

HISTOPATHOLOGICAL PATTERN OF BENIGN OVARIAN TUMOURS IN A TERTIARY CARE HOSPITAL IN RURAL TELANGANA: 5 YEAR RETROSPECTIVE STUDY.

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Conflicts of Interest: Nil

ABSTRACT:

Background: Benign Ovarian Tumors are most common tumors of female genital tract based on the data available from the international and national studies; however the study is done to determine the frequencies, types and subtypes, age distribution and clinical presentation of Benign Ovarian Tumors in a tertiary care hospital in Telangana.

Materials and Methods: Retrospective study comprised of 344 cases of primary benign ovarian tumors diagnosed in the Department of Pathology, RIMS, Adilabad during the periods of January 2013 – December 2018. Records were retrieved from the departmental registers and were analyzed.

Results: Total 344 cases were studied in this duration of study period. Out of 344 cases majority were benign tumors (85.1%). The majority tumor presented in the age group of 20 – 45 years and most common clinical presentation was mass per abdomen and pain.

Conclusion: Most of the ovarian tumors in this study were surface epithelial tumors followed by germ cell tumors. Clinical features are variable. Further research on the social and environmental factors is needed to work on the etiological aspect of surface epithelial tumors.

Keywords: Ovary Tumors; Benign; Surface Epithelial Tumors.

Introduction

The ovaries are covered by a single layer of modified mesothelium called as surface, coelomic or germinal epithelium and most pathologically important inner structures are the germ cells, the sex cords, and the specialized ovarian stroma. Most of the primary ovarian tumors tend to originate from the prior mentioned four structures (surface epithelial cells, germ cells, sex cords, and specialized ovarian stroma [1,2]. Remarkably, ovaries are the derivation site for the histologically diverse group of tumors [3,4].

Tumors of the ovary are common forms of neoplasia in women [5]. The occurrence of ovarian tumors is seen in all age groups from

intrauterine to postmenopausal age [6]. The data from the international studies show that 80% of ovarian tumors are benign and most commonly seen in the 20 to 45 years of age group. The purpose of the study is to determine the frequencies, type, subtype and age group of benign ovarian tumors and no study has been done exclusively on the histopathological pattern of benign ovarian tumors in rural Telangana.

Materials and Methods:

The materials for the present study is based on the histopathologically proven cases of benign ovarian tumors seen at the Department of Pathology, RIMS, Adilabad. The clinical and diagnostic details are retrieved from the registries

of the corresponding years (2013 January – 2018 December). The histomorphological features are studied and tumors are classified according to the World Health Organization (WHO) 2014 classification of Ovarian Tumors.

All the specimens were received from the oophorectomy/salpingoophorectomy (unilateral/bilateral) / panhysterectomy surgical procedures in the adequate formalin fixed state. The gross findings were noted, and relevant bits were taken for tissue processing. The tissues were routinely processed with paraffin embedding, followed by microsection and stained by hematoxylin and eosin. Any required further details of the cases were collected from MRD, RIMS, Adilabad.

Results:

The total number of specimen received from January 2013 to December 2018 was 3454, in that 1443 belongs to the gynecological specimens. Out of 1443 specimens, 344 were histopathologically diagnosed as ovarian tumors. Of these 344 ovarian tumors, 85.1% (293) were benign. Benign ovarian tumors were seen between the ages of 21 to 72 years, and the majority occurred (56.3%) in between 21 – 30 years of age group, then followed by 31 – 40 years (22.2%). Frequencies for other age ranges are shown in Table 1.

Table 1: Age distribution of Benign Ovarian Tumors

S. No	Age Group	No. of Tumors	% of Tumors
1	21 – 30	165	56.3
2	31 – 40	65	22.2
3	41 – 50	30	10.2
4	51 – 60	13	4.4
5	61 – 70	12	4.1
6	71 – 80	8	2.7
Total		293	100

The most common clinical presentation was mass p/a and pain, and the majority of the tumours presented as unilateral (Refer to Table 2 & 3).

Table 2: Clinical presentation of Benign Ovarian Tumors

S. No	Clinical Presentation	No. of Tumors	% of Tumors
1	Mass p/a	179	61.1
2	Abdominal Pain	77	26.3
3	Menstrual Disturbances	24	8.2
4	Ascites	13	4.4
Total		293	100

Table 3: Uni/Bilateral presentation of Benign Ovarian Tumors

S. No	Side	No. of Tumors	% of Tumors
1	Unilateral	279	95.2
2	Bilateral	14	4.8
Total		293	100

The most common histopathological group was the benign surface epithelial tumors which constituted 64.5% (189) of all the benign ovarian tumors, followed by 33.1% (97) cases of germ cell tumor, 2.4% (7) cases of sex cord-stromal tumors (Refer Table 4).

Table 4: Histopathological groups of Benign Ovarian Tumors

S. No	Histopathological Groups	No. of Tumors	% of Tumors
1	Surface Epithelial Tumors	189	64.5
2	Germ Cell Tumors	97	33.1
3	Sex-cord Stromal Tumors	7	2.4
Total		293	100

In the 189, benign surface epithelial tumors, the most common subtype noted was Serous Cyst Adenoma. Among the germ cell tumors, benign cystic teratoma was the most common histologic subtype and occurred mostly in the 21- 30 years age group. The ovarian fibroma is the most common subtype of sex cord-stromal tumors observed in this study. The details of subtypes of surface epithelial, germ cell and sex cord stromal tumors and their relative frequencies are listed in Table 5.

Table 5: Histopathological subtypes of Benign Ovarian Tumors and their frequencies

S. No	Histopathological Groups	Subtypes	Frequency	% of Tumors
1	Surface Epithelial Tumors	Serous cystadenoma	129	44.0
		Mucinous cystadenoma	49	16.7
		Brenner	7	2.4
		Cyst adenofibroma	4	1.4
2	Germ cell Tumor	Mature Cystic Teratoma	97	33.1
3	Sex-cord Stromal Tumors	Fibroma	7	2.4
Total			293	100

Discussion:

The ovarian neoplasm is classified into benign, borderline and malignant and its type is based on the four major tissue structures; 1. Surface epithelium, 2. Germ cell, 3. Sex-cords, and 4. Stromal components. In this study, the most common clinical presentation of benign ovarian tumor is mass per abdomen and pain, and the majority of them presented as unilateral lesions. The majority of the benign ovarian tumors occurred in the third and fourth decade of life. These clinical presentation and age distribution conforms with the previous studies[7].

In this study, the benign ovarian tumors constituted 85.1%. This finding is conformity with the other international and national studies such as in Cameroun (82.04%)[8], Papua (75%)[9], Manipur (74.32%)[10], Belgaum (75.2%)[11] and Bagalkot (84.44%). These show that benign ovarian tumors are more common than their malignant counterpart.

The most common histological type in this study is Benign Surface Epithelial Tumors (64.5%), followed by the Benign Germ Cell Tumors (33.1%) and Benign Sex-cord Stromal Tumors (2.4%), which are in concordance with the previous observations by researchers in various centers in India. The studies from African Countries shows Benign Germ Cell Tumors are more common form of benign ovarian tumors and these observations support that Germ Cell Tumors is more common in African women[12,13 & 14]. The international studies showed there is an existence of definite racial predisposition to the development of Germ Cell Tumors which is known to occur more frequently in the oriental and negro populations. It has been suggested that this higher incidence of Germ Cell Tumor in Africans compared to the European, North American and Indian Women is perhaps only a reflection of the comparatively lower incidence of Surface Epithelial Tumors [15,16 & 17]. It shows that there also seen to be a higher

incidence of benign Surface Epithelial Tumors in India compared to African countries due to the relatively high incidence of Germ Cell Tumors there.

More than one cell type is often seen if the secondary cell type involves less than 10% of the tumor it is classified accordingly to the predominant cell type, while if it is more than 10%, it is classified as mixed epithelial tumors. In the present study, there are no histological features suggestive of benign mixed ovarian tumors, and it is also rare in other studies. The histological typewise distribution of benign ovarian tumor in this study is in concordance with the Selvi et al.[18], and Prasanthi C et al. Ultimately, it showed that Benign Surface Epithelial Tumors are very common among Indian Women.

Conclusion:

Benign Ovarian Tumors are more common than malignant ovarian tumors in the present study, and Benign Surface Epithelial Tumors are the most common type of benign ovarian tumors followed by Benign Germ Cell Tumors as like of western countries except the African Nations. The surface epithelial tumors are predominantly diseases of the industrialized western nations, and serous tumors are more common[19], and all these show that the higher incidence of surface epithelial tumors in industrialized West and Caucasians may be related to dietary, genetic and environmental factors. Further etiological based exploration is needed in Indian population to identify the social, environmental and genetic factors associated in the development of higher incidence of Surface Epithelial Tumors in the Indian Women.

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