STUDY OF ENDOMETRIUM IN POSTMENOPAUSAL AGE

by

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Although knowledge of the cyclic morphologic changes seen in the endometrium during the reproductive period have been on record for over 70 years, a proper description of the postmenopausal endometrium is found only in recent literature. This apparant lack of interest in the postmenopausal picture of endometrium was probably based on the assumption that it participates in the obvious general involutionary changes in the genitalia. The traditional concept of postmenopausal endometrium is of mucosa which has become thin and atrophic with a few small inactive glands set in a sparse fibrous stroma. Recent studies on postmenopausal bleeding have further awakened interest in the study of endometrium and the finding of cystic glandular hyperplasia at this age makes one think in terms of relation between the various types of postmenopausal endometrial patterns and malignancy of body uterus.

It is increasingly being realised that variations in the endometrial pattern in normal postmenopauasl women do occur and the traditional concept regarding this needs to be reconsidered. It is with this view that the present study is undertaken.

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Material and Mehods

The present series consists of a study of endometrium from 61 hysterectomised specimen from postmenopausal women who were admitted to Medical College Hospital and Lady Elgin Hospital, Jabalpur, from 1.1.'68 to 30.6.'70. Patients over the age of 40 years and with a history of amenorrhoea for one year or more were selected. Cases who had received hormone therapy or had uterine bleeding were excluded. Hysterectomy was performed for indications other than menstrual irregularity. The myometrium and adnexa were also examined histologically and the histologic appearances of endometrium were correlated with the clinical data in each case. The criteria of classification of endometrium were modified from McBride (1954) and the endometrium was classified into following groups: atrophic, inactive cystic gland pattern, proliferative and hyperplastic.

Results

Age: Maximum number of cases were in age group of 46-50 yrs, (23 cases, 37.7%). The youngest patient was aged 41 yrs., and the oldest was 80 yrs. old.

Duration of Menopause: Table 1 shows the duration of menopause in these cases.

TABLE 1
Duration of Menopause

Duration of menopause (in years)	No. of cases
1–5 years	24
6–10 years	14
11–15 years	11
16–20 years	8
More than 20 years	4

Age at the Onset of Menopause: Age at onset of menopause varied from 40 to 52 years. Maximum cases had their menopause at the age of 45 yrs.

Type of onset of menopause: In 50 cases the menopause was abrupt, in 10 it was preceded by hypomenorrhoea, and in 1 by oligomenorrhoea.

Previous menstrual history: Menstrual cycles were regular in 55 cases. 3 patients had oligomenorrhoea, 2 had previous history of menorrhagia, and 1 had hypomenorrhoea.

Parity: Three patients were nulliparous, 35 had between 1 to 5 children, and 23 had more than 5 children.

Complaints: The commonest symptom was something coming out per vagina, the next common was white discharge per vagina.

Clinical Diagnosis: 44 patients had genital prolapse. Table II shows the clinical diagnosis in these cases.

TABLE II
Clinical Diagnosis

Clinical diagnosis	No. of cases
Prolapse uterus	44
Ovarian tumour	6
Chronic cervicitis	4
Carcinoma of body uterus	3
Fibromyoma uterus	2
Prolapse uterus with cervical polyp	1
Pyometra	1

Type of Operation Performed: The type of operation performed in these patients is shown in Table III.

TABLE III
Type of Operation

Type of operation	No. of cases
Vaginal total hysterectomy	41
Vaginal hysterectomy & Salpingoophorectomy	1
Abdominal pan-hysterectomy	16
Abdominal total hysterectomy	1
Abdominal total hysterectomy with unilateral salpingectomy	1
Abdominal total hysterectomy with ovariotomy	1

Type of Endometrium: In 4 patients endometrial biopsy preceded hysterectomy and in 1 dilatation and curettage preceded hysterectomy. Type of endometrium obtained in these cases was classified according to modified McBride's criteria, and is shown in Table IX. We had no case of hyperplastic and secretery endometrium.

TABLE IV
Type of Endometrium

Type of endometrium	No. of cases
Atrophic	17 (27.9%)
Inactive cystic glandular pattern	31 (50.8%)
Proliferative	6 (9.8%)
Endometrial polyp	5 (8.2%)
Adenocarcinoma of body uterus	2 (3.3%)

Associated lesions: The associated lesions found in these cases are shown in Table V. The type of ovarian tumours found in these cases were simple serous cyst-3 (2 unilateral and 1 bilateral), dermoid cyst-2 (1 unilateral and 1 bilateral) and bilateral solid adenocarcinoma-1.

TABLE V
Associated Lesions

Associated lesions	No. of cases
Adenomyosis	10
Ovarian tumour	6
Leiomyoma uterus	5
Follicular cyst of ovary	3
Medial calcification of blood vessels	25

Clinico-pathological Correlation (Table VI)

The endometrial pattern was studied in the light of age of patients, duration of menopause, age at menopause, type of onset of menopause, previous menstrual history and parity of patient. With the exception of duration of menopause, no significant correlation was noticed between the endometrial patterns and any of the above factors.

It was observed that the incidence of atrophic endometrium increased upto 10 years postmenopausal and thereafter showed a remarkable progressive fall, while the inactive cystic gland pattern showed a parallel increase as the duration of menopause increased.

The progressive increase in the incidence of the cystic pattern with advancing years after menopause and a corresponding decrease in the incidence of atrophic endometrium suggested that more and more simple atrophic endometria became cystic as the number of years postmenopausal increased. This explains the pathogenesis of cystic gland pattern due to obstruction of the ducts of glands, with slow progressive distension of glands (Speert, 1949; Parke, *et al.*, 1956). Our findings do not support the work of Novak and Richardson (1941) that the cystic glandular pattern is initiated by anovulatory climacteric menstrual cycles. In this study all patients with atrophic endometrium had previous normal menstrual history and all except one had children. 90.3% of patients with inactive cystic glandular pattern had normal menstrual history and all but one had children.

There were six cases with proliferative endometrium in our series. They were below 55 years of age. This type of endometrium was found within first 5 years of menopause. This is due to the oestrogenic effect on the endometrium during earlier years of menopause, the source of oestrogen being either from cortical stromal hyperplasia of ovary (Smith, 1941), adrenal (Smith and Emerson, 1954), or anterior pituitary (Novak, 1956). Novak suggested that pituitary may assume oestrogenic functions after menopause.

There were five cases of endometrial polyps, all being found in patients aged 51 to 60 years. The incidence was parallel to the duration of menopause. They were found with equal frequency in multiparous and nulliparous women. The menstrual history and type of onset of menopause had no bearing on their occurrence. In all 5 cases the uninvolved endometrium was examined and showed cystic glandular pattern similar to polyp, thus supporting Speert's view (1949) regarding their pathogenesis. Novak and Richardson (1941) thought that they represented previous hyperplasia at the time of menopause in which retrogression had occured. But the menstrual history of these cases does not support this view.

Endometrial carcinoma was found in two patients aged 50 and 54 years, the duration of menopause being 3 and 5 years, respectively. One was a nullipara and the other had only one child. Their previous menstrual history was nomal and the onset of menopause was sudden.

The late menopause hypertension and diabetes were not present in any of them. The uninvolved endometrium was examined in these cases and showed inactive cystic and proliferative pattern, respectively, thus supporting the view of McBride (1955) and Butler, *et al.*, (1963) that the uninvolved endometrium may show any of the pattern found in the normal postmenopausal women and there is no significantly high incidence of endometrial hyperplasia associated with endometrial carcinoma.

Associated lesions

Adenomyosis was found in 10 out of 61 cases, thus giving an incidence of 16.4%. It did not show any constant relation with the age of patient or duration of menopause. In 6 of the 10 cases the pattern of ectopic foci of endometrium corresponded with the surface endometrium. The onset of menopause was sudden in all cases and all were parous with normal menstrual history. The lesion was symptomless.

The incidence of leiomyoma was 8.2% and it did not show any correlation with duration of menopause or endometrial pattern. Four of these patients were parous.

There were 6 cases of ovarian tumours, giving an incidence of 9.83%. Age of the patients varied from 50 to 65 years and they were 3 to 16 years postmenopausal. The type of tumours were, cystadenoma-1, pseudonucinous cystadenoma-1, dermoid-3, and adenocarcinoma ovary-1.

Medial calcification of vessels or Monckeberg's sclerosis was found in 25 cases (40.9%). The frequency increased with age of the patients and duration of menopause. This is a type of arteriosclerosis which is considered a senile degenerative change with no correlation to hypertension. Although visceral arteries are not involved, typical examples are found in uteri and ovaries in old persons.

Conclusion

During early menopause proliferative endometria become atrophic and later more and more atrophic endometria become cystic as number of years postmenopausal increase.

Spontaneous endometrial hyperplasia is an abnormal finding in postmenopausal women.

In normal postmenopausal women there is no appreciable amount of oestrogen, although they may produce small amounts for several years after cessation of menstruation, but the quantity is far below the levels associated with proliferation of genital tissues.

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References

1. Butler, H. K., Doclerty, M. B. and Randall, L. M.: Am. J. Obst. & Gynec., **86**: 433, 1963.
2. McBride, J. M.: J. Obst. & Gynec. Brit. Emp., **61**: 691, 1954.
3. McBride, J. M.: In Modern trends in Obstetrics and Gynaecology, ed. Kenneth Bowes 2nd. ed., 1955, p. 335-45, Butterworth & Co. London.
4. Novak, E. and Richardson, E. H.: Am. J. Obst. & Gynec., **42**: 564, 1941.
5. Novak, E.: Am. J. Obst. & Gynec., **71**: 1312, 1956.
6. Parks, R. D., Scheerer, P. P. and Greene, R. R.: Surg. Gynec. & Obst., **106**: 413, 1958.
7. Smith, G. V.: New. Eng. J. Med., **225**: 608, 1941.
8. Smith, G. V. and Emerson, K. Jr.: Proc. Soc. Exper. Biol. Med., **85**: 264, 1954.
9. Speert, H.: Surg. Gynec. & Obst., **89**: 551, 1949.