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Ovarian Surface Epithelial Tumor Incidence in Tertiary Care Hospital in Andhra Pradesh

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Abstract:
Introduction: *Worldwide, ovarian cancer is the sixth most common cancer in women and the seventh most common cause of cancer death. There are about 204,000 new cases and 125,000 deaths annually [1]. In most Western countries, ovarian carcinoma is the fifth most common malignancy and ranks fourth in cancer mortality. MATERIAL & METHODS; Statistical incidence of ovarian tumors from 2011 to 2016 was taken from patients presenting to tertiary care hospital Guntur. In cases where there is omental biopsy study, those cases are included in our study. RESULTS: During the study period 244 cases were identified. Benign surface epithelial tumors were 150, Borderline surface epithelial tumors were 6 and Malignant surface epithelial tumors were 88 Conclusion; Higher incidence of ovarian surface epithelial tumors seen in both developing and also in developed countries. In ovarian tumors 5 year survival rate is around 30%.This is due to late diagnosis. Early screening is necessary in the developing countries to improve survival rate.*

Keywords: *Surface epithelial tumor, Brenner, Mucinous, Serous.*

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I. Introduction

Worldwide, ovarian cancer is the sixth most common cancer in women and the seventh most common cause of cancer death. There are about 204,000 new cases and 125,000 deaths annually [1]. In most Western countries, ovarian carcinoma is the fifth most common malignancy and ranks fourth in cancer mortality. In the Western hemisphere, it accounts for 4% of cancer in women and is the most frequent cause of death due to gynecological cancer. In US women, ovarian cancer ranks ninth in incidence and fifth in mortality, and accounts for 3% of cancers diagnosed and 5% of cancer deaths. It is estimated that in the United States in 2010, there were 21,880 new ovarian cancer cases and 13,850 deaths. In India, during the period 2004-2005, proportion of ovarian cancer varied from 1.7% to 8.7% of all female cancers in various population based registries of Indian Council of Medical Research. The proportion of this cancer was 6.0%-7.7% of all cancers among females in Gujarat. The Age Specific Incidence Rate (ASIR) for ovarian cancer revealed that the disease increases from 35 years of age and reaches a peak between the ages 55-64 [2] .Late presentation and ineffective screening methods are impediments in its early detection. The screening tests in the form of estimation of CA-125 and transvaginal sonography are non-specific. Therefore, the diagnosis is made in late stage when cure rates are low and with increased morbidity due to limited effective treatment options. Five-year survival rates range from 30-50% for all stages of disease. Standard treatment protocol for ovarian cancer consists of cyto-reduction followed by adjuvant chemotherapy. But due to detection in late stages of disease the recurrence is common and eventually death follows. With increasing life expectancy, there is increase in incidence of ovarian cancer making it a public health issue. Therefore, an understanding of epidemiologic and genetic factors of ovarian cancer is important information for public health and health care planning for prevention, screening, early diagnosis and control of disease. Present study is to present the characteristics of epithelial ovarian cancer (EOC) in patients presenting to tertiary care hospital Guntur.

II. Material & Methods

Statistical incidence of ovarian tumors from 2011 to 2016 was taken from patients presenting to tertiary care hospital Guntur. In cases where there is omental biopsy study, those cases are included in our study. For some cases histochemistry study with PAS, Vangieson, Reticulin and Alcian blue were done [3,4,5,6]. During the study period 244 cases identified and categorized according to classification

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III. Results

During the study period 244 cases were identified. Benign surface epithelial tumors were 150, Borderline surface epithelial tumors were 6 and Malignant surface epithelial tumors were 88(fig-I &fig-IV).Higher incidence of Benign Serous Cyst adenomas seen at 21 to 30 years of age, Serous Carcinomas were at 31 to 50 years and Mucinous Cystadenoma at 31 to 40 years observed (fig- II,fig-III,fig-IV,fig-V and fig-VI). Surface Epithelial Benign Tumors were more at 21 to 40 years and Surface epithelial malignant tumors were maximum after 31 years of age [7,8,9].

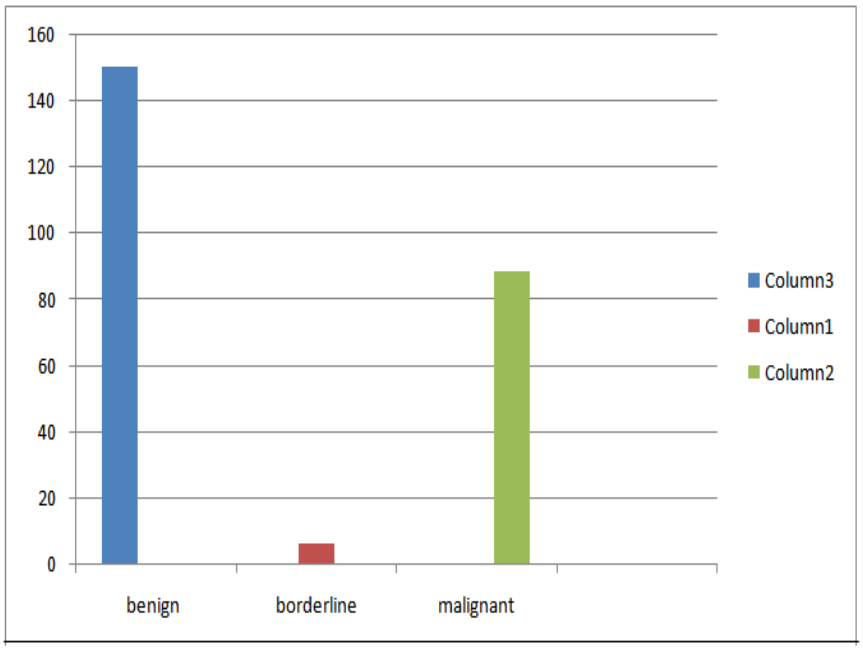
Fig ;– I Incidence And Percentage Of Ovarian Tumours Of All Types

		No. of Cases	Percentage
a.	Benign serous cystadenomas	52	17.3%
b.	Serous cystadeno fibromas	8	2.7%
c.	Serous borderline tumors	4	1.3%
d.	Serous Carcinomas	72	24%
e.	Mucinous cystadenomas	88	29.3%
f.	Mucinous borderline tumors	2	0.7%
g.	Mucinous adeno Carcinomas	4	1.3%
h.	Endometrioid carcinomas	6	2%
i.	Clear cell carcinomas	2	0.7%
j.	Brenner tumors – benign	2	0.7%
k.	Brenner tumors – malignant	2	0.7%
l.	Undifferentiated carcinomas	2	0.7%
Total		**244**	**81.3%**

Fig; - II Percentage Of Individual Surface Epithelial Tumors Among Same Tumors

		No. of Cases	Percentage
1.	Benign serous cystadenomas	52	21.3%
2.	Serous cystadeno fibromas	8	3.3%
3.	Serous border line tumors	4	1.6%
4.	Serous carcinomas	72	29.5%
5.	Mucinous cystadenomas	88	36.1%
6.	Mucinous borderline tumors	2	0.8%
7.	Mucinous adeno carcinomas	4	1.6%
8.	Endometrioid carcinomas	6	2.5%
9.	Clear cell carcinomas	2	0.8%
10.	Brenner tumors – benign	2	0.8%
11.	Brenner tumors –malignant	2	0.8%
12.	Undifferentiated carcinomas	2	0.8%
	Total	**244**	

FIG;-III Proportionate Of Benign, Borderline And Malignant Surface Epithelial Tumors



Fig; IV Proportionate Of Benign, Borderline And Malignant Surface Epithelial Tumors

		No. of Cases	**% among surface epithelial tumors**	**% among all ovarian tumors**
1.	Benign surface epithelial tumors	150	61.5%	50%
2.	Borderline surface epithelial tumors	6	2.5%	2%
3.	Malignant surface epithelial tumors	88	36%	29.3%

Fig ; - V Age Incidence of Surface Epithelial Tumours

Surface Epithelial Tumours	**11-20**	**21-30**	**31-40**	**41-50**	**51-60**	**61-70**	**71-80**	**Total**
Benign Serous Cystadenomas	2	18	8	12	8	2	2	52
Serous Cystadeno Fibroma	2	6	-	-	-	-	-	8
Serous Border Line Tumors		2	2	-	-	-	-	4
Serous Carcinomas		2	30	26	10	4	-	72
Mucinous Cystadenoma	8	30	24	14	10	2	-	88
Mucinous Borderline	-	-	-	2	-	-	-	2
Mucinous Cystadenocarcinoma	-	-	4	-	-	-	-	4
Endometrioid carcinoma	-	-	2	4	-	-	-	6
Clear Cell Carcinoma	-	-	2	-	-	-	-	2
Benign Brenner	-	-	2	-	-	-	-	2
Malignant Brenner	-	-	-	-	2	-	-	2
Undifferentiated Carcinomas	-	-	-	-	2	-	-	2
Total	**12**	**58**	**74**	**58**	**32**	**8**	**2**	**244**

Fig;– VI Age Incidence Of Benign And Malignantovarian Tumours

Type of Tumour	**11-20**	**21-30**	**31-40**	**41-50**	**51-60**	**61-70**	**71-80**	**Total**
Surface Epithelial Benign Tumors	12	54	34	26	18	4	2	150
Surface epithelial borderline tumors	2	2	2	-	-	-	-	6
Surface epithelial malignant tumors		2	38	30	14	4	-	88

IV. Discussion

About 2/3 of ovarian tumors are seen in the reproductive age group and the commonest age group is between the ages of 20 and 65 years. Less than 2% are found in children. 80-85% of them are benign. The malignant tumors are more common in older women between 40 and 60 years [10].Common epithelial tumors of the ovary constitute about 2/3 of all primary ovarian neoplasms and 90% of all malignant ovarian tumors [11, 12]. The source of these neoplasms is the surface epithelium which is derived from the coelomic epithelium mullerian ducts are derived from coelomic epithelium which later form the embryo with fallopian tubes, uterine body, cervix and upper part of the vagina with large variety of epithelia. The presence of different kinds of epithelium in these tumors can be explained satisfactorily[13,14,15,16].It is necessary to recognize a spectrum of aggressiveness that is divided into benign, borderline and malignant. Benign tumors are lined by single layer of columnar epithelial cells, papillary projections supported by fibro-vascular core. Malignant tumors show anaplastic changes in the epithelial cells with loss of polarity of nuclei and epithelium of several layers thick. Border line tumors are identified by the absence of invasion in an other wise highly proliferative neoplasm. Though their behavior is unpredictable, they have better prognosis than the malignant counterpart. Various tumor associated antigens may circulate in women with borderline and malignant tumors of common epithelial type. CA-125 antigen is commonly associated with mucinous tumors [17, 18].

4.1 Serous Cystadenomas are common tumors of the ovary comprising of 20% of all benign neoplasms. Their incidence in the present study was 17.3% of all benign neoplasms and 15.3% were bilateral against 7-12% reported in other series. The peak incidence was in 31-40 years age group.

4.2 Serous Cystadenofibromas are fairly common tumors and considered as more variants of serous cystadenomas. The mean age of occurrence was found to be 21-30 years. Proliferating cystodenofibroma was described by Kao and Norris with some degree of atypia and increased mitotic activity but less than low malignant potential tumors. Eight cases have been seen in the present study.

4.3 Peritoneal Serous Borderline Tumors (PSBT): Lesions resembling benign serous epithelium to serous carcinoma may involve the peritoneal surfaces with minimal or no involvement of ovary. According to Fletcher

peritoneal and omental tumor implants are found in 15-30% of women with serous borderline tumors. **Serous 4.4 Carcinomas of low malignant potential** refers to the group of neoplasms which show stratification of epithelial lining, presence of papillary projections, nuclear atypia, mitotic activity and absence of stromal invasion. About 15% of all serous tumors are carcinomas of low malignant potential. **Serous Carcinomas** are most common malignant tumors comprising 29.5% of all common epithelial tumors and occurred most frequently between the ages of 40 and 60 years, in the present study, though slight higher figures have been reported in other series (Gompel) 35%Serous carcinomas are composed of papillae lined by stratified epithelial cells with cytological atypia and mitotic activity with stromal invasion by tumor cells. Early dissemination and rapid fatal evolution are the rule. Serous carcinomas spread by direct continuity to adjacent organs. Amylase and other epithelial antigens can be demonstrated by immunohistochemical methods.

4.5 Mucinous Cystadenomas

Comprised about 36% of all benign ovarian tumors and 2% of them were bilateral. The most commonly affected age group was 20-40- years. These tumors attain huge size and among the largest of all ovarian tumors. Cut section reveals smooth thin walled cystic cavities ranging from few millimeters to several centimeters in diameter. The mucoid material may be clear yellow and turbid. The immuno phenotype of Endocervical like borderline mucinous tumors (EBMT) differs from that of intestinal type borderline mucinous tumors (IBMT). Both types of borderline mucinous tumors stain for cytokeratin-7, but only IBMT shows positive staining for cytokeratin-20. Immunostains for CEA are often strongly and diffusely positive in IBMT. EBMT contain estrogen and progesterone receptors, which are absent in IBMT.

4.6 Mucinous Adenocarcinomas constituted 3.6% of all malignant primary ovarian neoplasm which occur in 31-40 years of age. Mucinous cystadeno carcinoma is characterised by the presence of a typical epithelium with stratification, enlarged hyperchromatic nuclei, prominent nucleoli, frequent mitosis and stromal invasion.

4.7 Endometrioid Carcinoma is the most frequent type of ovarian carcinoma comprising 20-30% of all malignant epithelial tumors of the ovary. In the present study they accounted for 6.8% of malignant epithelial tumors. In the present study endometrioid tumors comprise of 2% of all ovarian primary malignancies and 1/3 of them were bilateral. The mean age incidence was about 45 years.

4.8 Clear Cell Tumors: Clear cell carcinoma of low malignant potential has been described by Roth et al with no recurrences or metastasis. Clear cell carcinoma of ovary constitute about 5-11% in the literature with mean age of 54 years. Two case of clear cell carcinoma reported in the present study (0.7%) with a mean age of 38 years.

4.9 Brenner Tumors: Brenner tumors are uncommon but not rare. In 1932 Meyer advanced the Walthard cell nest theory. Ultrastructurally there is similarity between Walthard cell nests, urothelium and Brenner tumors. The present view is that they arise from surface epithelium of the ovary. Brenner tumors comprised 0.7% of all ovarian tumors mostly occurring in the patients over 40 years of age in the present study and it is unilateral.

4.10 Malignant Brenner Tumor is a rare tumor and two cases have been reported in the present study at an age of 55 years 3.5% of Brenner tumors are reported to be malignant.

4.11Undifferentiated Carcinoma: In present study it consists of 0.7% of all ovarian tumors mostly occurring in the patient at the age of 60 years and it is unilateral.

V. Conclusion

Higher incidence of ovarian surface epithelial tumors seen in both developing and also in developed countries. In ovarian tumors 5 year survival rate is around 30%.This is due to late diagnosis. Early screening is necessary in developing countries to improve survival rate.

eferences

[1]. Histopathological study of Surface Epithelial Tumors of the Ovary: A Prospective study Shreya Hegde1, Vinitha Samartha2.JEMDS 2015; Vol. 4, Issue 20, March 09; Page: 3473-3481.
[2]. Surface epithelial tumors of ovary - an analysis in a tertiary referral hospital. D Ghartimagar, A Ghosh, G KC, S Ranabhat, OP Talwar. Journal of Pathology of Nepal (2013) Vol. 3, No.1, Issue 5, 397-402.
[3]. Epithelial ovarian tumors: Clinicopathological correlation and immunohistochemical study Pooja S. Naik, Sanjay Deshmukh, Siddhi Gaurish Sinai Khandeparkar. J Midlife Health. 2015 Oct-Dec; 6(4): 178–183.
[4]. Clinicopathological Study of Surface Epithelial Tumours of the Ovary: An Institutional Study Nalini Modepalli and Suguna Belur Venugopal. J Clin Diagn Res. 2016 Oct; 10(10): EC01–EC04.
[5]. Kurman RJ, Visvanathan K, Roden R, et al. Early detection and treatment of ovarian cancer: shifting from early stage to minimal volume of disease based on a new model of carcinogenesis. Am J Obstet Gynecol. 2008;198:351–56. [PMC free article] [PubMed]
[6]. Zaman S, Majid S, Hussain M, Chughtai O, Mahboob J, Chughtai S. A retrospective study of ovarian tumours and tumour-like lesions. Journal of Ayub Medical College Abbottabad. 2010;22(1):104–08.[PubMed]

[7]. Pilli GS, Sunitha KP, Dhaded AV, Yenni VV. Ovarian tumours a study of 282 cases. J Indian Med Associ. 2002;100(7):420 24. [PubMed]
[8]. Jha R, Karki S. Histological pattern of ovarian tumours and their age distribution. Nepal Medial College Journal. 2008;10(2):81–85. [PubMed]
[9]. Kayastha S. Study of ovarian tumours in Nepal Medical College Teaching Hospital. Nepal Medical College Journal. 2009;11(3):200–02. [PubMed]
[10]. Mankar DV, Jain GK. Histopathological profile of ovarian tumours: A twelve year institutional experience. Muller Journal of Medical Sciences and Research. 2015;6:107–11.
[11]. Maheshwari V, Tyagi SP, Sexena K, Tyagi N, Sharma R, Aziz M, et al. Surface epithelial tumours of the ovary. Indian J Pathol Microbiol. 1994;37(1):75–85. [PubMed]
[12]. Kanthikar SN, Dravid NV, Deore PN, Nikumbh DB, Suryawanshi KH. Clinico-Histopathological analysis of neoplastic and non-neoplastic lesions of the ovary: A 3-Year prospective study in Dhule, North Maharashtra, India. Journal of Clinical and Diagnostic Research : JCDR. 2014;8(8):FC04–FC07.[PMC free article] [PubMed]
[13]. Ramachandra G, Harilal KR, Chinnamma KK, Thangavelu H. Ovarian neoplasms: A study of 903 cases. J Obstet Gynecol India. 1972;22:309–15.
[14]. Saxena KM, Devi G, Prakash P. Ovarian neoplasms: A retrospective study of 356 cases. J Obst Gynaec Ind. 1980;20(6):522–27.
[15]. Madan SP, Mohsin S, Hameed F, Saxena K. Epithelial tumours of the ovary. Indian J Pathol Microbiol. 1978;21:281–89. [PubMed]
[16]. Forae GD, Aligbe JU. Ovarian tumours among Nigerian females: A Private practice experience in Benin City, Nigeria. Advanced Biomedical Research. 2016;5:61. [PMC free article] [PubMed]
[17]. Dawar R. Surface epithelial tumours of ovary. Indian Journal of Medical & Paediatric Oncology. 2004;25(1):5–9.
[18]. Tushar K, Asanranthi K, Mohapatra PC. Intraoperative cytology of ovarian tumours. J Obstet Gynecol India. 2005;55(4):345–49.

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