Research Article

Histopathological prognostic factor comparison of endometrial cancer patients in a tertiary hospital in India

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ABSTRACT

Background: The objective of this study was to describe the histopathological features of patients with endometrial cancer in a tertiary hospital in South India.
Methods: This retrospective study included cases diagnosed and operated in a tertiary hospital in the period of 3 years. Histopathological data was retrieved from records and analyzed. The study included both endometrial biopsy and post hysterectomy specimens of which prognostic factor comparison was performed on the latter following TNM and FIGO staging systems.
Results: The sample consisted of 43 patients which includes 28 resected and 15 biopsy specimens. Age ranged from a minimum of 27 years to a maximum of 75 years (Mean around 52 years). Endometrioid adenocarcinoma was the predominant histological subtype (80 – 85%), while other types included papillary serous adenocarcinoma, stromal sarcoma and malignant mixed mullerian tumour (MMMST). Grade I tumours were 19 in number constituting 79.16% and stage IB tumours were the commonest. Pelvic nodal involvement, lymphatic invasion and recurrence were individually noted in one patient each.
Conclusions: This study highlights the prognostic characteristics of endometrial cancer patients with most of them presenting in early stages thereby having a good prognostic outcome.

Keywords: Endometrial carcinoma, Histopathology, Staging, Prognostic factors

INTRODUCTION

Endometrial cancer (EMC) is the most common female genital tract malignancy in developed countries.[1] Its incidence varies in different parts of the world. It encompasses a biologically and morphologically diverse group of tumours with differing pathogenesis. It tends to occur frequently in postmenopausal women.[2] Risk factors include obesity, nulliparity, unopposed oestrogen, diabetes mellitus, family history of breast, colon or endometrial cancer and late menopause. Generally, a prognosis of women with EMC is good with a high overall survival rate.[3] The most important determinant of survival is the stage at presentation confirmed in a gold standard manner by histopathology alone.[4]

With the above background, this study was undertaken to find and compare the histopathological variants and prognostic staging factors.

METHODS

This retrospective study was conducted by retrieving data from the archives of department of Pathology. It includes a total of 43 patients treated in a span of 3 years between January 2010 – December 2012. Data was categorized into age, architectural type, grade, TNM, and FIGO staging. Staging was assigned on surgical specimens following hysterectomy with salpingooophorectomy and retroperitoneal lymph node sampling with or without omentectomy. Routine H & E staging was performed on

the classical processed, paraffin embedded blocks and slides were reviewed by two experienced Surgical Pathologists individually.

RESULTS

The From the study period, 43 EMC patients were identified. Age ranged from 27 to 75 years (Mean of 52 years) and majority of the patients were in the age group between 51 – 60 years as can be seen from Table 1. 15 patients got only biopsy had done of which 12 had well differentiated endometrioid adenocarcinoma findings, 1 case each of papillary serous carcinoma and squamous cell carcinoma. In 1 case definite diagnosis was not possible as opinion varied between clear cell adenocarcinoma and stromal sarcoma.

Table 1: Age group comparison of EMC patients.

Age group	Number	Percentage (%)
11-20	0	0
21-30	1	2.32
31-40	7	16.28
41-50	13	30.23
51-60	14	32.56
61-70	5	11.63
71-80	3	6.98
Total	43	100

28 patients got a complete surgical staging. Endometrioid adenocarcinoma was the predominant histological subtype, being recognized in 24 patients (85.72%), while other types were found among 4 patients (14.28%). Table 2 shows the histological types and Table 3 shows the comparison analysis of various histopathological factors.

Table 2: Histological classification of EMC patients.

Specimen type	Histological type	Percentage (%)
Biopsy (15)	Endometrioid (12)	80
	Papillary serous (1)	6.67
	Squamous cell (1)	6.67
	Inconclusive (1)	6.67
Surgical resections (8)	Endometrioid (24)	85.72
	Papillary serous (2)	7.14
	Stromal sarcoma (1)	3.57
	MMMST (1)	3.57

Among endometrial adenocarcinoma patients, Grade I tumours accounted for 79.16% (19 in number) and Stage IB lesions for 87.5% (21 in number). 2 cases had adenocarcinoma in situ stage. 1 patient had pelvic nodal involvement and 1 had lymphatic invasion. Distant metastasis was not seen in any of the patients. The operated patients were uniformly followed regularly for 1 year and only one patient had recurrence. 5 patients had associated leiomyomas, 2 had complex hyperplasia with atypia and one had complex hyperplasia without atypia.

Table 3: Comparison of histopathological factors of prognostic value with FIGO (2009) staging.

	Number	Percentage
Grading of endometrioid adenocarcinoma (24)		
Grade I	19	79.16
Grade II	3	12.5
Grade III	2	8.34
Myometrial invasion (24)		
Absent	2	8.34
<50%	1	4.16
>50%	21	87.5
Lymphatic Invasion	1	4.16
Lymph node involvement	1	4.16
Distant metastasis	0	0
Recurrence	1	4.16
FIGO stage of endometrial carcinoma (24)		
IA	3	12.5
IB	21	87.5
IIA,IIB	0	
IIIA,IIIB,IIIC	0	
IVA,IVB	0	
FIGO stage of papillary serous carcinoma (2)		
III A	2	100

DISCUSSION

EMC most commonly occurs in postmenopausal age group. In our study the youngest age of diagnosis was 27 years. A mean of 52 years was observed which is slightly lesser than the usual common age group of 55 – 65 years according to the existing data of incidence.[5] The high incidence in advancing age can be partly explained by the increased synthesis of oestrogens in body fats from adrenal and ovarian androgen precursors.

The results of our study showed that endometrioid adenocarcinoma is the most common type of EMC, comprising around 85% of the cases. The data from the specific literature regarding the incidence of the different histopathological forms of endometrial carcinomas, appreciate the fact that it represents 80% of the cases of EMC.[5]

79.16% of the cases of endometrial adenocarcinoma belonged to grade I i.e. well differentiated forms in the current study. It is of importance as the well differentiated forms have a survival rate of 72 -86%, as compared to the non-differentiated ones where the survival is only of 28-58%.

Stage I was the most common stage using the surgical and pathological staging at the time of surgery. Stage IB accounted for vast majority of the cases. The study showed similar comparison with the works of Pellerin et al, Hickerson, Zullo et al. and Zhu L et al.[6-9]

Our study also found that early stage disease, endometrioid histology, grade I tumour, absence or less than half of myometrial invasion, absence of lymphovascular invasion and negative lymph node metastasis were good prognostic factors influencing the survival of the patient. These observations are in compliance with the data from WHO and the works of Morrow et al., Mariani et al.[10,11]

The associated pathologies found in some cases confirm a definite relationship of unopposed oestrogen activity in endometrioid adenocarcinoma pathogenesis.

The two cases of papillary serous carcinoma showed a FIGO stage of IIIA indicating the aggressive nature of malignancy and in addition one of the case was detected in the age of 75 years, the maximum age in the current study indicating its occurrence in old age. This correlates to the already published data by WHO.

One case of high grade undifferentiated stromal sarcoma was found in a 55 year old female and one case of high grade MMMST was found in a 74 year old.

CONCLUSIONS

Endometrioid adenocarcinoma is the most common EMC with most of the lesions being well differentiated and detected early. Complete analysis of various histopathological findings is of value in assessing the demographic profile and survival rates of EMC patients. This in turn may call for changes in the modalities of cancer curative medicine.

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