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Case Report

Meigs' syndrome presenting with pleuritic chest pain and dyspnea: rapid resolution after resection of an ovarian fibroma

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Abstract: Meigs' syndrome is a rare triad of a benign ovarian fibroma (or fibroma-like tumor), ascites, and pleural effusion that resolves after tumor resection. A 53-year-old multiparous woman presented with progressive exertional dyspnea and right-sided pleuritic chest pain. Respiratory and cardiac evaluations were initially unrevealing. Bedside assessment identified mild right basal dullness, and point-of-care abdominal ultrasound demonstrated mild free fluid and a solid right adnexal mass. Chest radiography confirmed a small right pleural effusion. Without computed tomography and without diagnostic paracentesis or thoracentesis, Meigs' syndrome was suspected. The patient underwent laparotomy with total abdominal hysterectomy and bilateral salpingo-oophorectomy. Histopathology confirmed an ovarian fibroma. Postoperatively, symptoms resolved dramatically, and follow-up imaging demonstrated complete resolution of the pleural effusion and ascites. This case highlights the importance of considering gynecologic etiologies in unexplained pleural effusion and dyspnea, especially when accompanied by abdominal distension or pelvic pressure.

Keywords: Meigs' Syndrome; Ovarian Fibroma; Pleural Effusion; Ascites; Dyspnea; Pelvic Mass

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1. Introduction

Meigs' syndrome is classically defined by the triad of ascites, pleural effusion, and a benign ovarian fibroma (or fibroma-like tumor), with spontaneous resolution of the effusions after tumor removal [1]. Meigs emphasized the clinical course and curative nature of tumor resection in a larger series in 1954 [2], and the historical development of the eponym has been reviewed [3]. Although benign, this presentation can closely mimic advanced ovarian malignancy, particularly in peri- or postmenopausal patients and when tumor markers (especially CA-125) are elevated [4,5]. The pleural effusion is often right-sided and can be symptomatic even when small [4]. Fluid characteristics may be transudative or exudative, which can further confound evaluation [6]. Awareness of Meigs' syndrome and related pseudo-Meigs entities is essential to avoid delayed diagnosis and unnecessary interventions [7].

2. Materials and Methods

This report describes a single patient managed across outpatient evaluation and inpatient surgical care. Clinical data were obtained from the medical record and bedside examination. Investigations included chest X-ray and pelvic/abdominal ultrasonography.

No computed tomography was performed, and neither pleural nor ascitic fluid was sampled.

Written informed consent for publication was obtained from the patient. All identifying information has been removed.

3. Results

3.1. Case presentation

A 53-year-old multiparous woman (P3+1), with three previous spontaneous vaginal deliveries (last delivery 13 years earlier), presented with progressive shortness of breath on exertion and right-sided pleuritic chest pain. She reported no fever, cough, or sputum production. Previous outpatient evaluations for presumed bronchitis and for cardiac disease (including ECG, echocardiography, and routine blood tests) did not identify a cause.

On examination, vital signs were within normal limits. Chest auscultation revealed no wheeze or crackles, but there was mild dullness to percussion at the right lung base. She also described abdominal bloating and a sense of pelvic heaviness.

Point-of-care abdominal ultrasound demonstrated a mild amount of free intraperitoneal fluid and a solid right adnexal mass. Chest radiography confirmed a small right pleural effusion. A formal pelvic ultrasound described a solid ovarian tumor suggestive of a fibroma. Computed tomography was not performed. No paracentesis or thoracentesis was undertaken.

Table 1. Summary of key clinical findings and management

Phase	Key findings / actions
Presentation	Progressive exertional dyspnea and right pleuritic chest pain; abdominal bloating and pelvic heaviness.
Examination	Normal vital signs; mild right basal dullness to percussion.
Investigations	CXR: small right pleural effusion. Abdominal/pelvic U/S: mild free fluid (ascites) and solid right ovarian mass suggestive of fibroma.
Management	Laparotomy with total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH-BSO).
Histopathology	Ovarian fibroma.
Outcome	Dramatic symptomatic improvement; radiologic resolution of pleural effusion and ascites postoperatively.

Given the triad of an ovarian fibroma-like mass, ascites, and pleural effusion with anticipated resolution after resection, a presumptive diagnosis of Meigs' syndrome was made [1].

The patient underwent open surgery (laparotomy) with total abdominal hysterectomy and bilateral salpingo-oophorectomy. Histopathology confirmed an ovarian fibroma. Postoperatively, the patient reported dramatic improvement in breathing and complete resolution of chest pain. Follow-up imaging documented resolution of both pleural effusion and ascites.

4. Discussion

This case highlights a diagnostic pitfall: dyspnea and pleuritic chest pain often lead to extensive cardiopulmonary investigation, while the underlying driver may be gynecologic. Meigs' syndrome should be considered when pleural effusion—often right-sided—is accompanied by a pelvic mass and even modest ascites [1,4].

The etiology of ascites and pleural effusion in Meigs' syndrome remains incompletely understood. Proposed mechanisms include peritoneal irritation or

lymphatic obstruction causing ascites, with subsequent transdiaphragmatic or lymphatic transfer of ascitic fluid into the pleural cavity [8]. In systematic review data, pleural fluid may be transudative or exudative, making pleural fluid biochemistry alone unreliable for diagnosis [6]. In our patient, fluid sampling was not performed; nevertheless, the clinical constellation and the postoperative course supported the diagnosis.

A key concern is resemblance to ovarian malignancy. CA-125 can be normal or markedly elevated in Meigs' syndrome despite benign pathology [4,5,9,10]. Rarely, newer biomarkers such as HE-4 may also be elevated, reinforcing malignant suspicion [11]. When uncertainty persists, additional imaging and cytology may help exclude malignancy; however, definitive diagnosis relies on histopathology and the postoperative disappearance of effusions [1,4].

Surgical resection is curative. Meigs described rapid resolution of ascites and hydrothorax after removal of ovarian fibromas and related tumors [2]. Multiple case reports document dramatic clinical improvement after resection, including presentations where pleural symptoms are predominant [12].

The differential diagnosis includes pseudo-Meigs' syndrome, in which similar effusions occur with other pelvic tumors (benign or malignant) and may also resolve after resection [7]. Therefore, intraoperative assessment and comprehensive pathology remain essential.

Limitations of this report include the absence of CT imaging and the lack of pleural/ascitic fluid analysis, which may be relevant in distinguishing malignant and non-malignant causes.

5. Conclusions

Meigs' syndrome is an uncommon but important cause of pleural effusion and dyspnea in women with adnexal masses. Clinicians should consider pelvic pathology when respiratory symptoms coexist with abdominal distension or pelvic pressure. Surgical removal of the benign tumor is both diagnostic and curative, with rapid resolution of ascites and pleural effusion.

Author Contributions

Conceptualization: H.M.L.S., M.A.E.A.; Investigation and data curation: H.M.L.S., M.A.E.A.; Surgery and clinical management: M.A.E.A., A.D., K.A., A.A., A.Alserehi; Writing—original draft: H.M.L.S., M.A.E.A.; Writing—review and editing: all authors. All authors have read and approved the final manuscript.

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Data Availability Statement

Data sharing is not applicable to this article as no datasets were generated or analyzed beyond the clinical record.

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Conflicts of Interest

The authors declare no conflicts of interest.

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