ORIGINAL ARTICLE

Frequency of Different Histopathological Patterns of Benign Ovarian Tumors in Women with Different Age Groups

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ABSTRACT

Background: About 80% of benign ovarian tumors occur in older women between the age of 40 and 65 years. Benign tumor may be entirely asymptomatic and occasionally are unexpected findings on abdominal or pelvic examination or during surgery.

Study design: We designed a non-interventional and descriptive study to find out the frequency of different histological patterns of benign ovarian tumors. Study also tried to relate the age and parity with the histopathological type benign ovarian tumor.

Material and Methods: 25 consecutive ovarian tumor specimens were collected from Department of Histopathology, Sheikh Zayed Federal Postgraduate Medical Institute, Lahore. Duration of study was 3 months. The surgical specimens were fixed in 10% formalin solution. Multiple 3-5 mm sections were taken from the tumor with special emphasis on solid foci, area adjacent to ovarian surface and base of papillary formations. In addition sections were taken from the attached fallopian tube, ligaments and capsule of the tumurous ovary. In case of uterus, sections were also taken from the cervix, endometrium, myometrium, paracervix and parametrium.

Results: 40-48% of benign tumors were observed in the age range of 21-60 years. While in the age range of 61-80 years the percentage of cases was decreased i.e. 8%. It was observed that in both nulliparous and multigravida (para >2) the number of benign tumors were more as compared to women who were unmarried or having primary gravida. Most common form of benign tumor was surface epithelial tumors (n=17) and germ cells tumors (n=4). Among surface epithelial tumors, 15 were serous cystademomas with a percent of 88.2 and 04 were mucinous cystadenomas with a percent of 23.5. On the other hand germ cell tumors were 04 mature cystic teratomas with 16%.

Conclusion: The incidence of ovarian tumor is increasing gradually and there is need of awareness of disease in women. The incisional biopsy should be suggested where necessary for the histopathological typing of tumor. This is essential for early management and better prognosis.

Key words: Benign tumor, ovary, age and parity

INTRODUCTION

Benign tumors typically are surrounded by a fibrous capsule that inhibits their ability to behave in a malignant manner. In some cases, certain "benign" tumors may later give rise to malignant tumors, which result from additional genetic changes in a subpopulation of the tumor's neoplastic cells. Various benign ovarian tumors with solid and cystic components can mimic malignant ovarian tumors. Most enhancing solid components are the fibrous components of ovarian tumors[1].

About 80% of benign ovarian tumor occurs in older women between the age of 40 and 65 years. Benign tumor may be entirely asymptomatic and occasionally are unexpected findings on abdominal or pelvic examination or during surgery[2].

Most common surface epithelial ovarian tumors are benign including serous adenoma, mucinous

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cystadenoma may display papillary projections, although it does so less frequently (9% of cases) than malignant tumors[3].

Germ cells tumors are the second most frequent group representing 20 % to 30 % of ovarian tumors; occur often in women in their twenties. These tumors develop from germ cells and are divided into two categories: teratomas and non-teratomous tumors. Most of the germ cell tumors are benign and the most common are mature cystic teratomas. Mature cystic multiple tissue teratoma is the only benign germ cell tumor and it represents 95 % of germ cell tumors[4]. It occurs in young women, is unilateral in 90 % of cases[4,5].

The remaining 5 % of tumors include immature multiple tissue teratomas. Immature multiple tissue teratomas are rare malignant tumors in young women i.e. in their twenties[6] (Outwater 2001). They are fast growing, with frequent capsular rupture[4,6]. Dysgerminomas are solid multilobular tumors with

fibrovascular septa which may include calcifications and necrotic elements[4].

We designed a non-interventional and descriptive study to find out the frequency of different histological patterns of benign ovarian tumors. Study also tried to relate the age and parity with the histopathological type of benign ovarian tumor.

MATERIAL AND METHODS

Twenty five consecutive ovarian tumor specimens were collected from Department of Histopathology, Sheikh Zayed Federal Postgraduate Medical Institute, Lahore. Duration of study was 3 months. Study design was non-interventional and descriptive. Cases using cell markers were excluded from the study. The surgical specimens were fixed in 10% formalin solution. Multiple 3-5 mm sections were taken from the tumor with special emphasis on solid foci, area adjacent to ovarian surface and base of papillary formations. In addition sections were taken from the attached fallopian tube, ligaments and capsule of the tumorous ovary. In case of uterus, sections were also taken from the cervix, endometrium, myometrium, paracervix and parametrium.

Data analysis: Data analysis was carried out by SPSS 14. Frequency of benign tumors, parity has been presented as percentages.

Table 1: Distribution of cases on the basis of age, type and parity of ovarian tumors (n=25)

Age in years	=n
10-20	01(4%)
21-40	12(48%)
41-60	10(40%)
61-80	02(8%)
Parity	
Unmarried	03
Nulliparous	10
Primipara	02
Para >2	10

Table 2: Distribution of cases on the basis of histopathological type of benign ovarian tumors (n=25)

Histopathological types of benign ovarian tumors	=n
Surface epithelial tumors	**17(68%)**
Serous cystadenoma	15(88.2%)
Mucin cystadenoma	04(23.5%)
Germ cell tumors	**04(16%)**
Mature cystic teratomas	04(16%)

RESULTS

Distribution of cases on the basis of age, type and parity of ovarian tumors is tabulated (Table 1). Only 01 benign case (4%) was observed in age range of 10-20 years. In the age range of 21-40 years, 12 (48%) were benign. In the age range of 41-60 years, 10 (40%) were benign. While in the age range of 61-80 years the percentage of cases was decreased i.e. only two benign tumors with 8%.

A relationship of parity with tumor was also observed. It was that in both nulliparous and multigravida (para >2) the number of benign tumors were more as compared to women who were unmarried or having primary gravida.

Distribution of cases on the basis of histopathological type of benign tumors was tabulated (Table 2). It was observed that most common type of benign tumor was surface epithelial tumors (n=17) and germ cells tumors (n=4). Among surface epithelial tumors, 15 were serous cystadenomas with a percent of 88.2 and 04 were mucin cystadenomas with a percent of 23.5. On the other hand germ cell tumors were 04 mature cystic teratomas with a percent of 16.

DISCUSSION

Ovarian tumors account for a considerable proportion of clinically important tumors in females. About one third of ovarian tumors are encountered in the reproductive period age 80-85% are benign and occur between the age of 20 and 45 years[7].

In present study the incidence of ovarian tumour was(10 %). A study reported that the incidence of ovarian tumour was 16.7% among total gynaecological admissions[8]. However a study reported that the differential diagnosis between epithelial tumors or non-epithelial tumors is difficult because the presentation of all of these tumors is non-specific (half-solid, half-cystic with necrotic-hemorrhagic degeneration[9].

Present study observed that benign tumor (63.3 %) in women was common. Our study is in line with a study who observed that in majority of women (71.6%) having benign tumor[10]. We observed the highest percentages of benign tumor were in the age range of 21-60 years. A study found that the age range in which women develop tumor was 18 to 70 years. Their study observed that benign tumour occurred in all age group[10,11].

Our study also observed that benign tumors were more common in women with multigravids having higher percentages. It is less common in unmarried and primipara. A study reported that 11.6% were unmarried, 20.0% nulliparous, 7.4% were pregnant and 38.9% were of one to two parity[8].

Present study observed that the commonest benign tumor belong to benign surface epithelial tumors with a percent of 68. However, a study observed that the commonest surface epithelial

tumour was serous cyst adenoma (88.2%) while the commonest germ cell tumor was mature cystic teratoma i.e dermoid cyst (16%)[8]. Another study reported that epithelial tumors were commonest variety of ovarian tumors followed by germ cell tumors[10] (Swamy). A group of workers reported that the most common type of ovarian cyst was serous cystadenoma (40.2%) followed by mature cystic teratoma (15.7%)[12].

CONCLUSION

The incidence of ovarian tumor is increasing gradually and there is a need of awareness of disease in women. The incisional or excisional biopsy should be suggested where necessary for the histopathological typing of tumor. This is essential for early management and better prognosis of patients.

REFERENCES

1. Ahkim K, Park CM, Lee JH, Cho SM et al Benign Ovarian Tumors with Solid and Cystic Components That Mimic Malignancy.*AJR* May 2004 vol. 182 no. 5 1259-1265
2. Liu CM. Cancer of the ovary. N Engl J Med 2005 352:1268-9
3. Cotran R, Kumar V, Collins T. Robbins Pathologic Basis of Disease, 6th Edition. W.B. Saunders 2006
4. Jung SE, Lee JM, Rha SE, Byun JY, Jung JI, Hahn ST. CT and MR imaging of ovarian tumors with emphasis on differential diagnosis. Radiographics 2002;22:1305-25.
5. Chang WC, Meux MD, Yeh BM, Qayyum A, Joe BN, Chen LM et al. CT and MRI of adnexal masses in patients with primary nonovarian malignancy. AJR Am J Roentgenol 2006;186:1039-45
6. Outwater EK, Siegelman ES, Hunt JL. Ovarian teratomas: tumor types and imaging characteristics. Radiographics 2001;21:475-90
7. Timoth JB, Crayford S. Benign ovarian cyst and ovarian cancer; a cohort study with implication for screening. Lancet 2000 355;170-
8. Bouic-Pagès E, Perrochia H, Mérigeaud S, Giacalone PY, Taourel P. [MR Imaging of primary ovarian tumors with pathologic correlation]. J Radiol. 2009 Jul-Aug;90(7-8 Pt 1):787-802.
9. Kayasatha Kayastha S. Study of ovarian tumours in Nepal Medical College Teaching Hospital. Nepal Med Coll J. 2009 Sep;11(3):200-2.
10. Swamy GG, Satyanarayana N. Clinicopathological analysis of ovarian tumors--a study on five years samples. Nepal Med Coll J. 2010 Dec;12(4):221-3.
11. Malik IA. A Prospective Study of Clinico-pathological Features of Epithelial Ovarian Cancer in Pakistan. JPMA 52:155;2002
12. Pudasaini S, Lakhey M, Hirachand S, Akhter J, Thapa B. A study of ovarian cyst in a tertiary hospital of Kathmandu valley. Nepal Med Coll J. 2011 Mar;13(1):39-41.