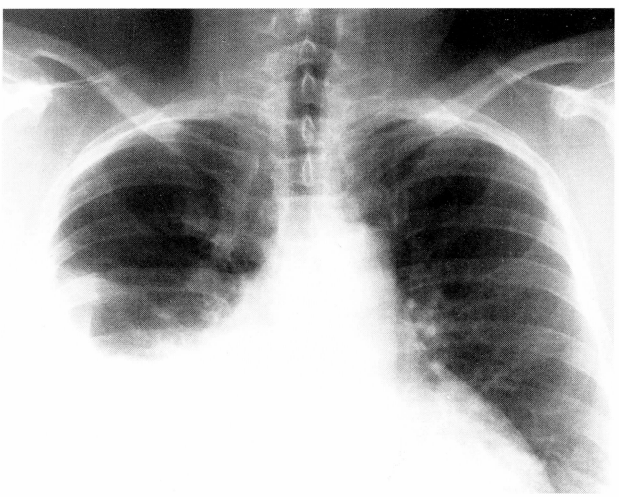

Figure 2.

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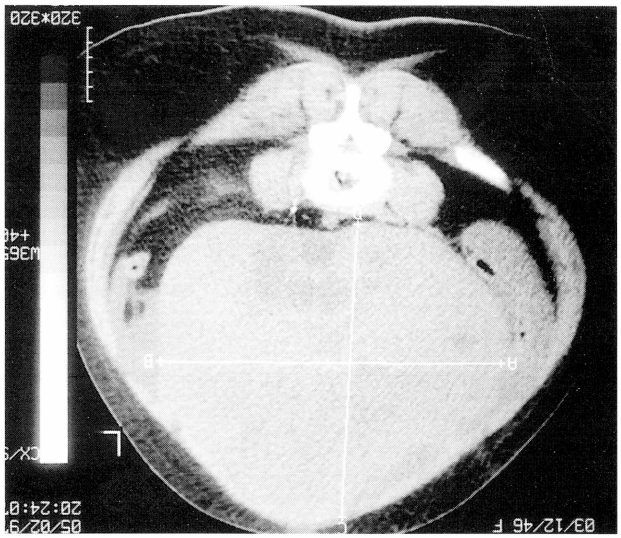

Figure 3.

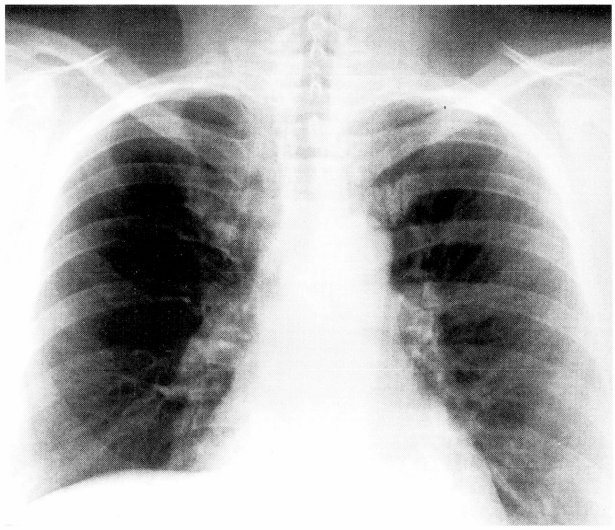

Figure 5.

CA-125: 19.5 u/ml (normal levels <35 u/ml). The electrocardiogram was within normal limits.

The preoperative diagnosis was Meigs' syndrome.

On laparotomy a multilobar tumor originating from the right ovary was revealed with ascites (approximately 3-4 litres). The uterus and left ovary were normal. The tumor surface was smooth and whitish, with epiploic and mesenterian adhesions. Large neoplastic vessels were revealed on the epiploic surface (Fig. 4).

Initially adhesiolys was performed followed by excision of the tumor and typical total hysterectomy and bilateral salpingo-oophorectomy. The size of the uterus was 8x6x5 cm and the left salpinx was 4 cm. The larger diameter of the left ovary was 3.4 cm. The tumor of the right ovary was 30x28x16 cm and weighed 4000 gr. The left salpinx was 5 cm long.

Histopathological findings of multiple tumor sections showed a grannulosa cell ovarian tumor and atypical regions with cystic degenerations.

The post-operative course was satisfactory and the patient was discharged on the 12th day after surgery. Seven days after the operation, the chest radiography did not reveal any presence of pathological findings. Two months after the patient's discharge the results of standard blood biochemistry tests were normal Hct: 34%, Hb: 10.9 gr%, WBC: 7.500 cc^3, CA-125: 17.5 u/ml (normal levels <35 u/ml). Chest radiography was normal and the hydrothorax had completely dissapeared (Fig. 5).

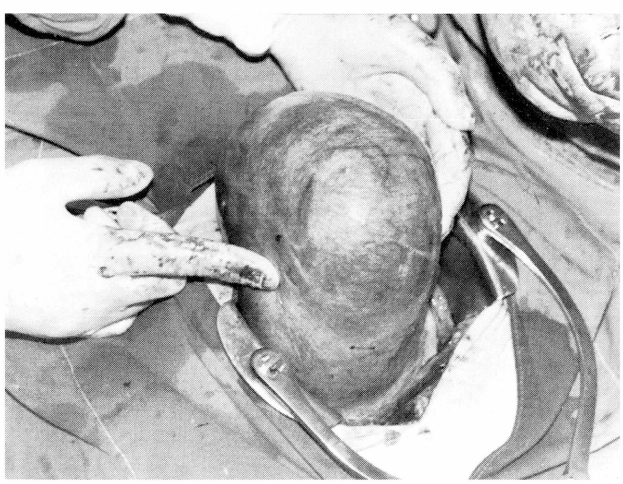

Figure 4.

Discussion

Meigs' syndrome is the clinical pathological condition of the coexistence of ascites plus hydrothorax accompanied by ovarian tumor. Fibroid ovarian tumor is the most common cause of this syndrome along with Brenner's tumor and granulosa ovarian tumors which rarely cause it. Moreover, non-ovarian pelvic tumors such as uterine leiomyoma and endometriosis are rarely related to the coexistence of ascites and hydrothorax [2, 3, 7]. There is not any particular relation between the side of tumor localisation and the side of hydrothorax appearance. The right lung is more frequently affected (75%), while rarely does hydrothorax appear in both lungs (10%) [5]. Hydrothorax occurs in patients due to the entrance of ascitic fluid into the thoracic cavity via the lymphatics in the diaphragm. Ascites in Meig's syndrome is most widely considered to be a result of the tumor per se and the mechanism is the compression of the lymphatics in the tumor tissues that induces leakage of fluid from the superficial lymphatic vessels which are present just below the tumor epithelium.

In our case a large granulosa cell ovarian tumor presented with ascites and hydrothorax of the same side.

Granulosa cell ovarian tumors are observed and characterised by high oestrogen levels. Consequently, metrorrhagia is the most common symptom because of glandular cystic hyperplasia (as in our case three years before the patient presented to our clinic). Granulosa cell ovarian tumors consist of 1-3% of ovarian tumors. They are compact tumors, well-defined and they range from a small number of millimiters to a few centimeters. In our case the tumor was gigantic – 30 cm. To our knowledge this size of granulosa ovarian tumor is the largest that has

appeared in any documented cases. There is only one case reported with a tumor size of 25 cm [6].

Recent studies have shown that in Meigs' syndrome CA-125 levels are increased and the reason for this is peritoneal inflamation [8, 9]. In our study CA-125 levels were within normal limits.

As Meigs' reported, pleural effusion disappears within three days to two weeks after resection of the primary tumor. Thus, in our case, removal of the primary tumor led to the disappearance of ascites and hydrothorax seven days after tumor excision which indicates that the tumor was the source of fluid collection.

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