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Case Report: An Emergency Department Presentation of an Ovarian Teratoma

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Abstract

A teratoma (from the Greek *terato* for "monster" and *onkoma* for "mass" or "swelling") is a type of neoplasm composed of tissues from two or three germ layers. Mature cystic teratomas (MCTs) constitute 70% of all ovarian neoplasms.[1] They typically present with nonspecific symptoms such as pain and nausea. They account for approximately 2% of all primary ovarian malignant cancers and are predominately diagnosed via ultrasound.[2] Computed tomography may be necessary if malignancy is suspected. Larger size warrants a higher suspicion of malignancy. Management is symptom control and ultimately, surgical removal. Prognosis is generally excellent, provided there is no malignant transformation or other complications. Modern research increasingly supports a conservative management via resection of the mass without negative impact on fertility.

Case Presentation

A 24-year-old female presented to the emergency department (ED) with a complaint of left flank and left inguinal pain of five days duration. She reported that her pain began suddenly while seated. Since the time of onset, her pain had been intermittent and progressively worsening. She reported associated persistent nausea as well as one episode of vomiting which had occurred the day prior to presenting to the ED. The patient had been taking acetaminophen for her symptoms with minimal relief. Her most recent dose prior to arrival to the ED had been five hours prior. She denied any fevers, chills, dysuria, urinary frequency, urinary urgency, or abnormal vaginal discharge.

The patient's vital signs were as follows: heart rate 61 beats per minute, respiratory rate 18 breaths per minute, blood pressure 119/76 mmHg, and temperature 36.9^{o}C. She rated the severity of her pain as 8 out of 10. The physical exam was remarkable for tenderness to palpation of the left CVA and left inguinal region. Her white blood cell count, hemoglobin, electrolytes, hepatic function panel, lipase, and urinalysis were within normal limits. Her urine pregnancy test was negative. Gynecologic ultrasonography (US) demonstrated a left adnexal cystic lesion with a length of 12.2 centimeters, width of 6.9 centimeters, and height of 12.1 centimeters. The cystic lesion contained internal low-level echoes. Also observed was a mural echogenic posteriorly shadowing lesion soft tissue component without associated vascularity. Left ovarian parenchyma was not visible. There was no right ovarian torsion. Computed tomography (CT) of the abdomen and pelvis without contrast demonstrated a large, complex lesion in the mid-pelvis with fluid, fat, and calcific components. The imaging studies indicated the presence of a mature cystic ovarian teratoma. Malignant transformation was suspected, given the size of the lesion. [Figure 1, 2]

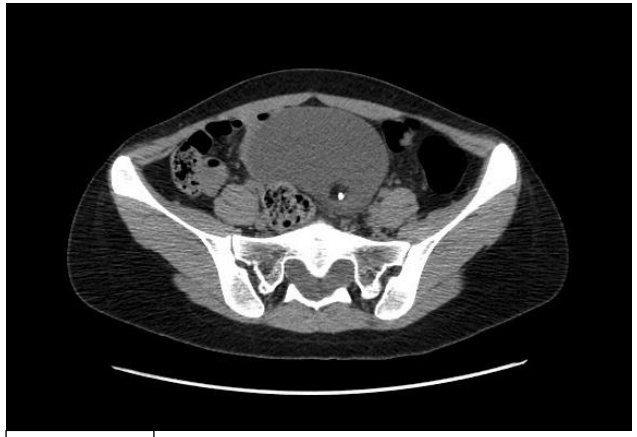

Figure 1

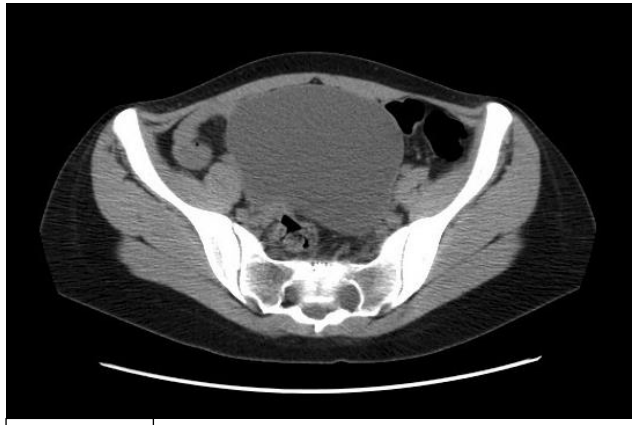

Figure 2

Case Presentation (continued)

The case was discussed with the radiology service as well as the obstetrics and gynecology (OBGYN) service. Due to inadequate visualization of the left ovarian parenchyma, left ovarian torsion could not be ruled out. The patient was evaluated by the OBGYN service. She was administered acetaminophen, ketorolac, ondansetron, and sodium chloride 0.9% intravenously for symptoms. The patient was discharged home by the OBGYN service after evaluation. Five days later, the patient returned as planned for a Da Vinci left ovarian cystectomy.

Discussion

Complications of MCT include malignant transformation and torsion. Torsion requires immediate surgical intervention. The incidence of MCT-related torsion has not been clearly identified to date. Malignant transformation is more likely in patients older than 45-years-old and with tumor diameter greater than 10 centimeters.[4] MCTs arise from unfertilized germ cells following meiosis I. They are composed of combinations of ectoderm, mesoderm, and endoderm. They can contain hair, skin, bone, neural tissue, and gastrointestinal tissue. Most patients with MCT have abdominal pain, nausea, and vomiting. They may be entirely asymptomatic at the time of diagnosis. Laboratory studies are generally unremarkable; US and CT are ideal modalities for identifying MCT. Ultrasound will show a cystic lesion with posterior shadowing.[3] Management is pain control and surgical intervention. Conservative management is the norm for MCTs, which predominately affect young and middle-aged women. The laparoscopic technique is ideal. Cystectomy is preferred to complete oophorectomy. This preserves more ovarian tissue and prevents fertility compromise in young patients.[6]

Conclusion

Ovarian teratomas are typically benign. However, in addition to malignant transformation, they pose a significant risk to patients due to potential complications such as torsion, rupture, and impaired fertility. Torsion may be difficult to rule-out based on imaging alone. Therefore assessment of patient's clinical appearance is crucial to determining management. In addition, OBGYN consultation is necessary. Prompt follow-up with OBGYN must be emphasized to the patient for diagnostic laparoscopy and cystectomy. These interventions will help prevent immediate complications in addition to identifying potential malignant transformation expeditiously.

References available on request.