International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Manivasakan J et al. Int J Reprod Contracept Obstet Gynecol. 2012 Dec;1(1):12-16
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: 10.5455/2320-1770.ijrcog000812

Research Article

A study of benign adnexal masses

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Received: 21 November 2012
Revised: 5 December 2012
Accepted: 14 December 2012

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ABSTRACT

Background: To study the relationship between age, symptoms, ultrasound findings, size and histological type of benign adnexal masses.
Methods: Clinical records were retrieved of women who had surgical management for adnexal tumors in the study period, i.e. from January 2007 to December 2010 at Sri Manakula Vinayagar Medical College and Hospital, Puducherry.
Results: There were 112 cases of ovarian tumors and tumor like lesions. 70.5% were diagnosed as ovarian tumors, 12.5% were functional cysts, 10.7% were paraovarian and paratubal cysts, 6.25% were hemorrhagic infarct where histopathology could not be reported. The age of the patient ranged from 11 to 70 years. Most of the patients (70.5%) presented with abdominal pain either acute or chronic. Serous cystadenoma was the most common reported ovarian tumor (59.5%) followed by mucinous cystadenoma (20%) and mature cystic teratoma (14%). The cystic tumors were either functional cysts or benign tumors.
Conclusions: The commonest tumor was surface epithelial tumor. Serous cystadenoma was the most common benign tumor. Serous and mucinous tumors occurred equally on both sides. The accuracy of preoperative ultrasound was higher in dermoid cysts followed by endometriotic cysts.

Keywords: Adnexal mass, Ovarian mass, Histopathology

INTRODUCTION

Most benign and malignant ovarian masses are predominantly cystic. Differentiation of these is not always clinically apparent using either imaging tools or tumor markers.[1] These cysts often require excision because of symptoms or the possibility of cancer and consequently their economic impact is significant. Ovarian cysts are best identified by transvaginal ultra sound. Larger cysts may also need to be examined by abdominal ultra sound. The management will depend upon the severity of the symptoms, the size, ultrasound characteristics of the cyst, CA 125 results, age of the patient, the risk of malignancy and her desire for further children. The objective of this study is to study the relationship between age, symptoms, ultrasound findings, size and histological type and size of ovarian tumor.

METHODS

This is a descriptive study of women who had adnexal tumors in their histopathology report from January 2007 through December2010 at Sri Manakula Vinayagar medical college and hospital, Puducherry, South India. There were One hundred and twelve cases of benign ovarian and para ovarian masses during the study period. The medical records of adnexal tumor were reviewed and information regarding age, parity, chief complaints, ultrasound and clinical diagnosis were analyzed.

RESULTS

A total of 2285 gynecological patients were admitted from January 2007 to December 2010. There were 112 cases of ovarian tumors and tumor like lesions. Seventy nine cases were benign ovarian tumors. Fourteen cases were functional cysts. Eight cases were para ovarian masses. Four cases were paratubal cysts. Seven cases were hemorrhagic infarct. The age of the patient ranged

from 11 to 70 years. Majority of the patients presented with pain abdomen (70.5%). Menorrhagia and dysmenorrhea were the second most common complaints.

Table 1: Symptoms.

Symptoms	Number of cases	Percentage
Abdominal pain	79	70.5
Abdominal mass	7	6.25
Menorrhagia and dysmenorrhea	13	11.6
Incidental finding	5	4.6
Infertility	4	3.57
Mass descending per vagina	2	1.8
Post-menopausal bleeding	2	1.8

Table 2: Correlation between histopathology and USG findings.

Histopathology	No.	USG report
Corpus luteal cyst	7	Simple unilocular cyst
Paraovarian cyst	8	Simple unilocular cyst
Para tubal cyst	4	Simple unilocular cyst
Follicular cyst	3	Anechoic with thin septa
Endometriotic cyst	4	Simple unilocular cyst-2 Cyst with internal echoes-2
Mature cystic teratoma	11	Cysts with hyper echoic area or calcification
Serous cystadenoma	51	Anechoic cysts-44 With septa-3 With echogenic foci-4*
Mucinous cystadenoma	16	Multi septate anechoic cyst -14 Simple anechoic cyst-2
Brenner tumor	1	1ncidental
Hemorrhagic infarct	7	Anechoic cysts

*All were papillary serous cystadenomas

Table 3: Histopathology and side of tumour.

Histopathology	Right side	Left side	Bilateral
Corpus luteal cyst	3	4	0
Follicular cyst	3	0	0
Para ovarian cyst	5	3	0
Para tubal cyst	3	1	0
Serous cystadenoma	21	26	4
Mucinous cystadenoma	6	9	1
Dermoid cyst	9	2	0
Brenner tumor	0	1	0
Endometriotic cyst	3	1	0
Hemorrhagic infarct	7	0	0

Table 4: Age distribution.

Histopathology	Age in years						
	<19	20-29	30-39	40-49	50-59	60-69	>70
Serous cystadenoma	2	13	14	15	5	2	0
Mucinous cystadenoma	2	7	0	5	0	2	0
Mature cystic teratoma	0	6	3	2	0	0	0
Brenner tumor	0	0	0	1	0	0	0
Follicular cyst	0	2	1	0	0	0	0
Corpus luteal cyst	0	2	4	0	1	0	0
Para ovarian cyst	1	1	5	0	1	0	0
Paratubal cyst	0	2	1	0	0	0	1
Hemorrhagic infarct	1	3	2	1	0	0	0
Endometriotic cyst	0	0	3	1	0	0	0

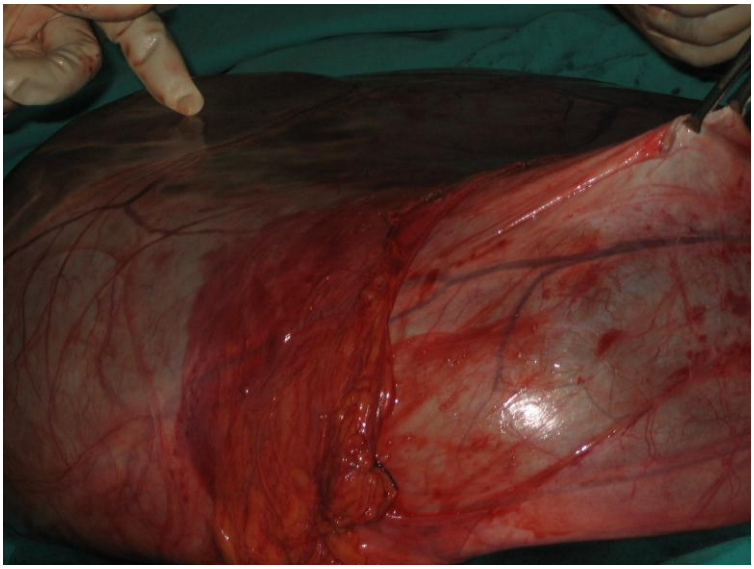

Figure 1: Large ovarian serous cystadenoma.

In pregnant patients, 3 cases were diagnosed incidentally during cesarean section, one during medical termination of pregnancy with sterilization and 1 case presented with acute abdominal pain. Two cases were post hysterectomy with functional cysts.

Forty five cases of serous cystadenoma, all cases of dermoid (10) and endometriotic cysts (4) were seen in the women >20 years and who haven't attained menopause.

There were 14 cases of torsion in the reproductive women, 6 in the adolescents (<20 years) and 2 were postmenopausal. Out of 22 torsions, only one was reported as torsion by ultrasound and others as anechoic cysts. In histopathology, 7 were reported as hemorrhagic infarct, 3 as para ovarian cyst, 7 as serous cystadenoma, 2 as mucinous cystadenoma, 2 as para tubal cyst and 1 as multiple follicular cyst. Two patients presented with hemoperitoneum due to rupture of corpus luteal cyst.

In the postmenopausal women, out of 11 adnexal tumors 6 were reported as serous cystadenoma, 1 as paraovarian cyst, 2 as mucinous cystadenoma, 1 as corpus luteal cyst, and 1 as paratubal cyst with torsion. In 6 patients the size of the tumor was >10cm.

All 6 patients in the adolescent age group presented with torsion, out of which 2 were serous cystadenoma, 2 mucinous cystadenoma, 1 paratubal cyst and 1 hemorrhagic infarct.

There were 5 cases of bilateralism, out of which 4 were serous cystadenomas and one mucinous cystadenoma.

On comparing histopathology with ultrasound diagnosis, all corpus luteal cysts and paraovarian cysts were reported as simple unilocular cyst. Out of 4 endometriotic cysts, 2 were reported as anechoic, 2 as cyst with internal echoes. All 11 mature cystic teratomas were diagnosed as dermoid cysts. Out of 51serous cyst adenomas, 44 were reported as anechoic simple cyst, 3 with septae and 4 with echogenic foci. All mucinous cystadenomas were reported as multi septate anechoic cysts.

DISCUSSION

In the present study, the occurrence of benign adnexal tumor was almost similar between age groups more than 40 years and less than 40 years and the commonest presenting complaint was abdominal pain. These findings are comparable to the study by Kayastha.[2]

Surface epithelial tumor was the commonest in our study. Serous cystadenoma was found in 59.49% of cases and mucinous in 20%. Surface epithelial tumors are common and that to serous cystadenoma are more common than mucinous cystadenoma in Indian studies.[3,4] The prevalence of serous epithelial tumors were more in our study 82.27% compared to others 65.6%.[3] The vast majority of benign serous tumors may not be bona fide epithelial neoplasms, but rather, may represent cystically dilated glandular inclusions (cystadenomas) and fibromas with epithelial inclusions (cystadenofibromas).[5] In a study where clonality was evaluated the vast majority of serous cystadenoma was found to be polyclonal and thus supports this hypothesis.[6]

The occurrence of serous and mucinous was equal on both sides as noted by Vercilleni.[7] Bilateralism is not a common occurrence[8] and 7.84% of serous tumors were bilateral in our study.

In the study done by Lee et al, torsion was more common on the right ovary and 50% were gangrenous at laparotomy and most of the tumors were benign cystic teratomas.[9] In our study, torsion was more common on the right side and 36.8% were gangrenous. In our study, 11 cases of torsion were <10 cm and 11 cases were >15cm. The maximum size of the tumor which underwent complete torsion was 32 cm in size. The highest rates of torsion are found in adnexal masses from 6-10 cm.[10]

In our study all cases of dermoid cysts and 50% of endometriotic cysts were diagnosed by ultrasound. Kroon et al found a higher degree of correlation between ultrasound and histopathology in these tumors.[11] Except mucinous cystadenoma which was multiseptate almost all adnexal tumors were reported as unilocular anechoic cyst.[12,13]

In our study, the cysts ranged from 5 cm to 36 cm, mostly unilocular and echo-free in the postmenopausal women and were reported as either functional cysts or benign tumors. Ekerhovd et al reported that the risk of malignancy associated with unilocular echo-free cysts was not higher than 1.6%.[14]

The limitation of the study is that this is an institution based and retrospective study, so the result obtained may or may not reflect the actual histological pattern and age distribution of ovarian tumors in Indian women.

CONCLUSION

Serous cystadenoma is the most common ovarian tumor. Abdominal pain was the commonest symptom. Serous and mucinous tumors occurred equally on both sides and bilaterality was seen in serous tumors. The accuracy of preoperative ultrasound was higher in dermoid cysts followed by endometriotic cysts. Multiseptate cysts were found to be mucinous cysts.

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DOI: 10.5455/2320-1770.ijrcog000812
Cite this article as: Manivasakan J, Arounassalame B. A study of benign adnexal masses. Int J Reprod Contracept Obstet Gynecol 2012;1:12-6.