ISSN 2689-8268 | Volume 9

American Journal of Surgery and Clinical Case Reports

Case Report Open Access

High-Grade Serous Carcinoma of Ovarian Origin Revealed Unusually by Pleural Effusion

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Received: 24 June 2025
Accepted: 12 July 2025
Published: 18 July 2025
J Short Name: AJSCCR

Keywords:

Ovarian Cancer; Serous Carcinoma; Pleural Metastasis; Malignant Pleural Effusion; CT Scan; Histology; Case Report

Citation:

Salma Addi. High-Grade Serous Carcinoma of Ovarian Origin Revealed Unusually by Pleural Effusion. Ame J Surg Clin Case Rep. 2025; 9(1): 1-4

1. Abstract

High-grade serous carcinoma is the most frequent and aggressive histological type of ovarian cancer. It usually presents with abdominopelvic symptoms but can occasionally be revealed in an unusual manner. We report the case of a 54-year-old woman initially managed in pulmonology for dyspnoea. Pleural investigations revealed a glandular carcinoma. A thoracoabdominopelvic CT scan showed suspicious bilateral ovarian masses. Surgical exploration and histological examination confirmed the diagnosis of high-grade serous papillary carcinoma of ovarian origin. This case highlights the importance of a complete workup in cases of unexplained pleural effusion and reminds us that ovarian cancer can present with pleural metastases.

2. Introduction

Ovarian cancer is the leading cause of gynecological cancer-related deaths worldwide, due to its often late diagnosis [1,2]. High-grade serous carcinoma is the most frequent and most aggressive form [1], accounting for more than 70% of epithelial ovarian cancers. In most cases, the symptoms are abdominopelvic in nature [3]. However, atypical presentations may occur, including extra-abdominal metastases such as pleural involvement, although rare. We report here the case of a high-grade serous carcinoma of ovarian origin revealed by pleural effusion.

3. Case Report

We present the case of a 54-year-old married woman with no notable gynaecological history, in perimenopause, and mother of two children delivered vaginally. She was initially managed in pulmonology for chronic dyspnoea. Chest X-ray showed abundant bilateral pleural effusion, subpleural collapse, and bilateral scissure effusion (Figure 1). A pleural biopsy revealed fibromuscular tissue with no histological abnormality, and pleural aspiration showed clusters of glandular-type carcinomatous cells (suggestive of pulmonary or breast origin). A thoracoabdominopelvic CT (TAP CT) scan revealed two large solid-cystic adnexal masses, bilaterally confluent, heterogeneously enhanced after contrast injection, measuring 90 x 90 x 70 mm on the right and 95 x 82 x 80 mm on the left, in contact with the uterus without clear invasion of pelvic structures. Diffuse nodular infiltration of the peritoneal fat formed an omental cake, associated with moderate ascites, bilateral external iliac lymphadenopathy, and four small hypodense hepatic nodules (Figure 2).Clinically, the patient reported progressive abdominal distension for one year, diffuse abdominal and pelvic pain, and a weight loss of 15 kg, without urinary or digestive symptoms. The gynaecological examination was normal, and the abdominal examination showed a positive fluid wave. Surgical exploration allowed aspiration of 2 litters of ascitic fluid, biopsy of bilateral ovarian masses (10 × 10 cm right, 10 × 7 cm left), peritoneal nodules, and the omental cake (Figure 3). Histopathological analysis concluded to a high-grade infiltrating serous papillary adenocarcinoma of ovarian origin. The patient was referred for oncologic management.

Figure 1: Frontal chest X-ray showing a homogeneous opacity occupying almost the entire right hemithorax, with obscuration of diaphragmatic and mediastinal contours and contralateral mediastinal shift. Suggestive of massive right pleural effusion.

Figure 2: Axial CT scan of the abdomen and pelvis showing two bilateral adnexal masses of suspicious appearance, with mixed density and heterogeneous contrast enhancement, associated with nodular peritoneal infiltration and moderate ascites.

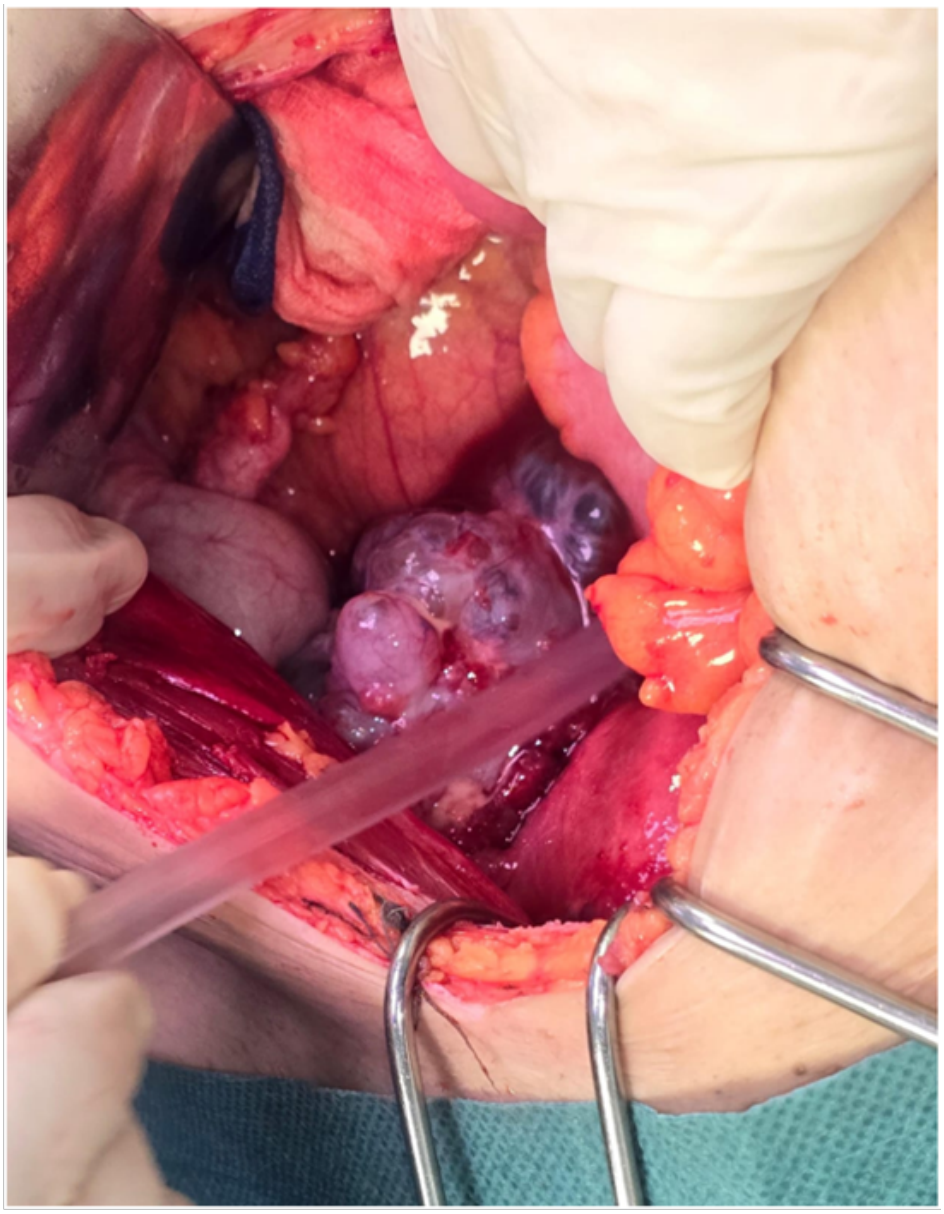

Figure 3: Operative view showing large, lobulated bilateral ovarian masses with associated peritoneal nodules and omental cake, characteristic of high-grade serous ovarian carcinoma.

4. Discussion

High-grade serous carcinoma of the ovary is an aggressive entity with a high metastatic potential, often diagnosed at an advanced stage (FIGO III or IV), due to non-specific initial symptoms [1,3]. Around 10% of patients present with pleural effusion at the time of diagnosis, which is now considered a FIGO stage IV criterion [2]. Pleural involvement is mainly due to transdiaphragmatic dissemination of tumour cells through ascitic fluid or lymphatic drainage [4]. This spread can be initially silent at the pelvic level, delaying diagnosis, as in our case. Therefore, a comprehensive gynaecological workup is essential in the presence of unexplained pleural effusion, particularly in perimenopausal women [4]. CT imaging or PET-CT is useful for identifying ovarian masses and associated signs such as ascites, peritoneal carcinomatosis, or pleural lesions [5]. Tumour markers, especially CA-125, can support the diagnosis, although they are not very specific. Definitive diagnosis relies on histological examination obtained by biopsy or surgical intervention [5], [6]. Standard treatment involves complete cytoreductive surgery followed by platinum- and taxane-based chemotherapy [6], [7]. When complete initial surgery is not feasible, neoadjuvant chemotherapy is recommended [6]. Pleural involvement is a poor prognostic factor but does not preclude curative treatment [8]. This case highlights the need for a multidisciplinary approach involving gynaecologists, pulmonologists, oncologists, and pathologists to ensure prompt diagnosis and optimal management [9].

5. Conclusion

High-grade serous ovarian carcinoma may present atypically as a malignant pleural effusion. This extra-pelvic presentation should alert clinicians and lead to a thorough etiological workup. Histological diagnosis is essential for guiding treatment. Multidisciplinary collaboration is crucial to improving patient prognosis.

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