

Adnexal masses in the third trimester of pregnancy in Mahdieh Hospital, Tehran, between 2002 and 2006

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Abstract

Background: The prevalence of adnexal tumour has been reported to vary between one in eight thousands to 2.3% of pregnancies according to investigational techniques administered. Broader use of ultrasonography in pregnancy and the increasing rate of caesarean section (c-section) could be expected to lead to the diagnosis of more adnexal tumours compared to previous studies.

Aim and objectives: To identify the histological types, clinical manifestations, prevalence of malignant forms, and to assess the risk of two selected treatment approaches i.e. surgical (invasive) vs. conservative.

Method: This retrospective descriptive study was conducted on patients admitted to Mahdieh Hospital, Tehran, between 2002-2006 with confirmed adnexal tumours in the third trimester of pregnancy. Patients' medical records were reviewed for age, gestational age, parity, the reason for admission, diagnostic approach for adnexal tumour, ultrasound characteristics (where available), surgical and histopathological findings.

Results: In all, 45 patients were recognised. Mean age was 27.8 (± 4.8) and mean gravity was 2.1 (± 1.2). Incidence rate for surgically confirmed adnexal malignancy in the third trimester was one in 570 live births and one in every 184 caesarean section. In forty three patients, diagnosis and tumour resection occurred during caesarean section of whom the reason for c-section was the adnexal mass in five cases, 33 were accidentally found during c-section due to obstetrics indications and the remainder (5 cases) was due to both causes. One case underwent tumour resection after post-partum tuboligation and one after vaginal delivery followed by laparotomy. No complication due to malignancy was found. Diagnostic procedure was ultrasonography only in 10 patients (23%). of whom, half were in the third trimester and half were detected in the first trimester with the adnexal mass being 5-10 cm in diameter. All were benign in line with histological features. In 35 patients, no mass was reported despite ultrasonography. All had benign features in histopathology and the most frequent diagnosis was paratubal cyst followed by serous-cyst adenoma.

Conclusion: Adnexal tumour complications in the third trimester are not frequent and the risk of malignancy is low. Therefore, if diagnosed, it is not a definite indication for an urgent surgical intervention provided that ultrasonographic feature of the mass is benign.

Keywords: adnexal tumour, pregnancy, third trimester

Introduction

The prevalence of adnexal tumour has been reported to vary between one in eight thousands to 2.3% of pregnancies.[1-4]. The reason for this wide range of reports is the use of various investigational techniques, from clinical approaches to ultrasound or other imaging techniques.[1;2]. Broader use of ultrasonography in pregnancy and the increasing rate of caesarean section could be expected to lead

to more diagnosis of adnexal tumours compared to previous studies.[1] The majority of detected tumours by ultrasound scan in the first trimester of pregnancy are luteal cysts which disappear spontaneously. [2;5]

Traditionally and according to previous studies, it is recommended to surgically remove the remaining masses electively in the second trimester of pregnancy to avoid further complications such as torsion, rupture –which can lead to abortion or premature delivery- and the probability of

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malignancy.[1;2;5-7] Abdominal surgery, however, could be hazardous for the mother and foetus. In addition, it has been shown in several studies that there is a lesser chance for ovarian malignancy (0.8-10%) during pregnancy;[2;8;9] and also the complications due to torsion and rupture are unlikely and restricted to the first trimester[1;2;5]. Therefore, conservative follow up of these tumours has been recommended when there is no evidence for malignancy.[1;5] It seems that the approach towards adnexal tumours remains as a discrepancy in clinical decision making.

This study was conducted in Mahdieh Hospital, Tehran, to investigate adnexal tumours in the third trimester of pregnancy, to identify the histological types, clinical manifestations, the prevalence of malignant forms, and to assess the risk of two selected treatment approaches i.e. surgical (invasive) vs. conservative, between 2002 and 2006.

Method

A retrospective descriptive study was conducted on all patients admitted to Mahdieh Hospital, Tehran, who presented with adnexal tumours in the third trimester of pregnancy during March 2002 until Nov 2006. Medical records were reviewed for age, gestational age, parity, reason for admission, diagnostic approach for adnexal tumour, ultrasound characteristics (where available) and surgical and histopathological findings.

Results

During this period of time, an overall of 25644 live births including 8292 c-section were registered in Mahdieh hospital. Forty five patients were identified with adnexal tumours in the third trimester of their pregnancy during the period of this study. Incidence rate for surgically confirmed adnexal malignancy in the third trimester was one in 570 live births and one

in every 184 c-section. Mean age was 27.8 (±4.8) and mean gravity was 2.1 (±1.2).

The mass was removed in c-section in 43 patients, of whom, the reason for c-section was the adnexal mass in 5 (12%), obstetrics indications in 33 (76%) where the mass was exposed inadvertently and the remainder (12%) was due to both causes. One patient underwent laparotomy for tuboligation and the mass was removed. In another patient abnormal abdominal enlargement after vaginal delivery was suspicious for adnexal tumour, which was confirmed in ultrasound investigations and was then removed surgically. There was no history of hospital admission due to surgical complications of adnexal tumour surgery such as acute abdominal pain.

In 10 patients (23%) who referred to the hospital in the third trimester, adnexal tumour was diagnosed by ultrasonography. In four patients of this group, diagnosis was made in the first trimester and was confirmed by further examinations. The mass was diagnosed in one patient in the second trimester and in the rest (5 patients) in the third trimester.

Five patients due to only abdominal mass, three due to repeated c- sections and abdominal mass, one due to triplet pregnancy and abdominal mass and one because of oblique presentation and abdominal mass underwent caesarean section. In two patients (of these ten) bilateral adnexal mass was detected in ultrasound which was confirmed during surgery. One was bilateral dermoid cyst and the other was bilateral mucinous cystadenoma. In six patients, the size of tumour in ultrasound was between 5-10 centimetres and in 4 it was reported to be more than 10 cm. Ultrasonography diagnosis was benign adnexal mass in all 10 patients including one with solid mass in ultrasound scan which was diagnosed as dermoid tumour. Table-1 demonstrates histological and ultrasound findings of these patients.

Table 1: Histological feature of tumour based on ultrasound findings

	Dermoid	Serous cystadenoma	Mucinous cystadenoma	Endometrium	Paratubal cyst
Simple	1	2	1	1	1
Complex*			3		
Solid	1				

*Complex tumor: Tumors with multilocular or with septum or with solid and cystic region.

In the remaining 35 patients of this cohort, although there were masses greater than 5 centimetres in 13 patients and ultrasound was done

during pregnancy, no adnexal mass was reported in ultrasonography.

Surgical findings were as follows: tumour was located in paratubal in 14 cases, and 31 cases were

in the ovary. The diameter of the mass was between 5-10 cm in 17 cases, and 9 cm or greater in 9 cases. In 4 patients (9%), tumour was found in both sides, which was dermoid cyst (in 2 cases) and mucinous cystadenoma (in one case). In surgical minutes, 26 were reported as simple cystic lesions, 4 as multilocular and only one (ovary fibroma) as a solid mass. None was reported as distorted or ruptured. Histological investigation indicated all masses as benign; malignant or intermediate tumours were not reported. Histological features are illustrated in table 2.

Table 2: Histological features of adnexal tumours detected in the third trimester

Type of tumour	Frequency	Percent
Paratubal cyst	14	31%
Serous cystadenoma	11	24%
Dermoid	8	18%
Mucinous	6	13%
Ovary fibroma	1	2%
Endometrium	2	4%
Mixed seromucinous cyst adenoma	3	7%

Discussion

Surgical resection of adnexal tumours which continue to exist after the first trimester has been recommended in the literature to avoid complications such as rupture, torsion, bleeding, dystocia during delivery and risk of malignancy. Unlike significant improvements in medicine and more precise diagnosis of these masses, this policy is still followed[1;2;7;10].

In this study, none of the patients had signs due to adnexal tumour complications. Only one patient underwent caesarean section due to failure to progress in whom an eight cm dermoid mass in ovary was detected; however, there is no certain causal relationship. Ovarian tumour was proposed previously as a predisposing factor of failure to progress[6;11], though Whitecar et al did not reported any cases of dystocia due to adnexal masses[1].

In our study, the prevalence of adnexal mass in the third trimester leading to surgical intervention was one in 570 (0.017%) and 184 (0.71%) in live birth and c-section; respectively, which was in line with other studies[12;13]. Regarding the fact that in 73% of cases (33 patients), adnexal tumour was accidentally discovered during surgery and also the retrospective design and nature of this study, one

may argue that the true prevalence of this condition might be more than these figures.

The most prevalent histological type in our study was cystadenoma (44%), followed by paratubal cyst (31%) and dermoid cyst (18%), while dermoid cyst and then cystadenoma were more prevalent in other studies[1;2]. Malignant or intermediate tumours were not found in our enquiry in line with another study[13], while others have reported malignancy rate as 2.2% or higher[2;12].

Using ultrasonography to differentiate between benign from malignant during pregnancy was proposed by Thornton and Wells[14], who suggested simple cysts could be followed up conservatively during pregnancy. In our study ultrasonographic features confirming benign nature of the mass was in accordance with histological findings. In 10 cases (23%), however, the diagnostic ultrasound scan was performed before surgery and in 73% of cases, adnexal mass was not reported in spite of ultrasonography. Whitecar and colleagues reported accidentally found adnexal tumours in 33 out of 49 patients during c-section[1]. They also reported discrepancies in histological (intermediate tumour) and ultrasound findings (simple cyst) in 2 patients and also inappropriateness of this procedure to find out the origin of a pelvic mass. MRI, in other studies, has been proposed as a helpful imaging procedure for these situations[15;16].

Conclusion

Results of this study and other similar studies indicate that adnexal tumours after the first trimester are not frequent and the risk of malignancy is low. Therefore, detecting adnexal tumours in the third trimester is not a definite indication for an urgent surgical intervention provided that ultrasonographic features of the mass is benign. Further researches are warranted to verify this hypothesis with prospective studies using ultrasonography, precise adnexal examination during pregnancy, deployment of modern procedures like Doppler and MRI to compare results with histopathologic findings.

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