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Evaluation of benign ovarian tumours in a tertiary care centre

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Abstract

Objective: Present study was done to analyse the distribution of benign ovarian tumours in different age groups and to correlate their clinic-histopathological patterns.

Materials and Method: In present retrospective study histopathologically proven 63 cases of benign ovarian tumours were analysed. The tumours were classified according to WHO classification after thorough examination of slides and their distribution in different age groups was noted.

Results: Surface epithelial tumours were commonest (65.08%) followed by germ cell tumours (26.97%) and sex cord stromal tumours(7.95%). Maximum 34.93% ovarian tumours were found in 31-40 years age group. Most of the patients (33.34%) were asymptomatic and were diagnosed incidentally. Commonest tumour was serous cystadenoma (38.09%) followed by mucinous cystadenoma (25.389%) and benign cystic teratoma (17.45%).

Conclusion: Ovarian tumours are common in forth decade. Most common histopathological presentation was surface epithelial tumours with preponderance of serous cystadenomas. Most of them remain asymptomatic, therefore clinicohistopathological diagnosis still remains gold standard which is helpful for early detection and proper management.

Keywords: Benign ovarian tumours, Histopathology, Surface epithelial tumours, Germ cell tumours, Sex cord stromal tumours

Introduction

The ovaries are female reproductive organs which are paired and located at both sides of the uterus, behind the broad ligaments.(1) Each ovary is covered by surface, coelomic or germinal epithelium.(2) All primary ovarian tumours tend to originate from one of these structures. Therefore, histogenesis of ovarian tumour includes a complex spectrum of neoplasm depending on the origin of cell i.e. arising from epithelial tissue, germ cell and connective tissue.(2) Interestingly, no other organ gives origin to a wide range of histological tumours as the ovaries.(3) It is the most fascinating tumour in terms of its histogenesis, clinical behavior and malignant potentiality. As ovary is an intra-abdominal organ; irrespective of its origin, their tumours are generally difficult to detect until they are of advanced stage or large in size. This is primarily due to either they are asymptomatic or symptoms are vague.(4) These can occur in all age groups, however their type usually varies with age. Benign cystic tumours of the ovaries are the fourth most common gynecological causes of hospital admissions.(4) Worldwide statistics show that about 80-85% of ovarian tumours are benign, out of which 55-65% occurs mostly between 20-45 years age.(2) There is likelihood of increase in the incidence of ovarian tumours in the developing countries because of decreasing fertility rate and increasing use of ovulation induction drugs.(5) They pose greatest challenge to gynecological oncologist because it is very difficult to diagnose in its early stage due to its nonspecific symptoms and even asymptomatic nature in many cases. Diverse histopathologies are common in ovarian lesions. Determination of these patterns is important for diagnosis, management and prognosis.(6) The aim of present study was to assess their clinical manifestation and histological types at our tertiary care centre.

Aim and Objectives

Present study was done to analyse the frequency of benign ovarian tumours, their distribution in different age groups and clinico-histological correlation.

Material and Methods

Present analysis was done in Kamineni Institute of Medical Sciences, Narketpally, Nalgonda, Telangana state, India after taking approval from ethical committee, from July 2013 to August 2015. It was a retrospective observational study conducted on 63 women who attended gynaecology outpatients with complaint of abdominal pain, a lump or menstrual irregularities diagnosed as benign ovarian tumours.

Inclusion Criteria

1. All age group
2. Histopathologically proven cases of benign ovarian neoplasms.

Exclusion Criteria:

1. Non neoplastic lesions of ovary.
2. Malignant ovarian tumours.
3. Non-gynecologic etiology of Abdomino-pelvic mass

During the study period, we collected original slides and reports of histopathologically proven cases of benign ovarian neoplasms. We retrospectively analyzed medical records of all patients. A detail gynecological history including age, onset, duration and distribution

of pain, menstrual history, accompanying symptoms were analysed.

From the medical records Abdominal examination findings in terms of (distension of abdomen, tenderness, guarding, rigidity, rebound tenderness. mass in terms of size, consistency, surface, margins, mobility and extent of lower pole) were noted and analysed and from pelvic examination findings like cervical tenderness, any adnexal mass, status of uterus by its size, position, mobility, surface contour, consistency etc. were noted and analysed. All hematological, biochemical, hormonal, serological profile and radiological investigations like ultrasonography, CT scan and MRI were noted and analysed. Modality of treatment (laproscopy, laprotomy) was noted. Histopathological reports were collected and analysed. Ovarian tumours were classified according to the World Health Organization classification of tumours.[7]

The patients were divided into eight age groups, with a difference of 10 years in each group. They were analyzed in terms of age of presentation, clinical symptoms, size of mass and histopathology reports.

Statistical analysis was done by tabulating in Microsoft Excel sheet and Chi-square test were used to describe the study sample with SPSS version 16.

Results

Total numbers of benign ovarian tumours studied during the period were 63. The age range of the patients was from 7 years to 80 years. Maximum (34.93%) ovarian tumors were found in 31-40 years age group. (Table 1).

Table 1: Distribution of Benign ovarian tumours in various Age groups

S. No	Age Range (in Years)	Number of patients (N=63)	Percentage (%)
1	1-10	1	1.59%
2	11-20	7	11.11%
3	21-30	15	23.80%
4	31-40	22	34.93%
5	41-50	10	15.86%
6	51-60	4	6.35%
7	61-70	2	3.17%
8	71-80	2	3.17%

Most of the (33.34%) patients were asymptomatic and were incidentally diagnosed. The commonest presenting symptom was pain abdomen (26.97%), which was often of the dull or dragging type, followed by mass abdomen (22.23%).(Table 2)

Table 2: Clinical presentation of patients with benign ovarian tumours

S. No	Clinical presentation	Number of patients (N=63)	Percentage (%)
1	Asymptomatic	21	33.34%
2	Pain in abdomen	17	26.97%
3	Lump in abdomen	14	22.23%
4	Menstrual abnormality	1	1.59%
5	GIT Disturbance	7	11.11%
6	Urinary complaints	3	4.76%

Gross examination of all benign ovarian tumors showed mainly cystic nature with occasional small papillary projections (Table 3). Largest tmour seen was of size 22X16X10 cm which was mucinous cystadenoma (Fig. 1 & 2).

Table 3: Size wise distribution of ovarian tumours

S. No	Size of tumours (in centimeter)	Number of patients (N=63)	Percentage (%)
1	<5	11	17.45%
2	5-15	45	71.44%
3	>15	7	11.11%

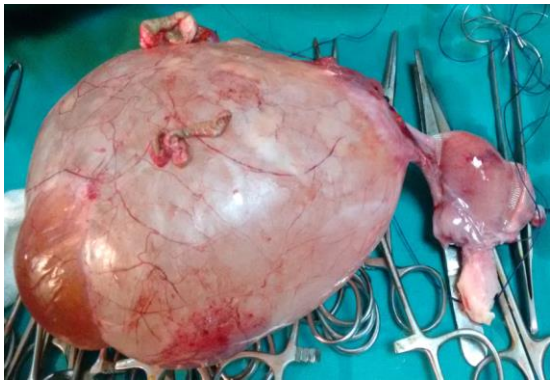

Fig. 1: Gross specimen of Mucinous cystadenoma

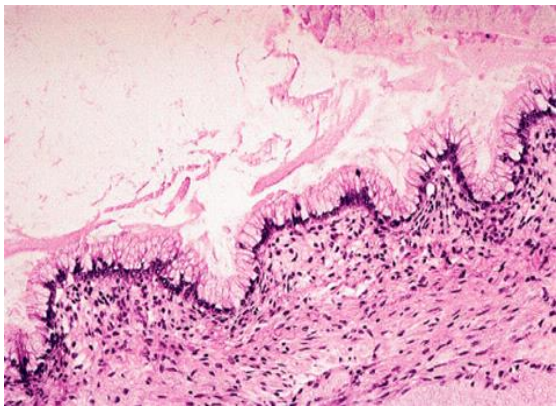

Fig. 2: Microphotograph of Mucinous cystadenoma

Histolopathological patterns observed in the study were epithelial ovarian tumours (65.08%) followed by

germ cell tumours (26.97%) and sex cord stromal tumours (7.95%).(Table 4)

Table 4: Distribution of Histological group of benign ovarian tumours

S. No	Histological Nature of tumours	Number of patients (N=63)	Percentage (%)
1	Surface Epithelial Tumours	41	65.08%
2	Germ cell Tumours	17	26.97%
3	Sex cord stromal Tumours	5	7.95%

Among benign ovarian tumours; commonest was serous cystadenoma (38.09%) (Fig. 3& 4) followed by mucinous cystadenoma (25.39%)(Fig. 1 & 2) and benign cystic teratoma (17.45%). (Table 5).

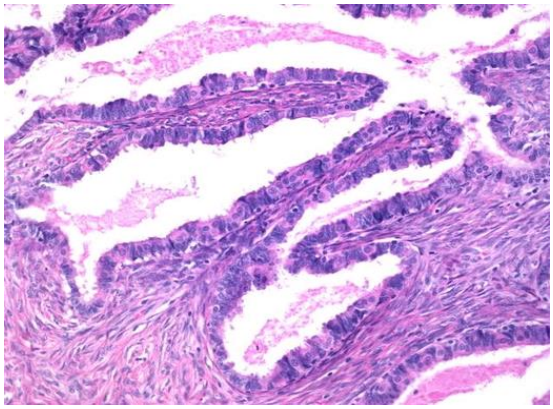

Fig. 3: Microphotograph of Serous papillary cystadenoma

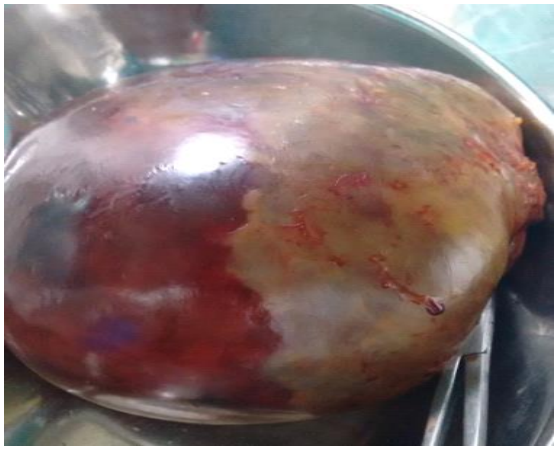

Fig. 4: Gross specimen of Serous papillary cystadenoma

Table 5: Distribution of individual benign ovarian tumours in different age groups

S. No	Nature of tumours	Types of Benign ovarian tumours	Age Range (in Years)								Total No & (%)
			1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	
1	Surface Epithelial Tumours	Serous papillary cystadenoma	-	2	5	11	4	1	1	-	24 (38.09%)
		Mucinous cystadenoma	-	1	4	7	2	1	-	1	16 (25.39%)
		Brenner	-	-	-	-	1	-	-	-	1 (1.59%)
2	Germ cell Tumours	Benign cystic teratoma	1	2	3	3	1	1	-	-	11 (17.45%)
		Dermoid cyst	-	2	3	1	-	-	-	-	6 (9.55%)
3	Sex cord stromal Tumours	Fibroma	-	-	-	-	2		-	1	3 (4.76%)
		Thecoma	-	-	-	-	-	1	1		2 (3.17%)

The youngest patient in present series was a 7 year old girl with a benign cystic teratoma (Fig. 5). Our oldest patient was a 80 year old lady, diagnosed with a benign fibroma. (Fig. 6)

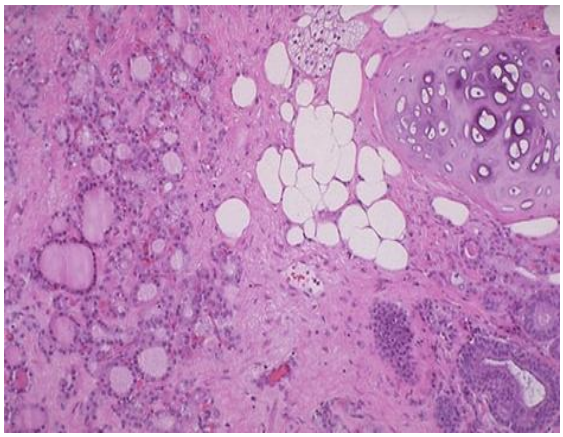

Fig. 5: Microphotograph of Benign cystic teratoma

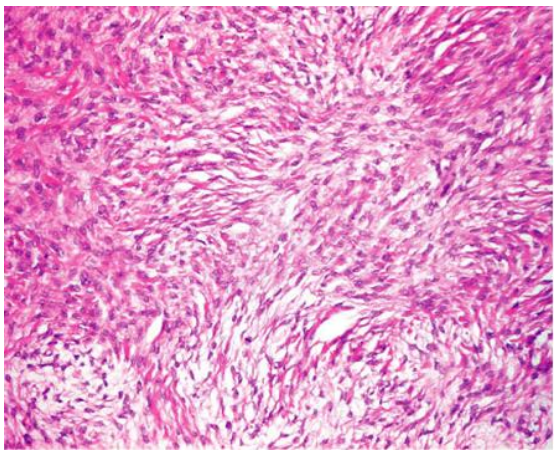

Fig. 6: Microphotograph of Fibroma

Benign serous and mucinous tumors were seen in almost all the age group between 2nd to 7th decade.

Germ cell tumors were most frequently seen in 21-40 year age. All sex cord stromal tumours were seen above 40 years of age.

In first 2 decade, out of 8 patients with benign tumors, 3 had surface epithelial tumors and 5 had germ cell tumors. In 3rd and 4th decade out of 37 patients; 27 (72.97%) had surface epithelial tumors and was most common tumors occurring above 21 years. In the last four decades out of 18 patients, 11 had surface epithelial tumors, 5 sex cord stromal tumours and two cases had germ cell tumors.(Table 5)

Discussion

The ovary is a complex structure with its different components like germ cells, follicular cells and mesenchymal tissue each having different capability to form various tumours. It is generally impossible to diagnose the nature of neoplasm preoperatively only by clinical examination. Hence, one has to depend on histopathological findings for classification and further management.

In present study the incidence of benign tumours was 70.8%, which was closer to the observations made by several authors Gupta et al[6] (72.9%), Soumini G et al[8] (72.94%), Abdullah LS[9] (72.8%) and G.G. Swamy et al[10] (71.6%).

Ovarian tumour may occur at any age including infancy and childhood. A majority of the tumours diagnosed in present study occurred in women's reproductive age group with peak incidence between 31-40 years. This is similar with findings of studies by Pilli et al,[11] Ameena et al,[12] Jha et al,[13] Shah et al,[14] Mondal et al[15] and Couto F et al.[16]

In present study presentation of the ovarian tumour was variable. They were either asymptomatic or diagnosed incidentally on ultrasound whereas others were presented with acute abdominal pain. Our hospital is a tertiary care hospital situated in a rural area, most of our patients have low education level and low socioeconomic status, so in many cases worst part was late presentation.

In the present study, most common presentation was pain abdomen (26.97%), followed by mass abdomen (22.23%) and menstrual irregularity in (1.59%) cases. These findings are in accordance to other studies.[17-22]

In present study 71.44% of ovarian tumour were medium sized (5-15cms), 17.45% were small sized followed by 11.11% were large sized. Similar result were found by Samina et al.[25] In the present study the largest tumour (mucinous cystadenoma) measured was 22x16X10 cm in size (Fig. 4).

In present study maximum 41(65.08%) cases were of surface epithelial tumours, these results were similar to studies by Gupta et al,[6] (70.9%) Pilli et al,[11] Mondal et al[15] and Sharma I et al.[23] Germ cell tumours accounted for (26.97%) of total ovarian tumours which is comparable with G G swamy et al[10] and (21.2%) Pilli et al.[11] Also, (7.95%) sex cord stromal tumour were encountered which is comparable with Pilli et al,[11] Mondal et al[15] and Uzma et al.[17]

In present study, among the benign epithelial tumours studied, serous tumour was more common. Similar results were reported in literature and various studies.[6, 9,12,13,19,20,22]

In present study, fibroma-thecomas were most common sex cord-stromal tumours which is in agreement with previous study.[24] Generally they are seen in the middle age (mean age 45years).

Conclusion

From present study it is concluded that, benign ovarian tumours are common in age group of 31 to 40 years. Most common histopathological presentation was surface epithelial tumours with preponderance of serous cystadenomas. They are called as "silent killer" as size

of the tumor is not related to its nature and most of them remain asymptomatic or presents with nonspecific symptoms until advanced stage. In the era of immunohistochemistry and molecular pathology; in rural settings these clinicohistopathological diagnosis still remains gold standard which is helpful for early detection and proper management.

Limitation

This is hospital based study done in small number of patients, therefore, may not represent all Indian women, so, it needs a large multi-centric study. This will help us in the development of better screening and detection methods for early diagnosis.

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