Case Report

Struma ovarii – an interesting case of ovarian tumor in pregnancy

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Abstract

Introduction: Dermoid tumors in pregnancy occur not infrequently. Struma ovarii comprises 1–4% of all dermoid tumors of the ovary, and very rarely presents in a malignant form, occurring in 0.3%–5% of all struma ovarii tumors. Struma ovarii belongs to the group of monodermic teratomas. It is a rare variety of ovarian neoplasm. The condition is difficult to identify without histopathological examination. Surgery is the only treatment because malignant alteration is possible and thyroid hyperactivity or hyperthyroidism may occur. Our patient had dermoid–struma ovarii throughout pregnancy and had uneventful pregnancy outcome.
Keywords: Struma ovarii, dermoid in pregnancy.

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Received Date: 26/08/2014 Accepted Date: 06/09/2014

Access this article online

Quick Response Code:

Website: www.statperson.com

DOI: 07 August 2014

INTRODUCTION

Ovarian tumors are reported in 1 of every 200 pregnancies and may cause serious problems such as torsion, infarction, and obstruction of vaginal delivery. These tumors have typically been removed by elective surgery, preferably in the second trimester. Because abdominal surgery significantly stresses both the mother and fetus, these cases pose challenge Thyroid tissue is observed not uncommonly in 5–15% of dermoid tumors. Struma ovarii is a teratoma defined by the presence of thyroid tissue in more than 50% of the tumor. Struma ovarii comprises 1–4% of benign ovarian teratoma. It is a benign condition, but occasionally malignant transformation is observed in about 5% of cases. However, due to rarity of this type of tumor there has been a paucity of data in the past literature pertaining to diagnosis and treatment of this tumor. We report a case of struma ovarii, to attempt to define the clinical features and characteristics of this tumor.

CASE REPORT

Mrs. V, 24 years, presented to antenatal outpatient department with 2 months amenorrhoea and history of a positive urine pregnancy test at home. She was 4th gravida with history of ruptured ectopic pregnancy on right side in the first pregnancy for which she had undergone exploratory laparotomy with right salpingo-ophorectomy. Her second pregnancy landed up in a spontaneous abortion of 2 months. She was lucky to carry her third pregnancy to term, delivering a baby boy by caesarean section which now was 2 years old and healthy. Her previous operative notes revealed her caesarean section was difficult as it was not possible to open peritoneum because of dense between anterior uterine surface and parites. Her general examination was normal and on pelvic examination because of previous surgeries, it was difficult to know uterine size, there was no tenderness. She was asked to have an ultrasound (USG) examination for confirmation of intrauterine gestation. USG revealed 8 weeks live intrauterine gestation with left ovarian mass of 5.2 cms. It was multiloculated. No ascites was found on USG. Because she was asymptomatic, we offered her laparotomy in the second trimester sos earlier. She didn't turn up for follow up for 2 months. When she

How to site this article: P L Bhanap, Dinesh Kulkarni. Struma ovarii – an interesting case of ovarian tumor in pregnancy. *MedPulse – International Medical Journal* August 2014; 1(8): 385-388. http://www.medpulse.in (accessed 10 August 2014).

came, she was asymptomatic, repeat USG showed good fetal growth and ovarian mass was now 5.4 cms. She and her relatives refused to undergo laparotomy knowing well all her previous surgeries were difficult. They requested to have an elective caesarean during which this mass could be dealt with. We offered them all the help to have informed choice. Her pregnancy continued well till term. We did an elective caesarean section – intraoperatively, we faced the same problem of adherent parites. Baby boy was fine, weighed 2.5 Kg. After achieving hemostasis, we opened perioneum at cranial end with much difficulty and delivered out the left ovarian mass which was densely adherent all around. This mass of almost 6 cms was removed, hemostasis achieved and abdomen closed in layers. Post-operative period was uneventful. Thyroid tissue is observed not uncommonly in 5–15% of dermoid tumors. Struma ovarii is a teratoma defined by the presence of thyroid tissue in more than 50% of the tumor. Struma ovarii comprises 1–4% of benign ovarian teratoma. It is a benign condition, but occasionally malignant transformation is observed in about 5% of cases. However, due to rarity of this type of tumor there has been a paucity of data in the past literature pertaining to diagnosis and treatment of this tumor. We report a case of struma ovarii, to attempt to define the clinical features and characteristics of this tumor.

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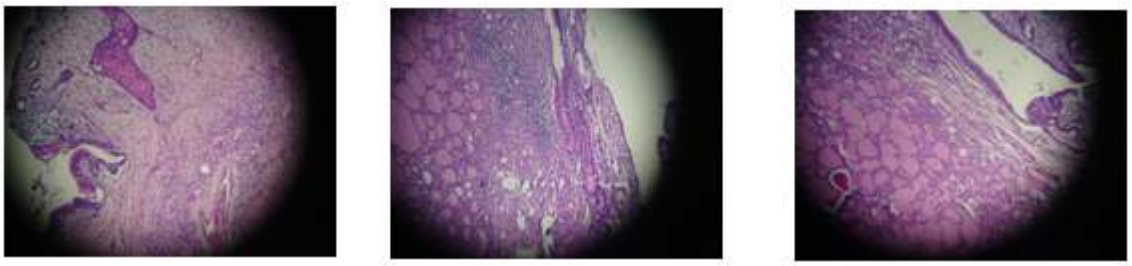

Figure 1:

Pathological Examination

Morphology of Ovarian cyst - Specimen of ovary with attached fallopian tube 6x4x2 cm soft cystic (fig. 1). Cut surface shows multi locular cysts filled with tuft of hair and pultaceous material. Cyst wall smooth with solid areas at places fig). Sections from cyst wall show elements derived from ectoderm, endoderm and mesoderm. Shows maximum amount of thyroid follicles lined by columnar cells and good quantity of colloid in their lumina. Also show mucin secreting glands, pseudostratified columnar ciliated respiratory epithelium, squamous epithelium with fibrous tissue and adipose tissue. At places show chondroid tissue. No evidence of malignancy. (fig).

DISCUSSION

Because abdominal surgery significantly stresses both the mother and fetus, a study was planned to determine the

optimal management of ovarian tumors in 89 pregnant women with tumors requiring surgery. Surgery was emergent because of torsion of the tumor in 36 cases (group A) and elective in 53 cases (group B). The 2 groups were similar in maternal age, parity, and gestational age at the time of surgery. Emergency surgery was done in the first, second, and third trimesters in 22, 5, and 9 women, respectively. Elective surgery was done in the second trimester in two thirds of cases and in the first trimester in the others. Mean birth weights were similar for the 2 groups, but preterm births were significantly more frequent in group A (22% vs. 4%). There was no group difference in gestational age at preterm delivery. Tumors were of comparable size in the 2 groups, and there was no difference in their location. Most tumors were 6 to 10 cm in size. Nearly 10% of women in both groups had bilateral ovarian tumors. There were no perinatal deaths, and no difference was noted in rates of vaginal or caesarean delivery. Dermoid cyst was the most common histologic diagnosis, accounting for 36% of group A and 45% of group B cases. Two groups a tumors but none of those in group B were malignant in this series, the risk of adverse pregnancy outcomes was not greater when surgery was delayed until symptoms of ovarian tumor developed rather than being done electively. The authors favor a conservative approach. The management of adnexal masses during pregnancy can be challenging for the patient and the clinician. The specter of a possible malignancy can sway the decision for intervention versus expectant management. The etiologies of ovarian masses are reflective of the patient's age; and, therefore, benign entities such as functional ovarian cysts, benign cystic teratomas, and serous cystadenomas predominate. In the unusual cases when cancer is present, they are typically germ cell and borderline ovarian tumors, and are commonly low stage and low grade. Ultrasound is the primary modality used to detect ovarian masses and to assess the risk of malignancy. Morphologic criteria more accurately identify benign cysts compared with malignant tumors. Tumor markers are used primarily to monitor disease status after treatment rather than establish the ovarian tumor diagnosis as a result of lack of specificity, because several markers can be elevated inherent to the pregnancy itself (eg, CA-125, β-hCG). Expectant management is recommended for most pregnant patients with asymptomatic, nonsuspicious cystic ovarian masses. Surgical intervention during pregnancy is indicated for large and/or symptomatic tumors and those that appear highly suspicious for malignancy on imaging tests. The extent of surgery depends on the intraoperative diagnosis of a benign versus a malignant tumor. Conservative surgery is appropriate for benign masses and borderline ovarian tumors. More aggressive surgery is indicated for ovarian malignancies, including surgical staging. Although rarely necessary, chemotherapy has been used during pregnancy with minimal fetal toxicity in patients with advanced-stage ovarian cancer in which the risk of maternal mortality outweighs the fetal consequences. Struma ovarii comprises 1–4% of all dermoid tumors of the ovary, and very rarely presents in a malignant form, occurring in 0.3%–5% of all struma ovarii tumors. The search of database in the Hospital of Ben Arous starting from 2005 to date has found only three cases of struma ovarii among a total of 35 dermoid tumors. Struma ovarii usually presents after age of 40 years and the peak age of incidence is in the fifth decade. This tumor is present in only 17.6% of cases in patients under 30 years. Clinical symptoms previously reported due to the presence of a struma ovarii are very diversed, such as lower abdominal pain, palpable lower abdominal mass, abnormal vaginal bleeding, ascites, hydrothorax, elevated thyroid function and rarely thyroid tumors. Previous reports have shown that up to 47,1% of patients with struma ovarii are without symptoms, or are accompanied by non-specific symptoms that are similar to other ovarian tumors. It has been recommended in a previous study that thyroid function tests have to be conducted in the presence of symptoms and signs related to thyroid dysfunction. The incidence of thyroid hyperfunction has been reported to be 5–8% of patients with struma ovarii. Ultrasonography permits the diagnosis of the ovarian masses, but orients to the diagnosis of struma ovarii in about 11.8% of cases only. Thus, struma ovarii does not have definite clinical or imaging characteristics that differentiate it from other ovarian tumors, with the exception of hyperthyroid symptoms if present. The final diagnosis of struma ovarii is based on pathology examination of the resected cyst/ovary, which permits at the same time, to confirm or exclude malignancy. Extensive grossing is required to rule out any other component before labeling it as monodermal teratoma. Struma ovarii typically consists of normal-appearing thyroidal tissue composed of thyroid follicles of various sizes and often is associated with mature cystic teratoma. Histologically, struma ovarii can also resemble thyroid adenoma of follicular, fetal, or embryonal type or thyroid carcinoma. About 5% of struma ovarii are malignant. Clinical features are quite similar, and malignancy should always be suspected, especially when the ovarian tumor is associated to ascites, elevated CA-125 levels, or sometimes a "pseudo-Meigs" syndrome. Therapy for benign struma ovarii is surgical resection. The optimal way of management is, however, very controversial. The very suspicious clinical features and peroperative findings of the tumor add to this controversy. For women desiring further pregnancies,

conservative management which consists of a simple cystectomy or a unilateral oophorectomy, seems to be the optimal treatment. Although infrequent, there have been reports of cases where women have had successful pregnancies after such conservative procedures in malignant struma ovarii.

REFERECNES

1. Willemse PH, Oosterhuis JW, Aalders JG, *et al*. Malignant struma ovarii treated by ovariectomy, thyroidectomy, and 131I administration. Cancer 1987; 60:178–2.
2. Gould SF, Lopez RL, Speers WC. Malignant struma ovarii. A case report and literature review. J Reprod Med 1983; 28:415–9.
3. Teilum G. Struma ovarii. In: Teilum G, editor. Special Tumors of Ovary and Testis. Philadelphia: J.B. Lippincott 1971:166.
4. Ayhan A, Yanik F, Tuncer R, Tuncer ZS, Ruacan S. Struma ovarii. Int J Gynaecol Obstet 1993; 42:143–6.
5. Rana V, Srinivas V, Bandyopadhyay S, Ghosh SK, Singh Y. Bilateral benign non functional struma ovarii with Pseudo-Meigs' syndrome. Indian J Pathol Microbiol 2009; 52:94–6.
6. Seung-Chul Yoo, Ki-Hong Chang, Mi-Ok Lyu, Suk-Joon Chang, Hee-Sug Ryu, Haeng-Soo Kim. Clinical characteristics of struma ovarii, J Gynecol Oncol 2008 June; 2(19):135–8.
7. O'Connell GJ, Ryan E, Murphy KJ, Prefontaine M. Predictive value of carbohydrate antigen-125 for ovarian carcinoma in patients presenting with pelvic masses. Obstet Gynecol 1987; 70:930–2.
8. Bast RC, Feeney M, Lazarus H, Nadler LM, Colvin RB, Knapp RC. Reactivity of a monoclonal antibody with a human ovarian carcinoma. J Clin Invest 1981; 68:1331–7.
9. Managing Ovarian Masses During Pregnancy Leiserowitz, Gary S. M.D. Obstetrical and Gynecological Survey:July 2006 - Volume 61 - Issue 7 - pp 463-470
10. Elective vs. Conservative Management of Ovarian Tumors in Pregnancy Lee, G S.R.; Hur, S Y.; Shin, J C.; Kim, S P.; Kim, S J. Obstetrical and Gynecological Survey: January 2005 - Volume 60 - Issue 1 - pp 8-10

Source of Support: None Declared
Conflict of Interest: None Declared