MEDWIN PUBLISHERS
Committed to Create Value for Researchers

Open Access Journal of Gynecology
ISSN: 2474-9230

Clinicopathological Characteristics of Mature Teratoma with Pregnancy

Yufen Y* and Haimei L

Department of Pathology, Anyang Tumor Hospital, The Fourth Affiliated Hospital of Henan University of Science and Technology, China

***Corresponding author:** Yuan Yufen, Department of Pathology, Anyang Tumor Hospital, The Fourth Affiliated Hospital of Henan University of Science and Technology, Anyang, Henan, China, Email: yuanyufen2008@163.com

Research Article

Volume 6 Issue 2

Received Date: March 25, 2021

Published Date: June 18, 2021

DOI: 10.23880/oajg-16000216

Abstract

Purpose: To investigate the clinicopathological characteristics of mature teratoma with pregnancy.

Methods: Retrospectively analysis of 759 cases mature teratoma was done from the first half of 2000 to the second half of 2013 in Anyang Tumor Hospital. The clinicopathological characteristics of mature teratoma with pregnancy were reviewed retrospectively

Results: All patients have a history of pregnancy. Patient ages range from 25 to 42. Two cases were tubal pregnancy, and the rest were intrauterine pregnancy. One case is an outpatient case. 4 cases had atypical symptom. Adnexal masses were found in 4 cases during pregnancy examination. Radiography showed adnexal cystic solid mass with or without gestational sac. Accessory excision of affected side was performed with or without complete curettage of uterine cavity. Gestational age varied from 4 to 20 weeks. Pathological results show that ovarian cystic mass contains hair and oil. All the endoderm tissues in the tumor are differentiated and mature. There were a lot of clots and some villi in the removed tissues of fallopian tube or uterine cavity. Maximum diameter of 5 cases was greater than or equal to 10 cm.

Conclusions: Teratoma with pregnancy is common for young women less than 40 years. Selective surgery is recommended to patients with early pregnancy for maternal and fetal safety. After 12 weeks of gestation, laparoscopic operation was performed. Teratomas are the most prone to torsion and acute abdomen, so in principle, laparoscopic surgery should be used in pregnancy with teratomas.

Keywords: Clinicopathological Characteristics; Mature Teratoma; Pregnancy; Surgery

Introduction

Pregnancy is of great significance to patients and their families [1]. Pregnancy is associated with a lot of tumors, including benign and malignant tumors [2-7]. Endometrial cancer, breast cancer, krukenberg tumor and other tumors are common [8-10]. During pregnancy, many tumors can occur, including teratoma and breast cancer [8,11]. The treatment of abdominal and pelvic tumors during pregnancy is a problem that puzzles clinicians [4,5,11].

Teratoma is a common complication of pregnancy. Up to a quarter of ovarian masses originate from germ cells, and teratomas include mature and immature. The former is more common during pregnancy [11]. The clinical symptoms are not specific. The main manifestation is pelvic mass, and a quarter of patients are found by accident [11,12]. But one tenth of patients will have acute abdominal pain due to tumor rupture, torsion or bleeding. The secondary development of malignancy is a rare but well-known phenomenon in patients with teratoma. Here, we observe the patients of

mature teratoma with pregnancy in our hospital in order to improve our understanding of it.

Patients and Methods

759 cases mature teratoma was retrospectively analyzed from the first half of 2000 to the second half of 2013 in Anyang Tumor Hospital. The clinicopathological characteristics of mature teratoma with pregnancy were reviewed, which mainly included clinical symptoms, pregnancy, tumor markers, surgical methods and pathological features.

All tissues obtained by operation were fixed with 10% formalin and then embedded in paraffin. The tissues were cut into 5 mm slices, and serial 4 μm sections were stained with hematoxylin and eosin (HE). Tissues were then observed under different objective lenses. All pathological sections were confirmed by two senior doctors or above.

Results

Patient ages range from 25 to 42 with an average of 31.11. and the duration of pregnancy varies from 23 days to 141 days (Table 1). Except for four patients with nonspecific clinical symptoms, others were found unintentionally during pregnancy test. All patients were non-smokers and received accessory excision of affected side. Patients were followed-up for a minimum of 36 months and a maximum of 101 months (median follow-up 77.2 months).

No.	age	P	G	A	site	V_{max}	weeks	symptom
1	30	2	1	1	R	9cm	11	no
2	42	3	1	1	L	6cm	6	Vaginal bleeding
3	27	4	2	2	L	10cm	7	abdominal pain
4	28	1	0	1	L	10cm	15	no
5	26	3	0	3	R	5cm	7	no
6	28	3	1	2	R	3.5cm	10	Vaginal bleeding
7	25	1	0	1	R	12cm	7	Frequent urination
8	33	/	/	/	L	15cm	20	no
9	41	4	1	3	L	10cm	12	no

Table 1: Clinical characteristics of 9 cases mature teratoma with pregnancy.
P= Pregnancy; D= Delivery; A=Abortion; R=right; L=left

Imaging examination showed that mixed mass of cyst and solid in affected ovary. The uterine body is enlarged, and the echo of uterine wall is homogeneous. The echo of gestational sac is visible in the uterine cavity; meanwhile the echo of embryo and the pulsation of primitive blood vessels can be detected in some cases. Only irregular thickening of endometrium was found in one patient after abortion, and no gestational sac was found.

On the general section, a cystic solid mass with hair and grease was seen. The affected adnexa with ectopic pregnancy were an irregular mass with incomplete capsule, and the ipsilateral ovary was surrounded by hematoma. Villi can be seen in the curettage of uterine cavity, and embryo can be seen in some cases.

No.	TSGF	CA125	AFP	β-HCG	Urinary HCG	CA199	CEA
1	high	high	normal		negative		
2		normal					
3		high					
4		high					
5							
6		normal	normal	high		normal	normal
7							
8							
9	normal	high					

Table 2: Tumor markers of 9 cases mature teratoma with pregnancy.

The laboratory tumor index showed that CA125 increased in 4 cases (Table 2). Histologic sections of the specimen show that there are mature and differentiated multiple germ cells, and the most common are squamous epithelium, skin appendages, fat components, and so on massive clots were seen locally (Table 3). The sections of uterine cavity prolapse showed that the endometrium with high reaction change in secretory phase was accompanied with interstitial decidua change. Some villi and proliferative trophoblasts were consistent with pregnancy. Embryos are occasionally seen.

No.	Gestation				Affected Ovary	
	site	villus	clot/ necrosis	Endometrium gland/ stroma	site	atypical
1	L-FT	visible	visible	/	R	no
2	R-FT	visible	visible	/	L	visible
3	UC	visible	visible	not mentioned	L	no
4	UC	visible	visible	HR/ decidua	L	no
5	UC	striking	visible	null/ edema	R	no
6	UC	visible	visible	null/ decidua	R	no
7	UC	visible	visible	secretory/ decidua	R	no
8	UC*	/	/	/	L	no
9	UC	visible	visible	secretory, embryo / decidua	L	no

Table 3: Pathological characteristics of 9 cases mature teratoma with pregnancy.
FT=Fallopian Tube; UC=Uterine Cavity; HR= Highly Reactive; *= Unoperated; R=right; L=left

Discussion

We conducted this study to determine the association of mature teratoma and pregnancy and found that mature teratoma simultaneous with pregnancy was common. Mature teratoma has no effect on ovulation. Awareness is growing that neoplasm can be treated during pregnancy, but the effect of this change on maternal and neonatal outcomes is unknown.

Teratoma is a common tumor derived from germ cells. It is more common in women especially in ovaries. Teratoma outside gonads accounts for 2% -5% of adult germ cell tumors. It is most common in mediastinum and omentum [12,13]. Teratoma can show different clinical symptoms, mainly in pelvic cavity and abdominal cavity, so timely and effective treatment is necessary [14-18].

In our study, 8 cases chose appendectomy combined with curettage abortion. The main reason for the operation is that the patient had no requirement for childbearing or had a history of incomplete, also few for the fear of affecting fetal growth and development. Occasional spontaneous abortion can be seen after surgery. Overall, surgical management of adnexal masses during pregnancy appears to have favorable outcomes for the mother and the fetus [19]. A research of 337 cases pregnancy with ovarian tumor in obstetrics department of Wuxi Maternal and Child Health Hospital showed that early detection of ovarian tumor is very important. Timely operation does not affect the outcome of pregnancy.

In conclusion, teratomas associated with pregnancy are mostly cystic mature teratomas, so tumor resection can be performed in the middle of pregnancy without any harmful to the fetus, especially for those who have fertility requirements.

References

1. Seak CJ, Goh ZNL, Wong AC, Seak JC, Seak CK (2019) Unilateral live twin tubal ectopic pregnancy presenting at 12 weeks of gestation: A case report. Medicine (Baltimore) 98(38): e17229.

2. Niu X, Li CI, Mueller BA (2019) Obstetrical and infant outcomes among women with neoplasms during pregnancy. Cancer Causes Control 30(6): 651-661.

3. Kamphues CH, Röcken C, Neuhaus P, Neumann UP (2009) Non-functioning, malignant pancreatic neuroendocrine tumour (PNET): a rare entity during pregnancy. Langenbecks Arch Surg 394(2): 387-391.

4. Chen Y, Luo Y, Han C, Tian W, Yang W, et al. (2018) Ovarian dysgerminoma in pregnancy: A case report and literature review. Cancer Biol Ther 19(8): 649-658.

5. Berczi C, Osvath P, Flasko T (2015) Large benign retroperitoneal tumour in pregnancy. Can Urol Assoc J

9(7-8): E551-E553.

6. Pinnix CC, Osborne EM, Chihara D, Lai P, Zhou S, et al. (2016) Maternal and Fetal Outcomes After Therapy for Hodgkin or Non-Hodgkin Lymphoma Diagnosed During Pregnancy. JAMA Oncol 2(8): 1065-1069.

7. Dagogo-Jack I, Gainor JF, Porter RL, Schultz KR, Solomon BJ, et al. (2016) Clinicopathologic Features of NSCLC Diagnosed During Pregnancy or the Peripartum Period in the Era of Molecular Genotyping. J Thorac Oncol 11(9): 1522-1528.

8. Iqbal J, Amir E, Rochon PA, Giannakeas V, Sun P, et al. (2017) Association of the timing of pregnancy with survival in women with breast cancer. JAMA Oncol 3(5): 659-665.

9. Husby A, Wohlfahrt J, Melbye M (2019) Pregnancy duration and endometrial cancer risk: nationwide cohort study. BMJ 366: l4693.

10. de Haan J, Verheecke M, Van Calsteren K, Van Calster B, Shmakov RG, et al. (2018) Oncological management and obstetric and neonatal outcomes for women diagnosed with cancer during pregnancy: a 20-year international cohort study of 1170 patients. Lancet Oncol 19(3): 337-346.

11. Terashi T, Hamakawa H, Neri S, Miyamoto E, Yamada Y, et al. (2011) Insulin-producing mediastinal teratoma in early pregnancy. J Thorac Oncol 6(8): 1441-1442.

12. Kakuda M, Matsuzaki S, Kobayashi E, Yoshino K, Morii E, et al. (2015) A Case of Extragonadal Teratoma in the Pouch of Douglas and Literature Review. J Minim Invasive Gynecol 22(7): 1311-1317.

13. Duwe BV, Sterman DH, Musani AI (2005) Tumors of the mediastinum. Chest 128(4): 2893-2909.

14. Saylor PJ, Dudzinski DM, Mendoza DP, Glomski K (2019) Case 14-2019: A 44-Year-Old Man with Neck Pain and Swelling. N Engl J Med 380(19): 1854-1863.

15. Wang B, Zhang H (2017) Dense, Mysterious, Small Balls in the Abdomen. Gastroenterology 155(1): 19-20.

16. Ilyas G, Laskar DB, Banihashemi A (2018) A Rare Cause of Cecal Fistula. Gastroenterology 154(1): e12-e13.

17. Pendlebury A, Rischin D, Ireland-Jenkin K, Toner GC, Grant P (2015) Ovarian Growing Teratoma Syndrome with Spuriously Elevated α-Fetoprotein. J Clin Oncol 33(24): e99-100.

18. Hackethal A, Brueggmann D, Bohlmann MK, Franke FE, Tinneberg HR, et al. (2008) Squamous-cell carcinoma in mature cystic teratoma of the ovary: systematic review and analysis of published data. Lancet Oncol 9(12): 1173-1180.

19. Ngu SF, Cheung VY, Pun TC (2014) Surgical management of adnexal masses in pregnancy. JSLS 18(1): 71-75.