A rare case of huge mature ovarian cystic teratoma: A case report

Hossein Torabi[1], Kasra Shirini[2], Yalda Ashoorian[1], and Rona Ghaffari[1]

[1]Guilan University of Medical Sciences
[2]Iran University of Medical Sciences

June 29, 2022

Abstract

Mature ovarian Cystic teratoma or dermoid cyst is one of the most common benign ovarian neoplasms that can be found in different age groups and in various sizes. It is important to diagnose and treat this problem as soon as possible because of its complications especially malignancy transformation.

A rare case of huge mature ovarian cystic teratoma: A case report

Authors: Hossein Torabi[1], Kasra Shirini[2*], Yalda Ashoorian[3], Rona Ghaffari[4]

1. Assistant Professor, Department of General Surgery, Poursina Medical and Educational Center, Guilan University of Medical Sciences, Rasht, IRN. Email: dr.torabi1367@yahoo.com
2. MD, Department of General Surgery, Iran University of Medical Science, Tehran, IRN. Email: Kasrashirini21@gmail.com
3. Department of Pathology and Laboratory Medicine, Rasht, Guilan University of Medical Science, Rasht, Iran, Email: Y.ashoorian@gmail.com
4. MD, Department of General Surgery, Poursina Medical and Educational Center, Guilan University of Medical Sciences, Rasht, IRN. Email: dr.ghaffari1370@yahoo.com

*Correspondence author:

Kasra Shirini, MD

Department of General Surgery, Iran university of medical science, Tehran, Iran

Telephone: +989112481500 Fax number: +982166879611

E-mail: KasraShirini21@gmail.com

ORCID-ID: https://orcid.org/0000-0003-4104-7633

Acknowledgment: None

Disclosure of conflicts of interest: The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript. The patient has consented to the submission of the case report for submission to the journal.

Funding: The authors report no involvement in the research by the sponsor that could have influenced the outcome of this work.

Authors' contributions: All authors contributed equally to the manuscript and read and approved the final version of the manuscript.

Patient's contest: Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

Key words: Mature Cystic Ovarian Teratoma, Salpingo-oophorectomy, Dermoid Cyst

Key Clinical message: Mature ovarian Cystic teratoma or dermoid cyst is one of the most common benign ovarian neoplasms that can be found in different age groups and in various sizes. It is important to diagnose and treat this problem as soon as possible because of its complications especially malignancy transformation.

Abstract :

Mature ovarian cystic teratoma, also known as the dermoid cyst, is one of the most common benign ovarian neoplasms that can occur in different age groups and could appear in various sizes. Diagnosing this problem as soon as possible is essential due to complications that can coincide, such as malignant transformation. In this article, we reported a 66 years old female patient with a single huge mature ovarian cyst teratoma who presented to the surgical ward with abdominal pain and swelling but disregarded it for four years.

Introduction :

One of the most common benign ovarian neoplasms derived from germ cells is mature ovarian cystic teratomas, also known as dermoid cysts [1, 2]. Variable proportions of tissues compose these types of cysts, which originate from the ectoderm, mesoderm, and endoderm [2]. Although, this type of cystic disease is usually seen in the active reproductive period of women's lives, but it can be seen in any age groups, even in the postmenopausal period [3].

Due to advances in imaging techniques, especially ultrasonography, diagnosing this disease is much easier today, and finding cysts larger than 10 cm is very rare [2,4,5]. In this article, we report a huge mature ovarian cystic teratoma developed in less than four years in a 66 years old postmenstrual female.

Case presentation:

A 66-year-old female patient presented to the surgical department with a past medical history of hypertension in the last five years and complained of a two-year right lower quadrant pain and severe swelling. The pain had been vague for the first six months and increased gradually. The pain had increased sharply in the last three days before hospitalization, and it was positional and got worse by bending forward or lying down. The pain has been persistent and mild at first and had nothing to do with painkillers, and it had nothing to do with feeding or defecation. The patient had nausea and vomiting three times which contained food eaten, but she did not complain of constipation. She had normal defecation and gas passing. Due to the patient's symptoms, she was referred to the surgical clinic and admitted to the surgical ward for more investigation. The patient had stable vital signs at the time of admission, and she did not have a fever. Her weight increased gradually in the past two years and was uncontrollable, but she had not seen a doctor during that period. On the physical examination, the stomach was symmetric but fatty and had mild to moderate distension. Epigastric and right lower quadrant tenderness were found, but rebound or gardening were not detected. The patient has used 25 mg Losartan tablet daily, and her blood pressure was under control. She also had a history of cesarean section with a low-midline incision 40 years ago. For more investigation, she was asked to do abdominal ultrasonography. Sonography revealed a huge cystic area with approximate dimensions of 245 x 205 x 121 mm and an approximate volume of 3235 cc, extending most of the abdominal area from the gastric area to the top of the uterus. Adjacent to the anterior area of the mentioned area, the image of a hypoechoic, heterogeneous and mass-like lesion with no vascularity measuring 33 by 80 cm was seen. On the other hand, multi-hypoechoic, heterogeneous and irregular areas were seen in the right lip of the liver. The most significant lesions were 27 by 27 mm in the 6^{th} liver segment and 23 by 13 mm in the 7^{th} liver segment, respectively. The patient was asked to do an upright chest X-ray and supine abdominal X-ray for more investigation. Upright chest X-ray revealed nothing, as can be seen in Figure 1, but a dense mass-like lesion was seen in the left lower quadrant of the abdomen in supine abdominal X-ray, as can be seen in Figure 2. So, the patient was asked to do an abdominal computed tomography (CT) scan for more investigation, as can be seen in Figure3. The CT scan report was as follows: The image of a large lesion

with a diameter of 247 x 126mm containing fat, cystic, calcification, and teeth, as well as a solid 34 x 19mm except in the lower, left posterior part at the beginning of the pelvic cavity extending to the abdominal cavity to the epigastrium is seen preferably on the left and midline of the abdomen. Dislocation of the small intestine loop is anterior and, according to the above evidence, can suggest cystic teratoma of the ovary (possibly from the left ovary). Moderate free fluid is found in the peripheral and paracolic gutters and pelvis. Multiple hypodense lesions are seen in the liver parenchyma with a maximum diameter of 30 mm. Delayed images show a compressive effect of the cystic lesion on the right middle ureter. Blood test analysis presented leukocytosis (white blood cell [WBC] = 17400 mg/dl with neutrophil ratio of 90 % and lymphocyte ratio of 7 %), hemoglobin = 11.9 mg/dL, a high level of erythrocyte sedimentation rate (ESR) = 33 (usually should be under 15 in female), positive C-reactive protein (CRP), aspartate aminotransferase (AST) = 85 (normally should be under 31 in female), alanine aminotransferase (ALT) = 95 (normally should be under 31 in female), and metabolic acidosis, probably caused by decreased tissue perfusion. Other factors were in the normal range. In continuance, general tenderness was detected in physical examination during the patient's hospitalization. So, due to suspicion of a massive abdominal lesion and according to the clinical presentation and the results of blood tests and imaging reports, the patient underwent laparotomy. An abdominal midline incision was performed. After opening the patient's abdomen, approximately two liters of free fluid in the abdomen, containing pus and debris, which turned gray, was seen in the abdominal cavity and drained by suction. As can be seen in Figure 4, A large mass of right ovarian origin was seen sticking around. The adhesions were released, and the mass was completely removed from the patient's abdomen by salpingo-oophorectomy. The mass was huge and about 10 kg. On the other hand, as can be seen in Figure 5, multi liver lesions were seen in the right and left liver lips, and multi biopsies were provided and sent to a laboratory for more investigation. After providing necessary hemostasis, the abdomen area was washed with 10 Lit normal salines, a single drain was performed, and the abdomen was closed. The huge mass contains hair grafts and teeth, as can be seen in Figure 6. After the operation, the patient was transferred to the ICU and transferred to the surgery ward after three days. Ceftriaxone and metronidazole treatment was started for her and continued for ten days. The patient was discharged from the surgery department in good general condition after PO tolerance and defecation. There was no complication in the one-month follow-up. Finally, the pathology report revealed that the mass was mature cystic teratoma and was negative for malignancy, as can be seen in Figure7 and 8. Furthermore, the report approved that the liver lesions did not contain any malignant tissue or cell; they just contained hyalinized tissue without any specific cells, as can be seen in Figure 9.

Discussion:

Mature cystic teratoma is one of the most germ cell neoplasms that approximately includes 10-20 % of all ovarian neoplasms and 60 % of all benign neoplasms. It is also known as benign cystic teratoma or dermoid cyst [6,7]. Ectodermal element derivations are the most predominant findings in the microscopic investigation of mature cystic teratoma, but endodermal and mesodermal elements also can be found [2]. Mature cystic teratoma may contain hair follicles, skin, sweat glands, bones, teeth, nails, sebum, and blood. Dermoid cysts may be asymptomatic or present with abdominal pain, discomfort, and swelling due to cyst enlargement and compressive effect or cyst wall rupturing and secretion of its contents into the abdominal cavity [1,8].

According to advances in diagnostic methods, MCT over 10 cm is rare and unusual. Ovarian cysts larger than 5 cm are called large; if they grow more than 15 cm, they are called giant. MCT is a slow-growing cyst that can grow between 1.8 to 4 mm yearly [2,9].

Numerous complications can occur due to this disease, such as: torsion (16%), rupture (1-4%), malignancy (1-2%), infection (1%) and autoimmune hemolytic anemia (<1%) [10,11]. Some studies showed a relationship between size and the risk of malignant transformation; however, it is a rare condition and occurs in just 2% of cases, usually in older women [2].

There are different imaging methods to evaluate MCT, such as ultrasonography, computed tomography (CT) scan, and magnetic resonance imaging (MRI). However, the most widely used and available method is

ultrasonography, which can help physicians diagnose and evaluate this problem early [1,2].

In this case, the surgical team faced a huge MCT, approximately 245 x 205 x 121 mm, which occupied large space of the abdominal cavity from the right ovary to the epigastrium. After clinical investigation, and due to the patient's clinical presentation and general tenderness which appeared during daily physical examination, which was caused by cystic wall rupture, and based on the patient's age, the surgical team preferred salpingo-oophorectomy between other surgical methods and removed it completely.

Conclusion:

As this study showed, it is rare to find huge MCTs significantly bigger than 10 cm for different reasons mentioned above. They could be benign or found suddenly during routine medical examinations. Symptoms should be examined quickly and carefully because not paying attention to them can cause cysts with enormous dimensions, leading to many complications such as malignancy and cause life- threatening conditions.

References:

1. Tsalkidou EG, Memet IH, Chasan GM, et al. Ovarian cystectomy for huge mature cystic teratoma developed in less than five years: a case report. Gynecol Obstet Res Open J. 2016; 2(5): 99-101. doi: 10.17140/ GOROJ-2-123
2. Patrick I. Okonta, Chukwuemeke Mofon, "Huge Benign Ovarian Cystic Teratoma in a Patient with a History of Hansen's Disease", Case Reports in Obstetrics and Gynecology, vol. 2014, Article ID 345767, 3 pages, 2014. https://doi.org/10.1155/2014/345767
3. Smiti S, Tiwari PK. Malignant degeneration in ovarian cystic teratoma - A case report. Indian Journal of Radiology and Imaging. 2003 Dec 1;13(1):43-44.
4. Comerci JT Jr, Licciardi F, Bergh PA, Gregori C, Breen JL. Mature cystic teratoma: a clinicopathologic evaluation of 517 cases and review of the literature. Obstet Gynecol. 1994 Jul;84(1):22-8. PMID: 8008317.
5. Ayhan A, Bukulmez O, Genc C, et al. Mature cystic teratomas of the ovary: case series from one institution over 34 years. European Journal of Obstetrics Gynecology and Reproductive Biology, vol. 88, no. 2, pp. 153–157, 2000. DOI: 10.1016/S0301-2115(99)00141-4
6. S. Avci, F. Selcukbiricik, A. Bilici, G. Özkan, A. A. Özağarı, and F. Borlu, "Squamous cell carcinoma arising in a mature cystic teratoma," Case Reports in Obstetrics and Gynecology, vol. 2012, Article ID 314535, 3 pages, 2012.
7. Whitecar MP, Turner S, Higby MK. Adnexal masses in pregnancy: a review of 130 cases undergoing surgical management. Am J Obstet Gynecol. 1999 Jul;181(1):19-24. doi: 10.1016/s0002-9378(99)70429-1. PMID: 10411786.
8. Sah SP, Uprety D, Rani S. Germ cell tumors of the ovary: a clinicopathologic study of 121 cases from Nepal. Journal of Obstetrics and Gynaecology Research. 2004; 30(4): 303-308. doi: 10.1111/j.1447-0756.2004.00198.x
9. Caspi B, Appelman Z, Rabinerson D, Zalel Y, Tulandi T, Shoham Z. The growth pattern of ovarian dermoid cysts: a prospective study in premenopausal and postmenopausal women. Fertil Steril. 1997; 68: 501-505. doi: 10.1016/S0015-0282(97)00228-8
10. Outwater EK, Siegelman ES, Hunt JL. Ovarian teratomas: tumor types and imaging characteristics. Radiographics. 2001; 21: 475-490. doi: 10.1148/radiographics.21.2.g01mr09475
11. Kido A, Togashi K, Konishi I, et al. Dermoid cysts of the ovary with malignant transformation: MR appearance. AJR Am J Roentgenol. 1999; 172: 445-449. doi: 10.2214/ajr.172.2.9930800