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INCREASED OESTROGEN ACTIVITY ASSOCIATED WITH POSTMENOPAUSAL BLEEDING

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IN many healthy post-menopausal women there is evidence that some oestrogenic activity still persists. Vaginal smears taken after the menopause show wide variations in oestrogen activity which cannot be accurately correlated with the number of years which have elapsed since the menopause. Wren and Frampton (1963) analyzed 500 postmenopausal vaginal smears by years since the menopause and showed that between 64 and 87 per cent had a cornification index of 4 or below. The cornification index is the number of cells with pyknotic nuclei expressed as a percentage of all the superficial and intermediate squamous cells present. Wachtel (1956) stated that this index varied from 0–10 in normal postmenopausal women, and on the average was about 2.

The estimation of oestrogen in the blood is still in the experimental stage; however, urinary oestriol determinations are available and can supply some information about oestrogen turnover.

METHODS AND MATERIALS

The oestrogen status of 100 hospital patients who were at least one year past the menopause has been assessed. Forty-three of the women were admitted to hospital for investigation of postmenopausal bleeding and the remaining 57 were admitted for other reasons.

On admission to hospital a complete history was obtained with particular reference to any recent course of hormone treatment. After the physical examination, a vaginal smear was obtained from the posterior fornix and examined by the author after staining with the Papanicolaou stain. Twenty-four hour collections of urine were made and the oestriol content was measured by the method of Brown (1955) and Brown *et al.* (1957).

The majority of the patients required examination under anaesthesia and further procedures. An attempt to obtain endometrium from the uterine cavity was made in the majority of the patients. A few patients required other proce-

TABLE I

Patients Without Postmenopausal Bleeding

Final Diagnosis	No. of Cases	Cornification Index				Urinary Oestriol Excretion μg. per 24 hours		
		0–5	6–10	11–15	16–20	0–10	11–20	21–30
Prolapse	46	36	8	2	—	45	1	—
Vaginal discharge	5	4	1	—	—	4	1	—
Ovarian cyst	2	1	1	—	—	1	1	—
Carcinoma of sigmoid ..	1	1	—	—	—	1	—	—
Carcinoma of bladder ..	1	1	—	—	—	1	—	—
Carcinoma of ovary ..	1	1	—	—	—	1	—	—
Rectus sheath haematoma ..	1	—	1	—	—	1	—	—
Totals	57	44	11	2	—	54	3	—

C.I.>10 in 3·5 per cent of cases.

TABLE II

Patients With Postmenopausal Bleeding

Final Diagnosis	No. of Cases	Cornification Index				Urinary Oestriol Excretion μg. per 24 hours		
		0–5	6–10	11–15	16–20	0–10	11–20	21–30
Chronic cervicitis	7	1	1	3	2	—	—	—
Cervical polyp	7	2	—	4	1	5	2	—
Metropathia haemorrhagica	3	—	—	3	—	1	—	1
Endometrial polyp (simple)	2	—	1	1	—	2	—	—
Endometrial polyp: atypical hyperplasia	1	—	—	1	—	1	—	—
Carcinoma of the cervix ..	1	—	—	1	—	—	1	—
Carcinoma of the bladder ..	1	—	1	—	—	1	—	—
Fibroids	1	—	1	—	—	1	—	—
Vaginal cyst	1	—	1	—	—	1	—	—
No cause found	19	5	2	7	5	13	5	1
Totals	43	8	7	20	8	25	8	2

C.I. > 10 in 65 per cent of cases.

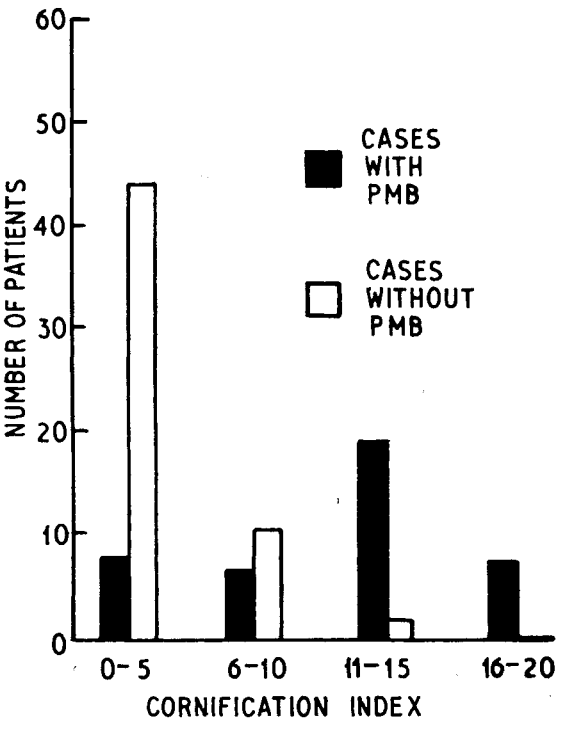

FIG. 1

Cornification index in relation to postmenopausal bleeding (PMB).

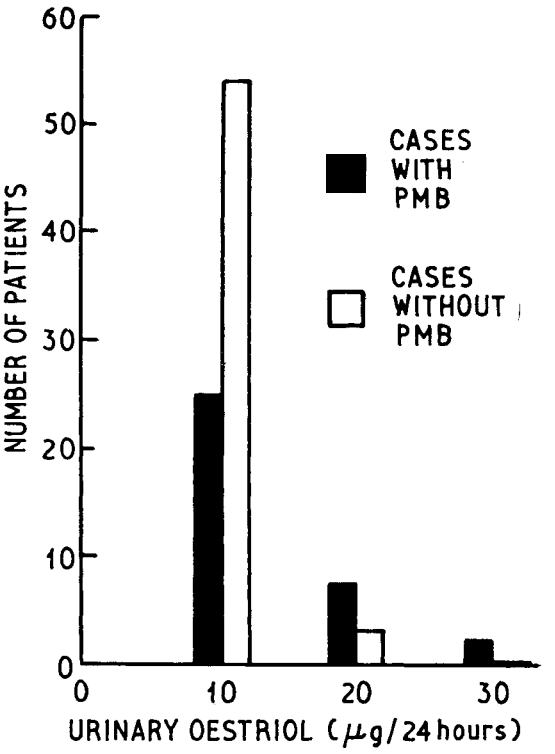

FIG. 2

Oestriol excretion in relation to postmenopausal bleeding (PMB).

dures such as cystoscopy and sigmoidoscopy. All the patients with prolapse had a repair operation with or without removal of the uterus.

Results

The first column of Table I gives the reasons for admission to hospital in the group of 57 patients without post-menopausal bleeding. Most of these were admitted for an operation for prolapse. Table II shows the final diagnosis reached in the group of 43 patients with post-menopausal bleeding. In 24 of the 43 patients a pathological diagnosis of the cause of bleeding was possible, but in the remaining 19 cases no cause was found.

Two separate estimations of the cornification index were made for each patient and these and the urinary oestriol levels are given for the group of patients without post-menopausal bleeding in Table I. Only 3·5 per cent of this group (2 out of 57 patients) had a cornification index in excess of 10, and only 3 patients had more than 10 μg. of oestriol in a 24-hour specimen of urine.

In the group with post-menopausal bleeding (Table II), 28 of the 43 patients had a cornification index exceeding 10 (65 per cent). Among the 19 patients in whom no cause was found for the bleeding, 12 had a cornification index of more than 10. Twenty-five out of 35 urinary oestriol determinations in this group did not exceed 10 μg. of oestriol in a 24-hour specimen of urine.

The results in the two groups of patients are illustrated in Figures 1 and 2.

Discussion

Although many women show evidence of oestrogen activity for some years after the menopause the results obtained suggested that more oestrogen activity was present in a group of women presenting with the symptom of post-menopausal bleeding whatever its cause. A few of the patients may have used an oestrogen preparation on some occasion after the menopause but the endocrine assessment was made several weeks after any such preparation had been used. Estimation of the cornification index is a sensitive method for assessing the vaginal response to oestrogen, and 28 of the 43 patients with bleeding had an index ranging from 11 to 20, whereas only 2 of the 57 patients without bleeding showed such a response.

Little can probably be deduced from the urinary oestriol estimations. The majority of patients in each group had urinary oestriol levels between 0 and 10 μg. per 24 hours although 10 of the 43 patients with bleeding (23 per cent) had levels greater than 11 μg. per 24 hours compared with 3 of the 57 patients without bleeding (5·3 per cent).

Conclusion

Patients presenting with post-menopausal bleeding, regardless of the underlying pathology, show evidence of increased oestrogen activity in vaginal smears.

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