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Humongous Ovarian Serous Cystadenoma in a Postmenopausal Woman

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Abstract

Humongous ovarian neoplasm that is greater than 10 cm is a rare finding due to the availability of advanced imaging modalities. We present the case of a 50-year-old postmenopausal woman who presented to the emergency department complaining of recurrent ground level falls and increasing abdominal girth over the past 2 years, however, with rapid growth over the past six months. Computed tomography of the abdomen and pelvis demonstrated a large mixed, solid, round and hyperdense mass measuring 54 cm craniocaudal x 41 cm transverse x 50 cm anteroposterior in size. Our patient underwent an emergent exploratory laparotomy with excision of abdominopelvic mass, total abdominal hysterectomy and bilateral salpingo-oophorectomy. Histopathological evaluation of mass suggested a benign serous cystadenoma. To our knowledge, this is the largest reported cystadenoma since the mid-20th century. Our case highlights the multidisciplinary approach of a rare and high-risk case and the importance of addressing healthcare disparities and access to medical care.

Keywords: Serous cystadenoma; Postmenopause; Healthcare disparities

Introduction

Ovarian epithelial neoplasms are the most common type of ovarian tumor, accounting for 60% of ovarian tumors and 40% of benign ovarian tumors. Serous cystadenoma is the predominant subtype of benign ovarian epithelial tumors with a peak incidence in the 4th to 5th decade of life. They are thought to arise from hyperplastic expansions of epithelial inclusions that secrete serous fluid. Serous cystadenomas typically range in size from 1–30 cm, with an average size of 10 cm [1]. Ovarian cysts greater than 10 are classified as giant cysts. Due to their location in the intra-abdominal space, ovarian cysts are typically asymptomatic in the early stages as a consequence, leading to delayed diagnosis. Improvement of imaging modalities have played a key role in the early detection and decreased incidence of large ovarian cyst; however, in populations, typically in underserved communities, that do not have readily available access to medical care, ovarian cysts can go undetected and grow significantly [2,3]. We present the case of a 50-year-old postmenopausal female, who presented to the emergency room complaining of recurrent falls and found to have a massive serous cystadenoma measuring 54 cm x 41 cm x 50 cm due to a delay in seeking medical attention and inadequate regular outpatient follow up.

Case Report

A 50-year-old nulliparous and postmenopausal Hispanic woman presented to the emergency department after a ground level fall, reporting increasing episodes of loss of balance, weight gain, and increasing abdominal distention over the course of two years but with rapid growth over the past six months. Due to lingering trauma from the death of a sibling in a hospital setting, lack of medical insurance coverage, and at the time, the emerging COVID-19 pandemic, she did not seek medical attention until worsening of symptoms. A key factor which prompted the patient to seek medical attention was more frequent falls, worsening balance, and new onset shortness of breath while lying on her back due to the increasing abdominal girth. The patient otherwise denied any gastrointestinal or genitourinary disturbances. She also denied any personal or family history of gynecological malignancy, although she had not followed up with a primary care physician in over 5 years.

Upon physical examination, a significantly large and firm distended abdomen was noted along with distant bowel sounds and dullness to percussion without presence of a fluid wave (Figure 1). Vital signs were within normal limits on arrival and the patient's weight was recorded as 127 kg. Following admission to the hospital, our patient began experiencing hypoxia, tachypnea and hypotension.

Figure 1: Patient laying on left lateral decubitus preoperatively.

Abdominal and pelvic ultrasound showed a large multi-septated, mixed solid and cystic mass, though results were limited due to the nature and size of the mass, causing incomplete visualization. Contrast enhanced computed tomography of the abdomen and pelvis

demonstrated a large mixed, solid, round and hyperdense mass measuring 54 cm craniocaudal x 41 cm transverse x 50 cm anteroposterior in size. Further evaluation described a solid mass measuring 12.5 cm x 12 cm x 10 cm as well as a dominant cystic mass measuring 48 cm x 41 cm x 40 cm occupying the entire abdomen and pelvis and extending cranially into the thoracic cavity (Figure 2). It also showed an associated mass effect with superior displacement of the liver, posterior displacement of the kidneys and decompressed, posteriorly displaced bowel. Laboratory tests including CA 19-9 and CA 15-3 was within normal limits with elevated CA-125 at 119 U/mL.

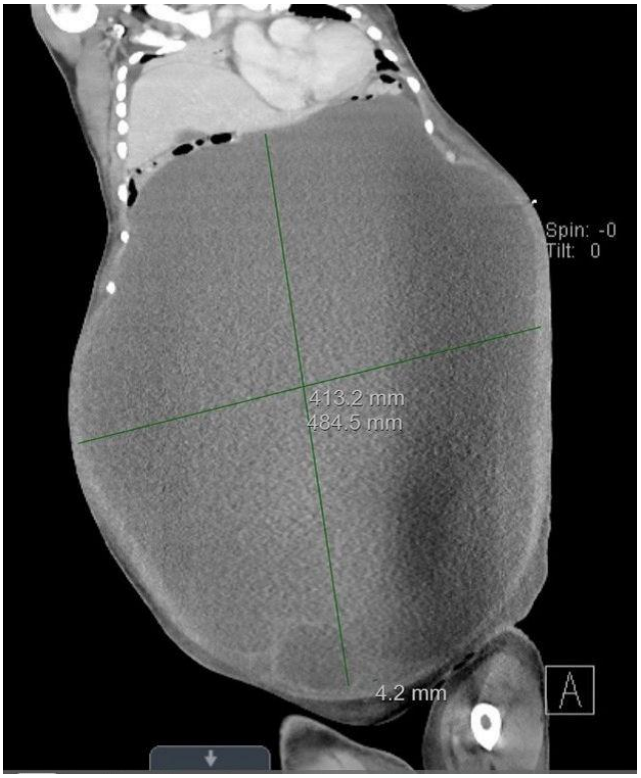

Figure 2: Coronal computed tomography cut of the abdomen and pelvis demonstrating the dominant cystic component measures 48 x 41 x 40 cm (craniocaudal length by transverse width by anteroposterior depth.

Our patient underwent an emergent exploratory laparotomy due to the decompensating events related to abdominal compartment syndrome. The procedure consisted of an abdominopelvic mass excision, total abdominal hysterectomy and bilateral salpingooophorectomy. After midline vertical incision, the cyst wall appeared to be adherent to the peritoneal surface and tore while cutting the overlying peritoneum. More than 50 liters of clear, straw-colored, serous fluid was aspirated in a controlled fashion to avoid acute abdominal decompression and hemodynamic shift. Intraoperatively, the patient was inspected for ascites, cervical or vaginal lesions, pelvic or retroperitoneal lymphadenopathy or omental/upper abdominal disease, none of which was noted. A massive well-circumscribed multi-cystic lesion arising from the left ovary was visualized and resected. With mass removed, the total abdominal hysterectomy with bilateral salpingo-oophorectomy was completed without complications (Figure 3).

Figure 3: Inta-operative image of deflated huge cystic ovary, hysterectomy with cervix and one attached adnexa with ovary and fallopian tube.

The removed cyst, after deflation, weighed 1.7 kg. The pathology report specified the majority of the cyst to be lined by thickened cystic wall without evidence of papillary excrescences. At the bottom of the cyst, several daughter cysts were visualized with the largest measuring 8 cm in diameter. The smaller cysts, all filled with light tan fluid, had a wall thickness measuring approximately 0.1 cm to 0.5 cm. The cyst surface showed an attached fallopian tube with fimbriae measuring 8 cm length and 0.6 cm diameter. Final impression suggested a benign serous cystadenoma. Upon discharge, on postoperative day 13, patient was saturating well on room air, ambulating without difficulty using front wheel walker, tolerating oral intake and hemodynamically stable.

Discussion

This case represents a giant serous cystadenoma filling the entire abdominal cavity. To our knowledge, this is the largest reported cystadenoma since the mid-20th century and the maturation of modern diagnostic screening modalities. At 54 x 41 x 50 cm (110,700 cm3) it exceeded the largest modern case reported in 2009 which measured at 60 × 47 × 30 cm (84,600 cm^3) [4]. Table 1 outlines other reported modern giant serous cystadenomas. Given the concern for malignancy with a mass this large, the Risk of Malignancy Index was calculated, yielding (USG Score x Menopausal Score x CA-125)=(3 x 3 x 119)=1,071 [5]. This was above the cutoff value of 200 and represented a high risk of malignancy, with 71% sensitivity and 92% specificity for ovarian cancer [6], though the mass in this patient proved to be benign. Features that suggest the cystic neoplasm is benign include a unilocular surface, minimal septations, thin walls, and absence of papillary projections [7].

Source, Year	Age, year/Sex	Size cm/cm3	Clinical Presentation	Pathological Features
Kianifard et al. 2007 [6]	42/F	N/A (15.1 Kg)	2 Year history of increasing abdominal girth, breathlessness, and lower back pain.	No access to pathological or histological investigations, Specimen was discarded.
Young et al. 2008	24/F	37 x 22 x 27 21,978	A history of progressive abdominal distention for 1 year.	Benign serous cystadenoma, Spindly fibroblasts w/in stroma w/out nuclear atypia or increased mitotic index.
Sujatha et al. 2009	66/F	60 x 7x 30 84,600	Gross abdominal distention for 2 years and inability to walk.	Benign serous cystadenoma Spindly fibroblasts w/in stroma w/out nuclear atypia or increased mitotic index,
Katke 2016	45/F	22 x 15 x 17 5,610	Gradual distention of abdomen for 2 months, w/ diffuse abdominal pain for 1 year.	Final impression suggestive Benign Serous Cystadenoma.
Hori et al.1991	36/F	43 x26 x 20 22,360	Abdominal Distention and constipation for 3 years.	Benign Serous cystadenoma w/out intra-cystic papillary ingrowth or solid area.

Table 1: Reported English literature cases of serous cystadenomas.

Due to the increased abdominal girth, our patient was exhibiting signs of abdominal compartment syndrome with complaints of hypotension and shortness of breath with increased work of breathing. Though excision of such a large cystic intra-abdominal structure is associated with considerable risk of mortality mainly due to the sudden reduction in intra-abdominal pressure and increased risk of hemorrhage, urgent surgical abdominal decompression was necessary. Following the surgical procedure, the patient's condition improved drastically. Notably, the patient's weight after surgery was 62.5 kg, a difference of 64.5 kg from admission. Otherwise, post-operative recovery was uneventful, and the patient was discharged on postoperative day thirteen. The patient continues to do well and is able to carry on with her daily activities without complications following the removal of the serous cystadenoma.

While diagnostic and screening modalities generally capture such tumors at a much earlier point in their growth, this patient was in denial due to the trauma of her brother's diagnosis and death of leukemia as well as her lack of medical insurance and at the time, the emerging COVID-19 pandemic. Our patient lives in Downtown Los Angeles where there are ample opportunities to pursue medical advice and obtain treatment. However, this matches the trends seen in the general population, where 83% of American adults state they fear the cost of treatment makes quality care unaffordable and where 40.9% of respondents said they delayed seeking medical care due to COVID concerns, with rates generally higher in non-White, disabled, and lower-income populations [8-13].

Conclusion

In conclusion, this highlights the work that remains to be done in addressing the increasing disparities in health care access as well as conveying the importance of educating patients on health awareness and obtaining routine screening for disease prevention.

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