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Not Every Mass is a Monster-Meigs Syndrome, A Chameleon in Gynecologic Oncology: Four Case Reports and an Extensive Literature Review

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Abstract: ***Meigs syndrome, characterized by the triad of a benign ovarian tumor, ascites, and pleural effusion, often mimics advanced ovarian malignancy, leading to potential misdiagnosis and overtreatment. Elevated CA-125 levels, commonly associated with epithelial ovarian cancers, can also be observed in Meigs syndrome, further complicating the diagnostic process. This report presents four cases where initial assessments suggested malignancy due to imaging findings and elevated tumor markers. However, histopathological evaluations confirmed benign ovarian tumors, and postoperative resolution of ascites and pleural effusion affirmed the diagnosis of Meigs syndrome. A comprehensive literature review underscores the importance of considering Meigs syndrome in differential diagnoses to prevent unnecessary aggressive interventions. This study emphasizes that "no blind treatment is also a treatment", advocating for thorough diagnostic evaluations before initiating therapy.***

Keywords: Meigs syndrome, Ovarian mass, Benign ovarian tumors, ovarian mass with pleural effusion

1.Introduction

Meigs syndrome is a rare clinical entity defined by the triad of a benign ovarian tumor, ascites, and pleural effusion. Despite its benign nature, the syndrome often presents with features that closely mimic advanced ovarian malignancy, leading to potential misdiagnosis and overtreatment. Elevated CA-125 levels, commonly associated with epithelial ovarian cancers, can also be observed in Meigs syndrome, further complicating the diagnostic process. Awareness of this condition is crucial to prevent unnecessary aggressive interventions.

2.Case Presentations

Case 1

A 40-year-old woman presented with abdominal pain and distension. Ultrasound imaging revealed a 13 cm solid mass in the right ovary accompanied by mild to moderate ascites. Serum CA-125 levels were moderately elevated. Based on these findings, a provisional diagnosis of advanced ovarian carcinoma was made, and the tumor was deemed inoperable. Ascitic fluid analysis showed a few atypical cells, raising further suspicion for malignancy.

A core needle biopsy of the ovarian mass revealed a spindle cell neoplasm. Subsequently, the patient underwent a total abdominal hysterectomy with bilateral salpingo-oophorectomy. Histopathological examination confirmed the diagnosis of ovarian fibroma. Postoperatively, the patient's ascites and pleural effusion resolved completely, and CA-125 levels returned to normal, consistent with Meigs syndrome.

Case 2

A 55-year-old woman presented with a pelvic mass, exudative pleural effusion, and ascites. Imaging studies suggested a malignant ovarian tumor, and serum CA-125 levels were elevated. Surgical intervention revealed a 20x20x10 cm ovarian tumor, which was resected via laparotomy. Histopathological analysis confirmed a benign ovarian stromal tumor. Postoperative recovery was uneventful, with complete resolution of ascites and pleural effusion, leading to a diagnosis of Meigs syndrome.

Case 3

A 51-year-old woman presented with acute ascites and hydrothorax. Pelvic ultrasound showed two solid pelvic masses, and serum CA-125 level was elevated at 577 IU/ml. Pathology revealed bilateral ovarian fibromas. The patient's symptoms resolved completely after surgical removal of the tumors, confirming the diagnosis of Meigs syndrome.

Case 4

A 57-year-old woman complained of an abdominal mass and massive pleural effusion. Imaging studies identified multiple uterine myomas and a left ovarian solid tumor. Surgical intervention confirmed the presence of an ovarian fibroma. Postoperative resolution of ascites and pleural effusion led to the diagnosis of Meigs syndrome.

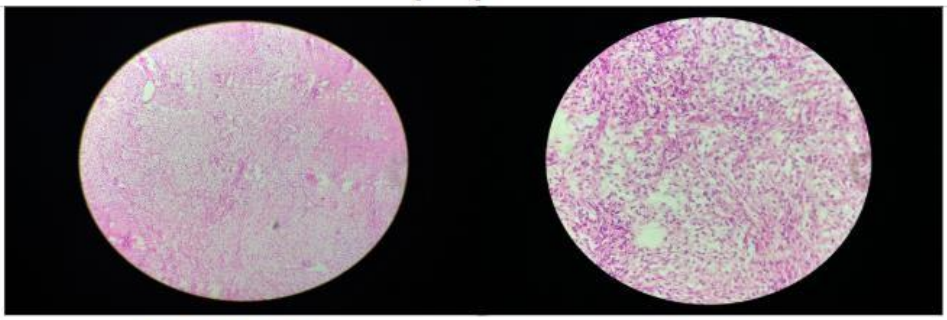
3.Discussion

Meigs syndrome, though rare, should be considered in the differential diagnosis of patients presenting with an ovarian mass, ascites, and elevated CA-125 levels. The syndrome is most commonly associated with ovarian fibromas but can also be linked to other benign ovarian tumors such as thecoma, granulosa cell tumor, or Brenner tumor.

Gross picture

Gross Differential diagnosis - Brenner's tumor/ carcinoid / Krukenberg's tumor

Microscopic picture

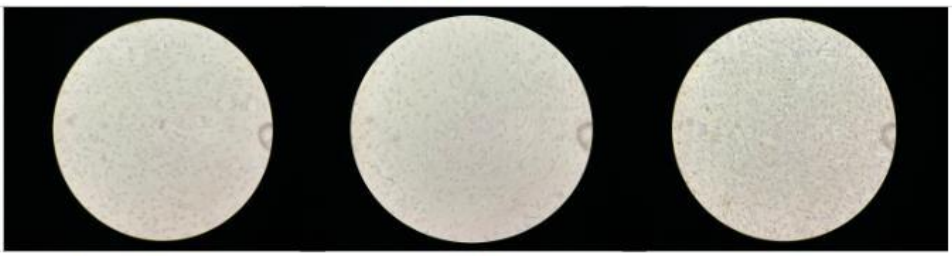


H&E 10 X view

H & E 40 X view

Differential diagnosis - Fibroma /Thecoma/SFT/ Sclerosing stromal tumor

IHC



Calretinin CD34 Ki67

S100 , ER, CD10, Desmin - Negative . IHC ruled out differentials-Thecoma & SFT

Final Diagnosis - Fibroma Ovary + Ascitic fluid + Pleural fluid

Meigs syndrome