ORIGINAL RESEARCH

Study of surface epithelial tumors of the ovary-A cross sectional study

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ABSTRACT
Background: Ovarian neoplasms are the cause of highest mortality in female genital tract neoplasms. Surface epithelial stromal tumours of ovary being the most common type of ovarian tumours **Aim:** The aim of the study was to find the incidence and histopathological pattern of surface epithel.ial ovarian tumor in our tertiary referral centre. **Methods:** This cross sectional observational study, carried in the department of pathology, P.D.U. Medical College and Hospital, Rajkot. Total 90 specimens received during the study period are preserved immediately in 10% neutral buffered formalin. All were evaluated by gross and histopathological examination. All clinical and histopathological data were recorded. **Results:** Incidence of surface epithelial tumours was 44.5%, Amongst these, 77.5% were serous, 17.5% were mucinous, 00 endometrioid, 2.5% each of transitional cell and undifferentiated tumor. Majority of the Serous and mucinous tumours are unilateral 96% & 85.5% and Benign 83.8% & 66.6% respectively. The mean age of diagnosis for benign serous was 41.5 years and for benign mucinous tumour were 48.5 years. The most common clinical presentation was chronic abdominal pain (92.5%) and abdominal enlargement (52.5%). **Conclusions:** Surface epithelial tumours present a great challenge to the gynecologic oncologist because non-neoplastic ovarian lesions can mimic a neoplasm. Their proper recognition and histopathologic classification is essential for appropriate management.

Keywords: Surface epithelial tumours, Benign, Malignant, serous tumour, mucinous tumour.

INTRODUCTION
Ovarian malignancies represent the greatest clinical challenge in gynaecology. Worldwide, ovarian cancer is the sixth most common cancer in women and the seventh most common cause of cancer death [1]. Ovaries are the third leading site of cancer among women trailing behind cervical and breast cancer according to the Indian cancer registries [2]. Ovarian surface epithelium (OSE)-derived ovarian carcinoma is the most lethal gynecological malignancy. 5–10% of epithelial ovarian cancer involves strong family histories. Thus, the familial component is one of the most important and best-defined risk factors for ovarian cancer [3-4]. Pathology of the ovary is most difficult gynaecologic disease to evaluate clinically. Ovarian neoplasm is the most fascinating tumor of the women in terms of its histogenesis, clinical behavior and malignant potentiality. Ovarian tumor accounts for 15 to 25% of all primary malignancies in female genital organs [5-6]. The common ovarian cancers are surface epithelial tumors (85%). The main factors involved in the etiology are the age, genetic factors and reproductive factors [7]. Ovarian tumors are insidious in onset and usually diagnosed at late stage. They commonly present with abdominal pain, a lump or menstrual irregularity [8]. Incidence of malignant tumors increases with age, occurring predominantly in perimenopausal women [9]. 90% of all ovarian carcinomas and two thirds of all ovarian neoplasms are surface epithelial tumours. These tumours assume a wide array of histological pattern making it an interesting topic for study. Knowledge of the type of tumour and differentiation helps in judicious management of the patient in terms of appropriate treatment and follow-up [10-11].

AIMS & OBJECTIVES
To study the incidence and various morphological aspects of Surface Epithelial Tumors (SETs) of ovary in Saurashtra region

MATERIAL AND METHODS
This was a cross sectional observational study, carried out at histopathology laboratory in the department of

pathology, P.D.U. Medical College and Hospital, Rajkot, India, over a period of 2 years 2 month from July2009 to august 2011.

The specimen received from Obstetrics & Gynecology, surgery department as well as Padmakuwarba hospital are preserved immediately in 10% neutral buffered formalin. Total 90 cases were enrolled in our study.

All the socio-demographical, clinical and histopathological data were recorded according to standard Performa.

The external surface of tumor was examined for the completeness of capsule, presence of any papillae or nodules. Multiple sectioning of the specimen was done.

The tissues were fixed in 10% formalin and processed through standard. Paraffin embedding technique. After processing in automated tissue processors, the section from the tissue bit taken for further stain. The slides were stained with haematoxylin and eosin (H&E). The relevant history and investigations were recorded and comparison of histopathological findings with clinical data was done for diagnosis and staging.

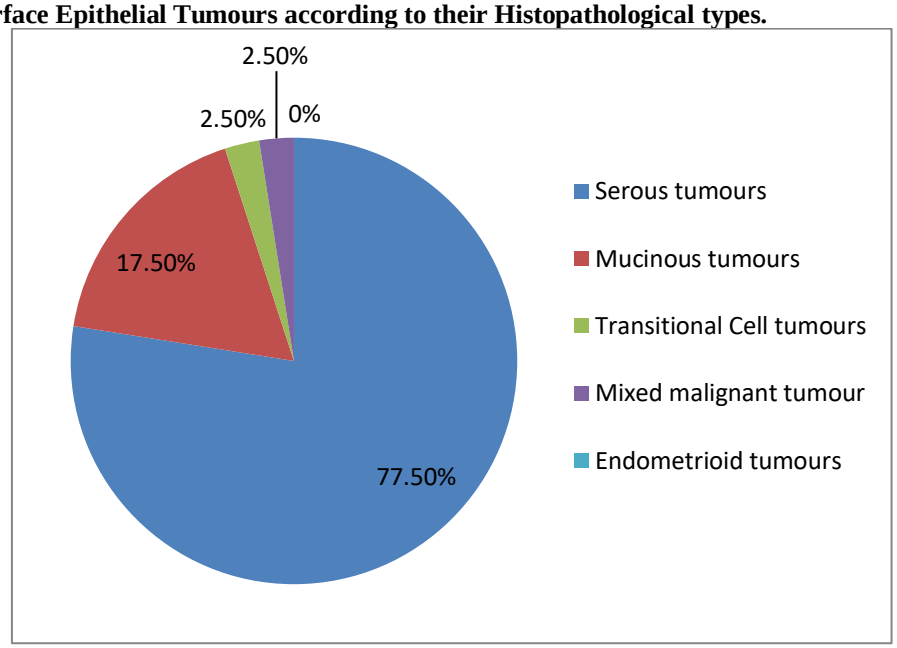
STATISTICAL ANALYSIS

Statistical analyses were done by using SPSS software version 22. Data Frequency, percentage, Mean and standard deviation were calculated. P value <0.05 considered statistically significant

RESULTS

Total 90 ovarian tumors specimens was received, Out of that, 40 cases (44.5%) were surface epithelial tumors. Among these 40 cases, 77.5% were serous, 17.5% were mucinous, 00 endometrioid, 2.5% each of transitional cell and undifferentiated tumor. (Figure 1)

Figure 1: Surface Epithelial Tumours according to their Histopathological types.



Among surface epithelial tumours, serous tumours were the most common (77.5%), Out of these, predominantly benign (83.8%) and unilateral (96%), 3.2% cases were borderline and 12.9% were malignant. Second most common tumour was Mucinous tumours **(**17.5%), predominantly benign (66.6%) and Unilateral (85.5%). No case of endometrioid Adenocarcinoma was diagnosed. O1 case of One case of mixed mullerian tumour and 01 case of Transitional cell tumour were diagnosed. Details shown in table: 1

Table 1: Histopathological categories of various types of Surface Epithelial Tumours with their laterality

Types		Unilateral	Bilateral	Total
Serous tumours	Benign	25	01	26
	Borderline	01	00	01
	Malignant	04	01	05
Mucinous tumours	Benign	4	01	05
	Borderline	01	00	01
	Malignant	00	00	00
Endometrioid tumours	Benign	00	00	00
	Borderline	00	00	00
	Malignant	00	00	00
Transitional cell tumours	Benign	00	00	00
	Borderline	00	00	00

	Malignant	01	00	01
Mixed malignant mullerian tumour		01	00	01

The maximum age incidence of serous tumor was between 3rd to 6th decades with median age of 41.5 years, and most of the benign mucinous tumours were found in 2nd to 5th decade.

Table 2: Age wise distribution of histopathological subtypes of epithelial Tumours

Types		Age Range (years)	Median Age (years)
Serous tumours	Benign	13 – 70	41.5
	Borderline	50	50
	Malignant	35 - 60	47.5
Mucinous tumours	Benign	22 - 75	48.5
	Borderline	35	35
	Malignant	-	-
Endometrioid tumours	Benign	-	-
	Borderline	-	-
	Malignant	-	-
Transitional cell tumours	Benign	-	-
	Borderline	-	-
	Malignant	40	40
Mixed malignant mullerian tumour		56	56

Common clinical finding were chronic abdominal pain (92.5%), abdominal enlargement (52.5%) and Leucorrhoea & Backache in 32.5% cases. Details shown in table:3

Table 3: Presenting Symptoms & Clinical Findings

Presenting Symptoms & Clinical Findings	No. of cases	Percentage
Chronic abdominal pain	37	92.5%
Abdominal enlargement	21	52.5%
Leucorrhoea & Backache	13	32.5%
Urinary symptoms	01	2.5%
Loss of weight & appetite	04	10%
Sterility	00	00
Ascites	01	2.5%

Figure 2: showing serous cyst adenoma and mucinous cyst adenoma (H & E stain-40X)

DISCUSSION

Surface epithelial tumours are derived from the ovarian surface epithelium which develops from the coelomic epithelium (modified mesothelium) which lines the ovary. The various histological types of ovarian surface epithelium tumours such as tubal type in serous neoplasms, endometrial type in endometrioid tumours and endocervical type in at least some mucinous neoplasms are attributed to this embryonic proximity [12].

In our study, incidence of the surface epithelial tumours accounted for 44.5% of ovarian tumours, which is consistent with the studies done by ST Wong et al [13], Scully RE et al [14] and Zaloudek C et al [15], whereas Zaman et al [16] reported some higher incidence.

Current study observed, serous tumours (Serous Cystadenoma) are predominant (83.5%), they are mostly benign (96%), we reported a single case of Transitional cell tumours and a single case of mixed malignant mullerian tumour**,** Similar trend nature was noted by S. Suneetha et al [17] and Badge et al [18] and Mondal et al [19]. 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. Benign serous tumours are usually small and the mucinous tumours present as huge masses [20].

In present study majority of the serous and mucinous tumours were unilateral, concordance to the. Kanthikar et al [21], also reported higher incidence of unilateral tumours in their study. The laterality of ovarian cancers is a clue to their nature.

Age is described as an independent prognostic factor in ovarian tumours. Ovarian cancer rates increase exponentially with age. Borderline tumours are seen in women in their 30's [22].

The mean age of diagnosis in our study was 41.5 years for benign serous tumour and 48.5 years for benign mucinous tumours, the age distribution was comparable with studies done by Ghartimagar D, et al [23], Kayastha et al [24] and Mankar et al [25].

In our study, chronic abdominal pain was the most common presenting symptom followed by abdominal enlargement (abdominal mass) was the common sign, malignant tumours most commonly presented with ascitis and mass abdomen. These findings were

accordance with the studies done by Nalini M et al [26], Birare SD et al [27] and Maheshwari et al [28].
Current study reported menstrual irregularities were more common amongst ovarian tumours, our finding comparable with the Kanthikar et al [29]
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 [30].

CONCLUSION

Higher incidence of surface epithelial ovarian tumors was found in current study. Among both benign and malignant tumors, serous type was the commonest followed by mucinous type. Targeted therapy depending on the type of tumor is essential to improve outcome in cases of ovarian tumors emphasizing the need for microscopic histopathological examination and grading in every case of ovarian tumor.

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