Histomorphological Spectrum of Endometrial Lesions on D & C – Our Experience in a Primary Health Care

S. P. Naga Praphulla, A. Vaani Lalitya

Abstract— Endometrium that lines the uterine cavity is one of the most dynamic tissue in the human body. It is an interesting tissue for histopathology study and is characterised by cyclic responses to the hormones that lead to cell proliferation, differentiation and death response to the sex steroids. The variety of endometrial lesions on histopathological diagnosis differ from the age and the dose over time of hormonal therapy. The aim is to study the histopathological spectrum of endometrial tissue biopsies in Dilatation & Curettage (D & C). The study period was of six months that contains 100 specimens from D & C for therapeutic or/and diagnostic purpose is fixed in 10% formalin for 12-24 hours and the entire tissue was taken for routine tissue processing. After analyzing 100 samples, maximum cases that were diagnosed are non-neoplastic (89 cases) and neoplastic (11 cases). High incidences of morphological variation in endometrial were noted in the peri and post menopausal age of women's life. The glandular and stromal dyssynchroni of the endometrium was the commonest change that was encountered in all the age groups that was followed by other non-neoplastic changes. Finally, variation in the endometrial pathology that was seen in the tissue microscopically in all the samples from reproductive age to post-menopausal were mostly due to the excessive external use of steroid hormones that were given by the gynaecologist prior to the D & C to relive the signs and symptoms based on clinical diagnosis without finding the underlying aetiology.

Index Terms— Adenocarcinoma, D & C, Endometrial biopsy

1 Introduction

The endometrium is one of the organ that respond to the circulating hormones oestrogen and progesterone. In normal cycles, the menstrual shedding is followed by endometrial proliferation under estrogenic stimulation. The endometrial thickness increases as a result of active growth of glands, stroma and blood vessels. During the proliferative phase the endometrial glands grown and become tortuous because of active proliferation of epithelial cells. The presence of oestrogen receptors in the nuclei of endometrial cells is responsible for all the changes in proliferative phase. After ovulation, the secretion of progesterone inhibits the proliferative activity of the endometrium and induces a complex secretory activity. The secretory changes take place only in an oestrogen-primed endometrium.

There is a wide range of endometrial lesions including non-neoplastic and neoplastic that occur during any time of the women's life. There is an age specific association of endometrial lesions .Histopathological examination of D & C which is a short and cost affective outpatient procedure will pin point the exact cause of underlying endometrial aetiology and not only helps in planning proper management but also avoids unnecessary exogenous hormonal therapy to the patient which has adverse effects on long term use. Hence, histopathological examination is mandatory, in case of every women (reproductive, peri-menopausal and post- menopausal) who attends gynaecologist ward for any problem, prior to the initiation of the treatment which alters histo-morphology on endometrium tissue.

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2 Aim of the Study

To study the histomorphological spectrum of endometrial lesions in D &C in various age groups.

3 Materials and Methods

The six months study from June 2017 to November 2017 included 100 cases of endometrial samples obtained from D & C procedure from patients clinically diagnosed as having different gynaecology problems who attended OPD. A few samples were taken before plan of treatment and some in the second visit after the start of treatment.

3.1 Sampling Procedure

The endometrial samples obtained from D & C for therapeutic or diagnostic purpose is fixed in 10% formalin for 12-24 hours and the entire tissue was taken for routine processing. 4-5 µm thickness sections taken from paraffin blocks were stained with Haematoxylin and Eosin (H&E) and studied under light microscopy.

3.2 Inclusion Criteria

Endometrial tissue from patients of all age groups clinically suspected diagnosed as having some underlying aetiology.

3.3 Exclusion Criteria

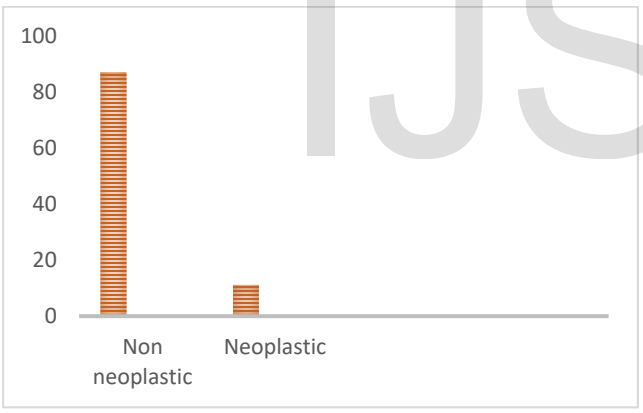
Patients presenting with pregnancy related complications.

4 Results

In total of 100 cases diagnosed on D & C samples. Highest number of cases that were encountered are non-neoplastic 89 cases and neoplastic 11 cases. Patients were categorised into reproductive, perimenopausal and postmenopausal group. Majority of the patients were in perimenopausal age group constituting 25% whereas patients in postmenopausal age group constituted 55% and reproductive age group 20%.

TABLE 1
AGE WISE DISTRIBUTION OF CASES

Age in Years	*No. of cases*
25 – 35	20
36 – 45	25
46 – 55	30
> 56	25



Graph 1. Distribution of Lesions

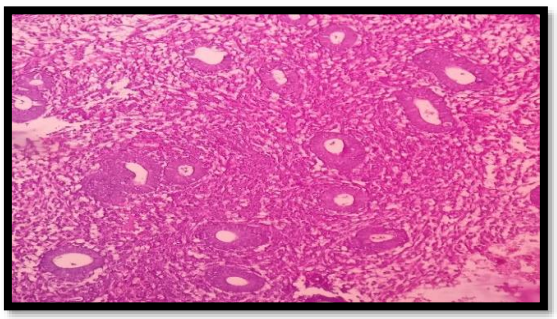


Fig. 1. 40X H&E Microphotograph of proliferative phase endometrium

TABLE 2
SPECTRUM OF HEPATIC LESIONS IN FNAC

Spectrum of endometrial tissue	*Age in Years*				
	25 – 35	*36 - 45*	*46 - 55*	*>55*	*Total*
Proliferative Phase	07	04	00	00	**11**
Secretory Phase	04	03	03	00	**10**
Disordered Proliferative Endimetrium	00	02	02	00	**04**
Endometritis	00	02	03	04	**09**
Dyssynchronous Endometrium	00	08	10	06	**24**
Endometrial Polyps	02	02	03	02	**09**
Atrophic	00	00	04	06	**10**
Simple Hyperplasia	04	02	01	00	**07**
Complex Hyperplasia	03	01	03	02	**09**
Tumours	00	01	04	06	**11**
Total	**20**	**25**	**30**	**25**	**100**

The most common clinical presentation in the reproductive age group is infertility, whereas the most frequent presentation of the peri and post-menopausal women were of abnormal bleeding. Few biopsies were of taken before the start of treatment and few were post therapy specimens.

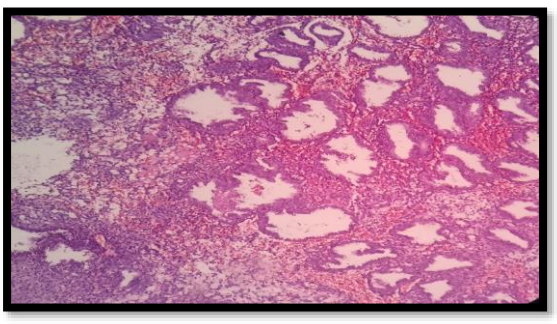


Fig. 2. 40 X H&E Microphotograph of Secretory phase endometrium

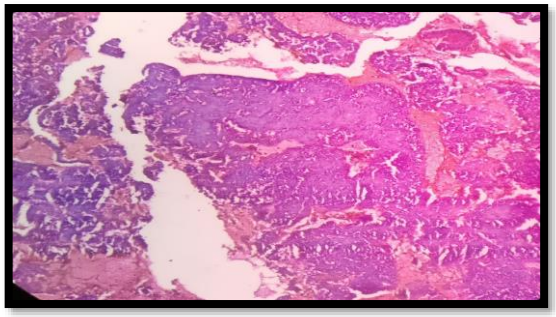


Fig. 3. 40X H&E Microphotograph of Glandular & Stromal breakdown

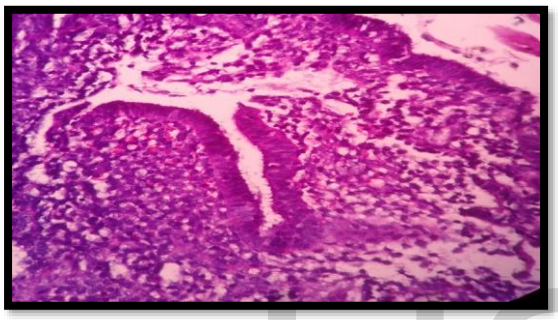


Fig. 4. 40X H&E Microphotograph Dyssynchronous endometrium

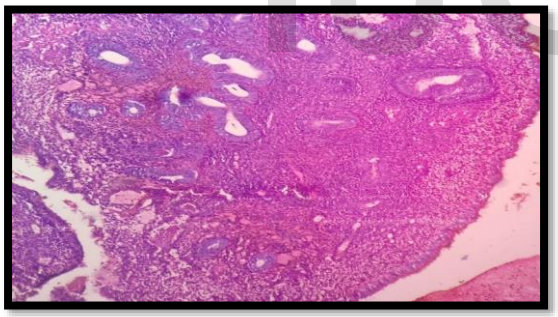


Fig. 5. 40X H&E Microphotograph Endometrial polyp

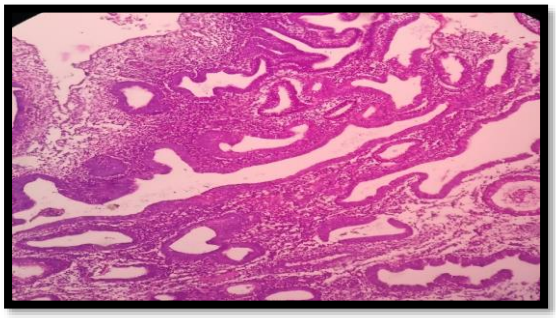


Fig. 6. 40X H&E Microphotograph Simple hyperplasia without atypia

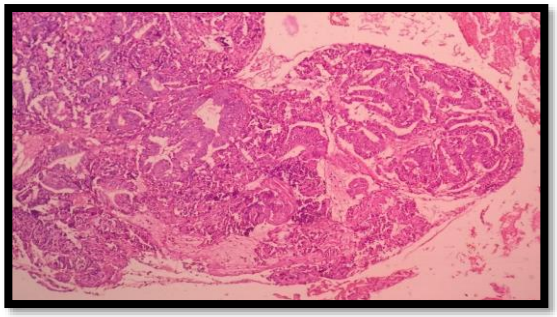


Fig. 7. 40X H&E Microphotograph complex hyperplasia with atypia

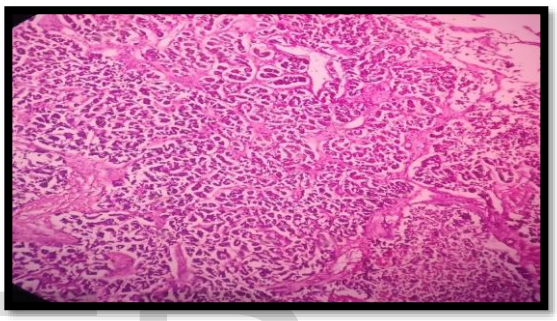


Fig. 8. 40X H&E Microphotograph of Adenocarcinoma endometrium

5 Discussion

The diseases of endometrium vary from age to age and causes different signs and symptoms in reproductive, perimenopausal and postmenopausal women. Spectrum of lesions were diagnosed in the endometrial tissue biopsies that includes normal endometrial tissue in proliferative phase or secretory phase, non-neoplastic and neoplastic. The endometrial lesions that were encountered in the reproductive, peri and postmenopausal age group were: Proliferative phase, Secretaory phase, Disorder proliferative endometrium, Endometritis, Dyssynchronus endometrium, Endomertrial Polyp, Atrophic endometrium, Simple and Complex hyperplasia, Endometrial carcinoma.

Majority of the patients were in perimenopausal age group (30) followed by the post-menopausal (25) which was comparable with the study of Rajshri et al. The reason for this finding were may be due to the early evaluation of their symptoms and treated appropriately there by decreasing the incidence in later age group. The most common clinical presentation in reproductive age group was infertility and most frequent clinical complaint in peri and postmenopausal women was excessive bleeding

In our present study the most common finding encountered microscopically was proliferative phase endometrium followed by the secretory phase endometrium in a woman of reproductive and perimenopausal age group which was not comparable to the study done by Bhatta et al where higher incidences of

proliferative phase endometrium in perimenopausal age group. In the present study dyssynchronous endometrium was noted high in the 46-55 age group which was not been seen by any other studies of these patients who were microscopically diagnosed as dyssynchronous endometrium clinically presented as excessive bleeding. Microscopically these cases were breakdown of stroma with crowding of glands. Few cases among them showed complex hyperplasia with atypia and in few cases, we found in- situ lesions in elder age group.

Retrospective study on the clinical data of these patients showed out that most of the patients were on hormonal treatment prior to the D & C for regression of clinical symptoms. Higher incidences of carcinoma were noted in the postmenopausal age group, adenocarcinoma was the most common malignant tumour encountered in our present study.

6 Conclusions

With our present study done in a primary health area we concluded that in normal D & C tissue sample microscopically we sign out maximum cases of proliferative and secretory phase endometrium in reproductive and perimenopausal age groups in a routine practice taking consideration of clinical data. And other endometrial lesions in different age groups. At times we encountered few cases showing a breakdown of endometrium and dyssynchronous pattern of endometrium that deviated the diagnosis from normal phases of endometrium.

Problem in reporting the endometrial tissue on D & C for pathologist arises only when samples were taken after the start of treatment in peri and post-menopausal women. External hormonal therapy given by the treating gyencologist for symptomatic relief of clinical signs and symptoms influence in the endometrial tissue and sometimes it may mask the underlying original pathology of endometrium and at point may miss the neoplastic lesion in early age which leads to the advancement of disease. With this study we came to conclusion that D & C if needed should be done before start of treatment to avoid the bias in clinical diagnosis basing on histological findings.

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