

Case of Demons–Meigs's Syndrome

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The total number of cases of Demons–Meigs's syndrome reported in the literature is 129 cases. The criteria postulated by Meigs for diagnosis are: (1) the presence of a benign solid ovarian tumour having the gross appearance of a fibroma; (2) the presence of ascites and hydrothorax; and (3) the disappearance of the fluid, with no recurrence, after removal of the tumour.

The following case, seen at the Mecca Maternity Hospital, satisfies Meigs's criteria.

CASE REPORT

A married woman aged 53, gravida-8, para-8, and menopausal for five years, attended our hospital for the first time in February 1965 because of enlargement of the abdomen with dragging pain, weakness, anorexia, and dyspnoea of three and a half years' duration. She underwent a laparotomy for what was diagnosed as a malignant ovarian tumour. To relieve the dyspnoea her chest was tapped on three occasions, the last being four months previously.

On physical examination she was slightly dyspnoeic, pulse 94 and regular, and blood pressure 110/70 mm. Hg. Examination of the chest showed dullness and absence of breath sounds in the right lung base. On abdominal examination ascites was present and the laparotomy scar was seen. There was slight oedema of the lower limbs. Bimanual examination revealed a solid pelvic tumour of a moderate size, probably arising from the right ovary. X-ray examination of the chest verified the presence of a right hydrothorax. Investigation of the sputum showed no abnormality. On intravenous pyelography a pelvic mass was found to be pressing on the urinary bladder.

The right pleural cavity was tapped and about 150 ml. of fluid obtained. The fluid was clear, amber, had a specific gravity of 1.012, and was sterile on culture.

Laparotomy was carried out. The right ovary was enlarged to about 12 by 9 by 7 cm.; it was solid and fibromatous in appearance, and its external surface was lobulated and yellowish-grey. About 380 ml. of straw-coloured fluid was aspirated from the peritoneal cavity. The uterus, left tube, and ovary appeared normal. Total hysterectomy and bilateral salpingo-oophorectomy was performed.

The postoperative period was uneventful. X-ray examination of the chest 10 days after operation showed complete resolution of the right hydrothorax, and the patient was discharged 11 days later. At a monthly follow-up she remained asymptomatic.

Histological examination of the tumour showed it to be a fibroma of the ovary with no evidence of malignancy.

DISCUSSION

Many cases of Demons–Meigs's syndrome are missed either because a pelvic examination is not made or the case is believed to be malignant because of the poor general condition of the patient. Any postmenopausal patient with a hydrothorax of unknown aetiology should arouse the suspicion of the case being Demons–Meigs's syndrome.

The association of an ovarian tumour and hydrothorax was first noted by Spiegelberg (1886). Cullingworth (1879) was the first to report a case of ovarian fibroma associated with ascites and hydrothorax. The patient died from cachexia six months after the first examination. Meigs and Cass (1937) reported seven cases, and Rhoads and Terrell (1937) designated the syndrome after Meigs. Meigs (1954a, 1954b) suggested that the more correct name would be the Demons–Meigs syndrome, since Demons reported cases in 1887, 1902, and 1903. It was Meigs, however, who made the major contribution to the collection and research of this syndrome.

The associated ovarian lesions in the 129 cases reported in the literature are shown in the Table.

Associated Ovarian Lesions

Ovarian Lesions	Number	Percentage
Fibroma	106	82
Theca-cell tumour	12	9.3
Granulosa-cell tumour	6	4.7
Brenner tumour	2	1.6
Fibrothecoma	1	0.8
Unclassified	2	1.6

Biggart and Macafee (1955) stress the great similarity in microscopical appearance between ovarian fibroma and thecoma. Willis (1953) believes that many tumours designated fibroma were in fact fibrothecomata. It is evident that such tumours are present in more than 90% of the cases of Demons–Meigs's syndrome.

Pleural effusion was on the right side in 83 cases (64.4%), on the left side in 13 (10.1%), bilateral in 29 (22.4%), and not reported in 4 (3.1%).

Demons (1887) and Tait (1892) were the first to report that removal of the ovarian tumour would result in a cure. Of the 84 cases collected by Meigs up to 1954 79 patients were well, with no recurrence, after operation; four died without operation; and one died of intercurrent disease.

Ascites and hydrothorax may rarely be associated with benign fibroids (Colle *et al.*, 1959) or with other pelvic tumours. Such cases are designated "pseudo-Meigs's syndrome" (Zsambecky, 1960).

The hydrothorax is believed to result from the passage of ascitic fluid through the transdiaphragmatic lymphatics. It has been shown experimentally that Indian ink injected into the peritoneal cavity can be recovered from the chest, and that the direction of the flow is always from peritoneum to chest. The theories suggested to explain the ascites include intermittent or partial torsion of the pedicle of the tumour, internal vascular strangulation, obstruction of the azygos vein, the alarm reaction of Selye, and changes in the serum/protein ratio or changes in the lymphatic and capillary permeability caused by some toxic substance produced by the tumour.

Contributions to the study of the disease and general review of the subject have been made by many authors (Rowlands *et al.*, 1954; Lawson, 1958; Magiakos *et al.*, 1961; Semino and Bonfante, 1961; Casagrande, 1962).

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