

# Clinical Communications: OB/GYN



## ABDOMINAL PAIN IN THE POST-MENOPAUSAL FEMALE: IS OVARIAN TORSION IN THE DIFFERENTIAL?

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**Abstract—Background:** Ovarian torsion is often thought of as a disease process of reproductive-aged women; however, it is also seen in the extremes of age. In post-menopausal women, it can be both a challenge to diagnose and associated with increased morbidity. **Case Report:** We present a case of a 68-year-old woman with sudden onset of lower abdominal pain 6 h before arrival at the emergency department (ED). She was diagnosed with ovarian torsion, secondary to an ovarian mass, and underwent a full malignancy evaluation. **Why Should an Emergency Physician Be Aware of This?:** Given the higher risk of malignancy in post-menopausal women, ovarian mass-related torsion is an uncommon but important cause of acute-onset lower abdominal pain. Due to the lower prevalence of ovarian torsion in the post-menopausal group, delayed or missed diagnosis is common and may increase associated morbidity. This morbidity is due to the increased likelihood of malignancy and complications of associated medical and surgical treatment of the mass. This report highlights the increased malignancy risk, difficulty with diagnosing torsion in the post-menopausal age group, and the rationale for different management strategies when compared to premenopausal women. © 2017 Elsevier Inc. All rights reserved.

**Keywords—**post-menopausal women; ovarian torsion; malignancy

### INTRODUCTION

Ovarian torsion is among the top five most common surgical emergencies in adult women. It occurs when the ovary

rotates around both the infundibulopelvic ligament and the utero-ovarian ligament. This causes compression of the ovarian blood vessels and lymphatics, thereby reducing the venous and arterial flow. Without diagnosis and intervention, this leads to ovarian ischemia and eventual necrosis. Rarely, it can lead to adhesions, generalized peritonitis, thromboembolism, or pelvic thrombophlebitis (1–3).

In adolescent and reproductive-aged females, torsion poses obvious risk to future fertility. In young females, it is often the result of benign ovarian pathology, including simple cysts, teratomas, and corpus luteum cysts during first-trimester pregnancy (1,2). In all reported cases of torsion at any age, malignant ovarian masses are the cause in approximately 2% of patients. However, when focusing on the post-menopausal age group, the percentage of malignant masses causing torsion is estimated to be as high as 30% (1–3). Given the risk to ovarian viability and the classic presentation in the reproductive age group (acute onset unilateral pelvic pain with nausea, vomiting, and palpable pelvic mass), clinicians frequently make the diagnosis and are aggressive about treatment. In the extremes of age, however, history and physical examination might be less reliable and torsion might not be part of the differential diagnosis. This can lead to a significant delay in or missed diagnosis (3).

### CASE REPORT

A 68-year-old mildly obese woman presented to the emergency department (ED) with sudden onset of sharp

right lower quadrant and suprapubic pain that woke her from sleep in the early morning 6 h before arrival at the ED. She described a constant pain with mild radiation to the right lower back and nausea without emesis. The patient denied any stool changes, hematuria, dysuria, vaginal bleeding, or discharge. She had no previous similar episodes.

On physical examination, the patient appeared uncomfortable in bed. She was afebrile and had a normal heart rate and blood pressure. She exhibited an obese, soft, non-distended abdomen with normal bowel sounds. There was moderate tenderness to palpation in the right lower quadrant and suprapubic region, as well as mild tenderness in the right costovertebral angle. Although pelvic examination was limited due to obesity, no cervical motion tenderness, adnexal masses, or internal lesions were noted. She had intact and equal bilateral lower-extremity pulses.

The patient was initially evaluated for ureterolithiasis, urinary tract infection, and renal dysfunction. Her work-up included a complete blood count (CBC), basic metabolic panel (BMP), and urinalysis (UA), and a computed tomography (CT) scan of the abdomen and pelvis without contrast. The results of the CBC and BMP were within normal limits. The UA revealed 1+ leukocytes, negative for nitrites, negative for blood but with 3–10 red blood cells/high-power field. CT scan of the abdomen and pelvis revealed a punctate right renal calcification but no ureterolithiasis or hydronephrosis. It also demonstrated a 5 × 7-cm right ovarian mass that crossed into the left abdomen causing mass effect on the superior aspect of the bladder.

Subsequently, a pelvic ultrasound with vascular analysis was ordered for further investigation. The ultrasound revealed a 7.2 × 4.2 × 5-cm anechoic mass with no arterial or venous flow detected to the right ovary. The radiologist also reported the mass to be an avascular cystic structure without any evidence of normal ovarian stroma. This was suspicious for right ovarian torsion with the cystic lesion acting as the lead point. The left ovary was difficult to identify completely, but was noted to have normal arterial and venous blood flow, normal ovarian stroma, and a simple 4 × 3-cm anechoic cystic structure as well.

Gynecology was consulted for torsion due to the ovarian mass. Given the patient's age and lack of ovarian function, cystic appearance of the mass on ultrasound, adequate pain control, and well clinical appearance, they recommended treatment with oral analgesia. The consultant also recommended close outpatient gynecologic follow-up and tumor markers cancer antigen (CA)-125, carcinoembryonic antigen, and CA 19-9 to be sent before discharge. The patient was scheduled for

an outpatient da Vinci–assisted total laparoscopic hysterectomy and bilateral salpingo-oophorectomy. In the operating room, frozen pathology was consistent with benign ovarian disease. Final pathology reported a large hemorrhagic cyst with scattered chronic inflammation and fat necrosis. She had an uncomplicated surgery and postoperative course. The tumor markers came back negative and she was meeting all routine postoperative milestones, which allowed for discharge to home on postoperative day 1.

## DISCUSSION

Ovarian torsion accounts for approximately 3% of all gynecologic emergencies (4–6). It is most common in the mid 20s to late 30s but has been reported from 3 months to 77 years of age (1). In general, torsion can be seen in patients with normal ovaries or in those with risk factors, including excessive utero-ovarian ligaments (as seen on the right side of the body compared to the left), paratubal cysts, ovarian hyperstimulation syndrome (i.e., polycystic ovarian syndrome), pregnancy, and tubal ligation. The most common cause for ovarian torsion among all age groups is the presence of a mass >5 cm. Other pertinent common risk factors for the post-menopausal age group include complex ovarian masses with larger ovarian diameter, previous torsion, and history of tubal ligation (1,2,7–9).

The presence of a post-menopausal ovarian mass has several etiologies, including benign cysts (physiologic, serous, or mucinous cystadenomas, cystadenofibroma, dermoid cyst), primary ovarian cancer, and metastatic cancer (breast, endometrial, some gastrointestinal malignancies). The incidence of ovarian malignancy in women older than age 50 years is approximately 30%, compared with 8% in premenopausal women with ovarian masses (1–3,10,11). It is hypothesized that malignancy is the cause of torsion in a small percentage of all cases due to the increased likelihood of local inflammation, adhesions, or metastases that fix the neoplasm in place (1,7). In the post-menopausal female, the prevalence of malignant ovarian masses resulting in torsion has been variably reported, ranging from 2% to 35% (2,4,9).

When an ovarian mass is diagnosed, there are a few sonographic characteristics that should raise the provider's suspicion for malignancy, including a vascular component, a nodular appearance that is not hyperechoic, and the presence of thick septations inside the mass (12). The patient who was presented in this case report did not exhibit these concerning sonographic findings, which contributed to the decision for conservative management with outpatient follow-up.

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