

Giant Borderline Mucinous Ovarian Tumor: Report of an Unusual Clinical Case

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ABSTRACT

Borderline mucinous ovarian tumors represent a neoplastic entity with low malignant potential, accounting for approximately 15-20% of mucinous ovarian tumors. Although they are generally diagnosed at early stages and in younger patients, presentation as giant masses are uncommon in current practice due to improved access to gynecological care and imaging studies. We report the case of a 42-year-old patient who presented with a large abdominopelvic mass accompanied by symptoms of distension, dyspnea, and early satiety. Imaging studies revealed a multiloculated cystic lesion measuring 60 cm in diameter and an estimated weight of 30 kg. Surgical intervention via exploratory laparotomy allowed complete resection of the mass through a right salpingo-oophorectomy without tumor rupture. Histopathological diagnosis confirmed a borderline mucinous tumor without destructive stromal invasion or peritoneal involvement. The patient progressed favorably without complications and showed no signs of recurrence at six months' follow-up. This case highlights the importance of timely diagnosis and careful surgical management of giant ovarian tumors to avoid complications and ensure a favorable prognosis. It also shows that although rare, these neoplasms can reach exceptional sizes in contexts of poor adherence to medical follow-up. Finally, the need for prolonged surveillance is emphasized due to the low but existent risk of recurrence.

KEYWORDS: Borderline mucinous ovarian tumor, giant ovarian tumor, laparotomy, salpingo-oophorectomy, diagnosis and surgical treatment, abdominopelvic mass, oncologic surgery.

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INTRODUCTION

Epithelial ovarian tumors account for approximately 90% of all ovarian neoplasms, with mucinous tumors comprising between 10% and 15% of these. According to the World Health Organization (WHO) classification, mucinous tumors

are divided into benign, borderline (low malignant potential), and malignant based on histopathological characteristics.¹ Borderline mucinous ovarian tumors are characterized by atypical epithelial proliferation without evidence of destructive stromal invasion. They represent around 15% to 20% of all mucinous tumors and are usually diagnosed in

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women of reproductive age, with a median age between 30 and 50 years. Clinically, these neoplasms can grow progressively and silently, reaching large sizes before causing symptoms such as abdominal pain, distension, or compressive symptoms.^{2,3}

In exceptional cases, these tumors may reach disproportionate sizes and be classified as giant ovarian tumors—a term which, although lacking a strict universal definition, is generally applied to lesions larger than 10 kg or with a diameter exceeding 30 cm. Currently, giant ovarian tumors represent less than 1% of all diagnosed ovarian masses, and their occurrence has significantly decreased due to increased access to health services, routine gynecological check-ups, and widespread use of imaging studies.

Nevertheless, their clinical presentation remains relevant, as they can pose diagnostic and therapeutic challenges due to tumor volume and the potential risk of surgical, thromboembolic, or respiratory complications. Additionally, treatment planning must consider factors such as patient age, fertility desires, and intraoperative oncologic risk assessment.^{4,5}

Below, we present a clinical case of a patient with a giant borderline mucinous ovarian tumor, addressing the diagnostic process, surgical management, histopathological findings, and a review of the literature on this rare entity.^{4,5}

CLINICAL CASE

A 42-year-old multiparous female patient from a rural area, with no relevant personal medical history or prior gynecological follow-up, consulted the Oncologic Surgery service for progressive abdominal circumference increase over approximately 18 months. She reported exertional

dyspnea, severe abdominal distension, and early satiety, without pelvic pain or genital bleeding. No family history of gynecological cancer was reported.

Physical examination showed a patient in acceptable general condition with mild respiratory difficulty in the supine position. The abdomen was markedly distended, with a large firm-elastic, non-tender mass occupying the entire hemiabdomen, without signs of peritoneal irritation.

An abdominopelvic ultrasound revealed a giant multiloculated cystic lesion with thin septa and homogeneous content, extending from the pelvis to the epigastrium. Subsequent abdominal and pelvic computed tomography (CT) confirmed a cystic mass approximately 60 cm in its greatest diameter, displacing abdominal viscera, compressing right vascular and ureteral structures, and elevating the diaphragm. No lymphadenopathy or ascites were identified. Tumor markers showed a mild elevation of CA-125 (48 U/mL) with normal levels of CEA, CA 19-9, AFP, and β -HCG.

With a presumptive diagnosis of a giant ovarian tumor, a planned surgical intervention was decided. An exploratory laparotomy via a xiphopubic incision was performed. Upon entering the abdominal cavity, a right ovarian mass measuring approximately 60 cm in length and weighing 30 kg was identified. It appeared multilocular cystic without rupture or involvement of adjacent structures. The uterus and contralateral ovary were macroscopically normal. A right salpingo-oophorectomy en bloc was performed without the need for intraoperative drainage of tumor contents. Peritoneal biopsies from the omentum, Douglas pouch, and peritoneal fluid cytology were obtained.



Figure 1: Exploratory laparotomy.



Figure 2: Resected ovarian tumor specimen.

Histopathological examination reported a borderline mucinous ovarian tumor (low malignant potential) with atypical epithelial proliferation but no evidence of destructive stromal invasion. The other samples and peritoneal fluid were negative for malignancy.

The patient had a favorable postoperative course without complications and was discharged on the seventh day with outpatient follow-up by the Oncologic Surgery service. At six-month follow-up, she remains asymptomatic without clinical or imaging signs of recurrence.

DISCUSSION

Mucinous ovarian tumors constitute a significant subgroup within epithelial ovarian neoplasms, comprising approximately 10–15% of these tumors. Of these, 15% to 20% are borderline lesions characterized histologically by epithelial atypia and proliferation without destructive stromal invasion. Clinically, these lesions tend to occur in younger women than malignant tumors and generally have a favorable prognosis when detected early.⁶

The reported case corresponds to a borderline mucinous ovarian tumor with giant characteristics, a rare presentation today. Although historically more common, giant ovarian tumors (usually defined as those greater than 30 cm or weighing over 10 kg) currently represent less than 1% of all ovarian masses due to the increasing availability of gynecological care and imaging methods. The tumor in this patient reached 60 cm in diameter and weighed 30 kg, far exceeding typical reports and constituting an extreme presentation.

The silent growth of these neoplasms is due to their intrabdominal location and cystic nature, allowing progressive expansion without marked symptoms until volume compromises adjacent organs. In this case, the patient presented late, with symptoms attributable to the compressive effect of the tumor on abdominal structures and the diaphragm, such as dyspnea, distension, and early satiety.^{7,8} Imaging evaluation plays a key role in diagnosis. Ultrasound and CT characterize the lesion, estimate its extent, and guide differential diagnosis. Moderate elevation of CA-125, as seen in this patient, is common in borderline epithelial tumors but is not specific for malignancy. Other markers such as CA 19-9 and CEA can be helpful in some cases, particularly to exclude gastrointestinal origin.

Surgical treatment is the choice for borderline mucinous tumors, with complete tumor resection and, depending on the case, additional procedures like omentectomy, peritoneal biopsies, and cytology, especially when tumor volume is very high or there is suspicion of rupture, invasion, or dissemination. In this case, the patient was managed by the Oncologic Surgery team via exploratory laparotomy and right in bloc salpingo-oophorectomy without the need to drain tumor content intraoperatively, reducing the risk of peritoneal dissemination or pseudomyxoma.^{9,10}

Histopathological diagnosis confirmed a borderline mucinous tumor without stromal invasion or peritoneal implants, which, according to FIGO classification, corresponds to stage I with an excellent prognosis. Recurrence rates in these tumors are low, especially when complete resection is achieved without tumor rupture.¹¹

CONCLUSION

This case illustrates an exceptional presentation of a giant borderline mucinous ovarian tumor measuring 60 cm in diameter and weighing 30 kg, making it a rarity in current clinical practice. Although advances in gynecological care and imaging have greatly reduced the frequency of large ovarian tumors, such cases can still occur, particularly in settings of social vulnerability, limited resources, or lack of regular medical follow-up, as in this patient.

From a diagnostic perspective, these tumors pose a clinical challenge. Their slow and silent growth allows them to reach large sizes before causing significant symptoms, usually related more to compressive effects than local or systemic manifestations. Clinical suspicion supported by imaging is essential for adequate surgical planning. In this case, abdominopelvic CT clearly defined the mass's characteristics and relationships to neighboring organs, initially ruling out dissemination signs.^{12,13}

Open laparotomy was key to achieving complete tumor resection without capsule rupture or intra-abdominal spillage, which is crucial in borderline tumors as tumor integrity and absence of peritoneal implants are associated with excellent prognosis. The decision to perform a unilateral conservative salpingo-oophorectomy along with peritoneal biopsies and cytology was oncologically appropriate, considering early stage and lack of additional risk factors.¹⁴

Histopathologically, the diagnosis of borderline mucinous tumor without stromal invasion or involvement of other structures confirms the intermediate nature of this lesion with low malignant potential. Although progression risk is limited, long-term follow-up is necessary since recurrences, although infrequent, may occur, especially in patients with incomplete resection or intraoperative tumor rupture.¹⁴

This case underscores the importance of including borderline mucinous ovarian tumors in the differential diagnosis of large abdominopelvic masses, even in contexts presumed benign due to slow progression and lack of systemic symptoms. It also emphasizes the value of careful, planned surgical approaches and multidisciplinary teamwork, particularly in rare clinical situations requiring well-defined oncologic criteria.¹⁵

In conclusion, although giant ovarian tumors are currently uncommon, they remain a significant medical and surgical challenge. Proper management not only resolves severe compressive symptoms but also ensures excellent oncologic outcomes when treated according to current therapeutic standards. Postoperative surveillance remains essential, even

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in early stages, to allow timely clinical and radiological detection of recurrences or late complications.¹⁵

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