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Endometrial Neoplasms in a Tertiary Care Hospital: A Retrospective Study

[1]Lionel Rohit Mathew, [2]Prema Devi Elangovan, [3]Sridevi Vijayasankar
[1]Assistant Professor, [2]Associate Professor, [3]Professor
[1,2,3]Department of Pathology, Sri Muthukumaran Medical College, Hospital & Research Institute, Chennai

***Corresponding Author:**
Lionel Rohit Mathew
Assistant Professor, Department of Pathology, Sri Muthukumaran Medical College, Hospital & Research Institute, Chennai

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Abstract

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Introduction

While endometrial cancer is the commonest gynaecologic malignancy in western women, with 41,000 new cases in the United States in 2006 [1], the cases in developing countries and Japan are four to five times lower. In India, the rate is 4.3 per 100,000 [2]. Ninety-seven percent of all malignancies of the uterine corpus arise from the glands of the endometrium [3]. The annual incidence of endometrial carcinomas is estimated at 10–20 per 100,000 women and it is on the rise [4,5]. Around 75% of cases are diagnosed at early stage with a tumour confined to the uterine corpus [6]. Endometrial carcinoma is the fourth most common malignancy among women after carcinomas of breast, colorectum, and lung [7]. In the United States alone, it accounts for approximately 6000 deaths per year [4].

Endometrial carcinomas vary in histopathologic appearance and clinical features [8]. It is composed of a number of tumour types with different light-microscopic features, molecular genetic alterations, and prognoses [9]. The microscopic appearance of the tumour resembles that of the proliferative endometrium, with a variable degree of glandular complexity and cellular pleomorphism [10].

The most common type of endometrial carcinoma is endometrioid adenocarcinoma, which is composed of malignant glandular epithelial elements with an admixture of squamous metaplasia [11]. The tumour develops from endometrial hyperplasia in the setting of excess oestrogen exposure [8]. Clear cell and papillary serous carcinoma are histologically similar to those noted in the ovary and the fallopian tube, and have worse prognosis [12]. Mucinous, squamous, and undifferentiated tumours are rarely encountered. Endometrioid accounts for 75%–80%, uterine papillary serous <10%, clear cell 4%, squamous cell <1%, and mixed endometrial carcinoma (10%). Serous carcinomas develop from "endometrial intraepithelial carcinoma"- a lesion representing malignant transformation of the endometrial surface epithelium [8]. This study documents our encounters with different types of epithelial malignancies in endometrium carcinoma in relation to the histological subtypes, age groups, and stage among all patients recorded in a tertiary care hospital.

Materials and methods

A descriptive retrospective study was done at the department of pathology in Sri Muthukumaran Medical College, Hospital & Research Institute from January 2015 to May 2018.

A total of 67 samples containing endometrium were studied. The sample types included endometrial curetting, pipelle sampling and hysterectomy specimens. Samples with less tissue for processing and poorly preserved samples were excluded from the study. All non-neoplastic lesions were excluded

from our study. The reporting of the malignancies was done as per WHO classification. The samples were received in 10% formalin, processed and sections were cut using paraffin blocks at 4-micron thickness. Sections were stained using Haematoxylin and Eosin and were analysed.

The sample type, patient's age, neoplasm cell type of origin and histological classification of the neoplasm were recorded in a proforma. The data was analysed in SPSS version 20. Age was categorised into different groups. All data were expressed as frequency and percentage.

Results

Out of a total of 95 patient records, 67 were selected, based on our inclusion criteria (neoplastic lesions).

Table 1: Sample type and histological classification of the neoplasm (n=67)

Parameter	**Frequency**	**Percentage (%)**
Sample Types	**(Total = 69)**	
Endometrial Curetting	14	21
Pipelle Sample	09	13
Total Abdominal Hysterectomy	02	03
Total Abdominal Hysterectomy with Salpingo-oophorectomy	42	63
Parameter	**Frequency**	**Percentage (%)**
Sample Types		
Endometrial Curetting	14	21
Pipelle Sample	09	13
Total Abdominal Hysterectomy	02	03
Total Abdominal Hysterectomy with Salpingo-oophorectomy	42	63

Histological Classification	**Frequency**	**Percentage (%)**
Epithelial		
Endometrioid Adenocarcinoma	34	50.74
Serous Papillary Carcinoma	23	34.32
Malignant Mixed Mullerian Tumour	05	07.47
Clear Cell Carcinoma	03	04.48
Stromal		
Low-Grade Endometrial Stromal Sarcoma	02	02.99

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Figure 1: Age distribution among study samples (n=67)

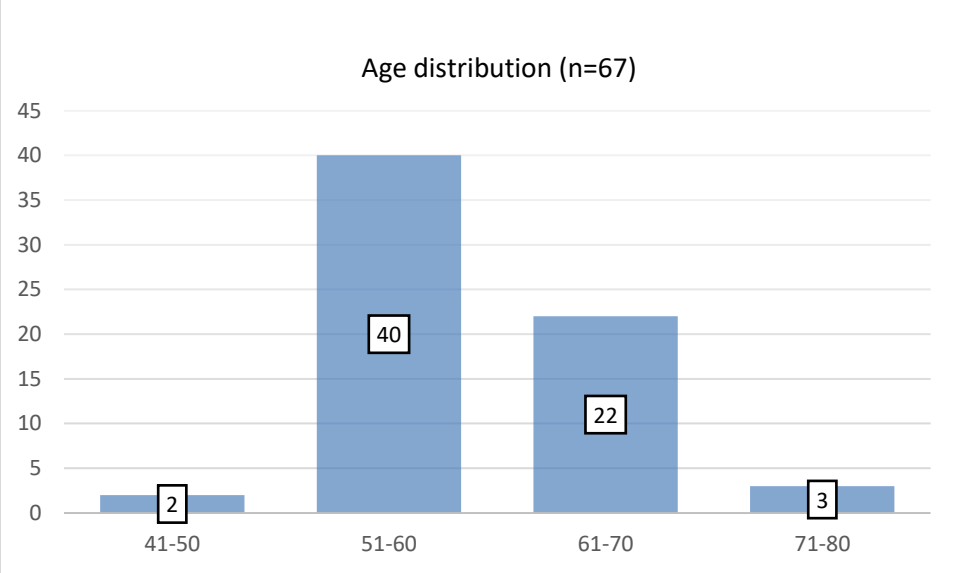
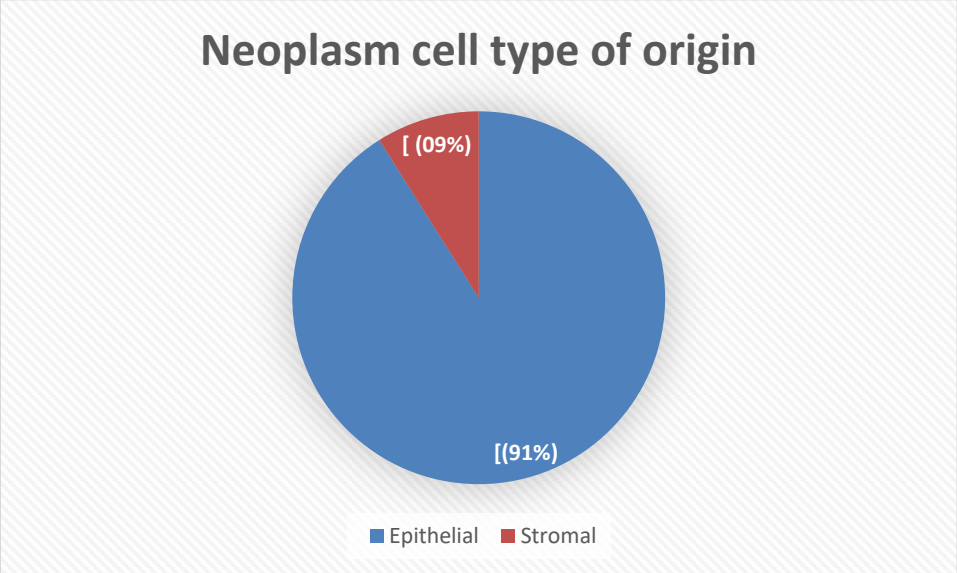


Figure 2 : Neoplasm cell type of origin among samples (n=67)



Discussion

Among the 67 samples analysed in this study, the commonly received sample was from total abdominal hysterectomy with salpingo-oophorectomy (63%), followed by endometrial curetting (D & C) (21%). Similar observations are made in the study by Sobande A et al [13]

Mahdy H et al [14] report in their study that over 90% of endometrial cancers are epithelial malignancies, i.e., carcinomas. This is in line with our study, where 91% of the neoplasms had epithelial cells as their origin.

Various reasons may cause an increase in oestrogen levels in the body, and this continuously stimulates the proliferation of endometrial tissue [15] The possible reason for excessive endometrial cell proliferation is that the endometrial tissue is stimulated for a long time by a single oestrogen without progesterone antagonism resulting in unchecked proliferation [16].

In the present study, the most common type of endometrial cancer was endometrioid adenocarcinoma (50.74%), followed by serous papillary carcinoma (34.32%). This is corroborated

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by various other studies that report endometrioid adenocarcinoma to be the commonest pathologic type of endometrial cancer, accounting for about 74.25 to 80.11% [17,18].

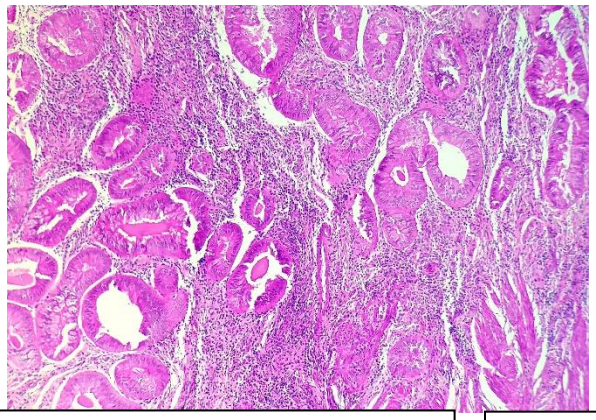

Figure 3: Endometrioid Adenocarcinoma (10x)

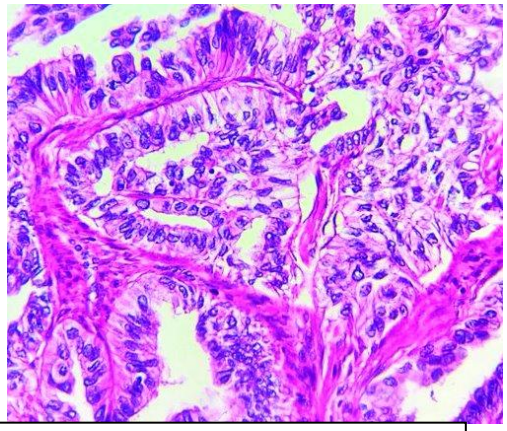

Figure 4: Serous Papillary Adenocarcinoma (40x)

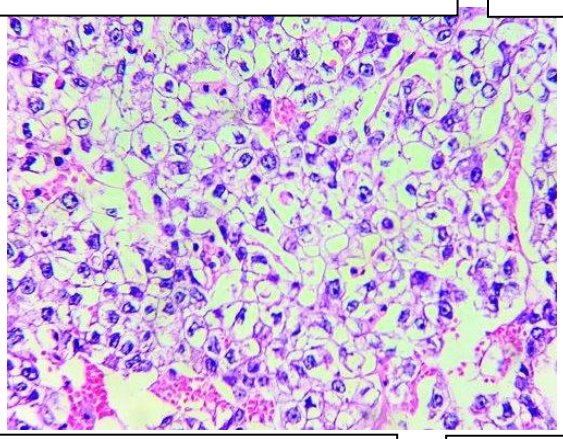

Figure 4-5: Clear Cell Carcinoma (40x)

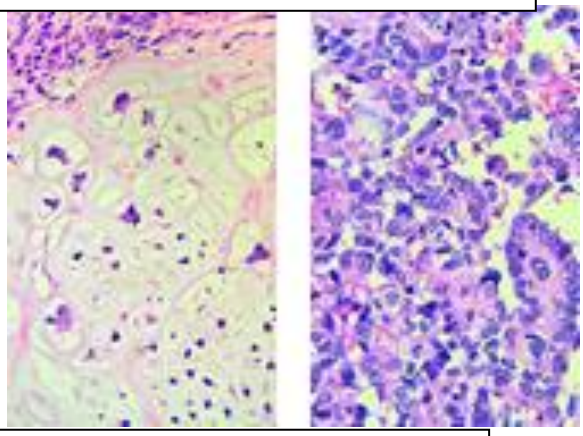

Figure 6: Malignant Mixed Mullerian Tumour (40x)

Different studies have reported that age is a high-risk factor for endometrial dysplasia coexisting with endometrial carcinoma [19–21]. The general consensus is that endometrial carcinoma is more likely to occur in perimenopausal women [22]. In the present study, the most commonly affected age group was 51-60 years, followed by 61-70 years. Trimble CL et al. have reported in their study that endometrial hyperplasia patients aged 40–59 have an increased risk of endometrial cancer [23]. One of the reasons for the occurrence of endometrial cancer in the perimenopausal age is believed to be due to the declining immune function of the body [24]. Studies have recorded that the incidence of endometrial cancer under the age of 50 is 102 per 100,000, while its incidence over the age of 50 has risen to 1374 per 100,000 [25].This is in line with the present study where the most number of cases were seen in women over the age of 50.

Conclusion

From the results of this study, we conclude that age greater than 50 years is a high-risk factor for the development of endometrial neoplasms. Majority of the endometrial neoplasms have epithelium as the cell of origin, i.e., most of them are endometrial carcinomas. Among the endometrial carcinomas, endometrioid adenocarcinoma is the commonly observed histopathologic type.

This study highlights the importance of histopathology in studying endometrial lesions.

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