DYSFUNCTIONAL UTERINE BLEEDING

A Clinico-Pathological Study

by

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Abnormal uterine bleeding is one of the commonest conditions for which patients seek advice in the gynaecological out-patients department. On account of its doubtful aetiology and varied interpretation it is designated by several names i.e. functional uterine haemorrhage, dysfunctional uterine bleeding, abnormal uterine haemorrhage etc. by different workers. This term is usually applied to cases with abnormal uterine bleeding where no palpable lesion of the genital organs can be discovered on careful examination. Te Linde (1962) defines it as "Pathological bleeding from the uterus, unexplained on the basis of inflammation, neoplasm or pregnancy within the uterus." Gynaecological admissions in the Irwin Hospital from January 1962 to June 1963 totalled 2096. Of these 490 cases were admitted as cases of dysfunctional uterine haemorrhage i.e. 23.8%. Lazarus (1961) working in the K. G. Hospital, Visakhapatnam, found an incidence of 16% which is much less than ours. Till the end of the last century the cause of the abnormal uterine haemorrhage was thought to be chronic inflammation, Recamer (1850) Scanzoni (1863) Mathew Duncan (1879). The monumental work of Hitchmann and Adler in 1907 showed that the endometrium is a cyclic tissue undergoing biphasic changes. Immediately following this, many gynaecologists assumed that functional bleeding was invariably associated with endometrial hyperplasia, Schroeder (1919), Novak (1920) (1924), Graves (1930). In 1932 Taylor drew the attention of many workers to the association between glandular hyperplasia and adenocarcinoma of the body of the uterus.

Out of a total of 490 cases, 127 patients were selected at random for a detailed study. Out of these 10 cases showed organic lesions on histopathological study and were, therefore, excluded from the above series.

Products of conception	..	7 cases
Tuberculous endometritis	..	2 cases
Intraepithelial cancer of the cervix	..	1 case

Thus only 117 cases form the subject of this detailed investigation.

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Looking at Table I we find that the maximum number of cases occur in the age group 41 to 50 years i.e. 32.5%. The next common is 31 to 40 years. Sutherland found the highest incidence in 41 to 50 years while Macgregor et al. found it in 45 to 49 years; 14.5% of the cases in this series were below 20 years, while Sutherland reported 30% incidence for the same age group. This discrepancy may be explained by the comparatively earlier age at marriage in our country. The age at menarche did not show any variation when compared with normal women.

TABLE I

Showing the Distribution of Patients in different age groups

Age groups	No. of patients	Percentage
10-20 years	17	14.5%
21-30 years	24	20.5%
31-40 years	33	28.2%
51 and above ..	5	4.3%

Associated factors: Parity did not appear to have a causal relationship as 18% of the women were nulliparous. In 17.2% of the patients the abnormal bleeding followed an abortion or a delivery. Operations on the fallopian tubes were met with in 7.6% of the cases; 13.3 of the cases complained of profuse or prolonged loss of blood during menstruation either from catamenia or soon after it. High blood pressure was recorded in four cases above 40 years. 150/90, 156/100, 170/110 and 182/120 and in one case below 40 years 186/110, thus showing that hypertension is not a cause of abnormal uterine bleeding. Haemoglobin percentage varied between 1.5 to 7 gms. in 26 cases or 22% showing that severe degrees of anaemia are quite common in this condition. Total and differential leucocyte count, bleeding, clotting, and platelet count were within normal limits in all cases except one where bleeding time was prolonged. Hess's test was positive and platelet count was only 6,300% cmm. She had been treated with repeated D & C before admission and was given blood transfusion and 'Enovid' continuously for 3 months before the condition was diagnosed.

Obesity: Record of height and weight was available in 102 cases and the ratio was compared with the table for average weight for that particular age; 24% of the cases in this series were obese, wth 21 over 20 lbs. and 7 over 40 lbs. of the average. Way (1954) recorded a similar figure of 27% in his series. Fasting blood sugar estimations with standard glucose tolerance tests were carried out in 55 cases above 35 years and the readings were interpreted according to Fajans and Conm (1959); 5 cases showed a raised fasting sugar (normal 68-94 mgms.%). Of these 3 showed a frankly diabetic curve and the fourth was a prediabetic. One patient in spite of a fasting sugar of 110 mgms%. had a normal glucose tolerance test; 3 of the above 4 cases also suffered from obesity and hypertension while the prediabetic was only obese.

Endometrial Patterns: These were studied in 111 cases. In the majority of cases curettage was performed when the patient was admitted with a prolonged and heavy bout of bleeding regardless of whether the bleed-

TABLE II

Showing the Distribution of Patients with Different Endometrial Patterns

Endometrial pattern	No. of cases		Percentage
Early) priliferative	21)		
Mid)	11)	46	41.5%
Late)	14)		
Cystic glandular-hyperplasia	32		28.8%
Adenomatous hyperplasia	2		1.8%
Atrophic endometrium	2		1.8%
Early) secretory ..	11)		
Late 3	14)	25	22.5%
Irregular shedding ..	2		1.8%
Irregular ripening ..	2		1.8%

ing was cyclic or acylic. Premenstrual curettage was possible in only 15 cases of menorrhagia. This is important as the endometrial picture is largely dependent on the phase of bleeding during which it is studied. The proliferative and secretory endometrium formed 64% of the total. The incidence for the proliferative phase 41.54% and that for secretory is 22.5%. Anovulatory endometrium was more than twice as common as secretory endometrium Fig. 1. These figures are in agreement with Munnell and Flick and Jacob et al. while Shah and Dave quote much lower figures i.e. 26.6% and 10% respectively. The normal endometrium was further sub-grouped into early, mid and late according to Noyes Hertig and Rock, but this subdivision did not throw any light on the type or cause of bleeding. Fig. 2. Further glycogen and glycoproteins were estimated by the Periodic Acid Schiff reaction. Fig. 3 and 4.

From Table III it can be seen that the distribution of glycogen is not disturbed in cases of abnormal uterine bleeding. This confirms the findings of McKay et al (1956) and V. Shetty (1959). Fig. 5 and 6.

TABLES III & IV

Endometrial pattern	No. of cases	Cornified cell percentage range	Average of the percentage of Cornified cells	Glycogen in Cytoplasm
Early proliferative ..	11	25% - 68%	47%	Nil
Mid-proliferative ..	10	31% - 67%	53%	Trace — +
Late-proliferative ..	13	30% - 71%	52%	+
Proliferative cystic hyperplasia	15	31% - 73%	58%	Only traces in 11 patients.
Adenomatous hyperplasia	2	43%, 63%		Traces.
Atrophic	2	17%, 35%		Traces.
Early secretory ..	6	12% - 18%	15%	+ or ++
	1	25%		
Late secretory ..	6	12% - 17%	14%	+++
	2	22%, 26%		
Irregular shedding ..	1	13%		+

The glycogen was detected in stroma and lumina in secretory phase only.

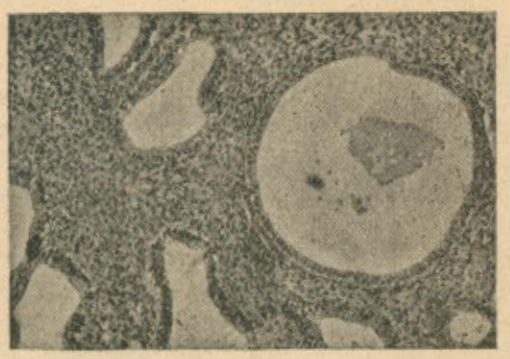

Fig. 1

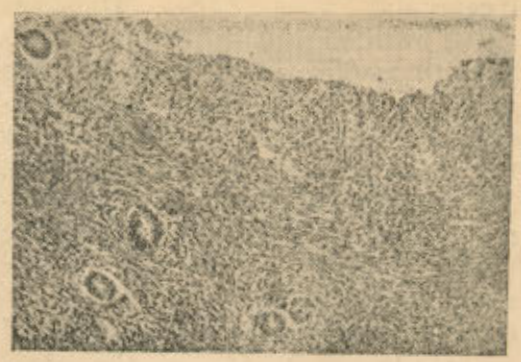

Fig. 4

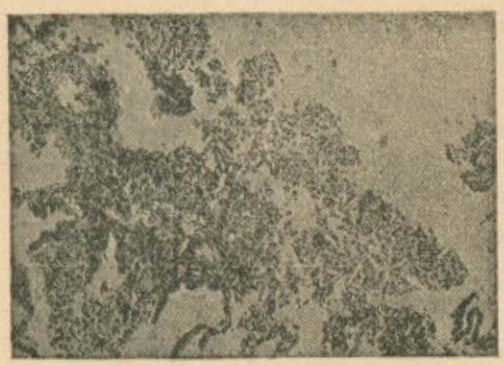

Fig. 2

Fig. 5

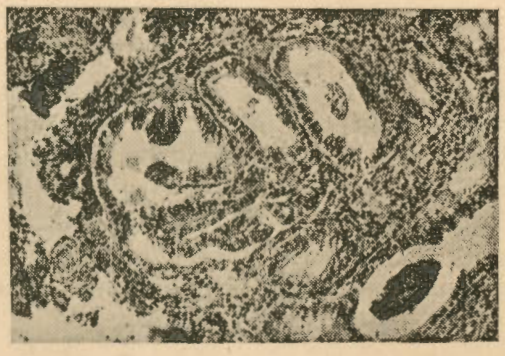

Fig. 3

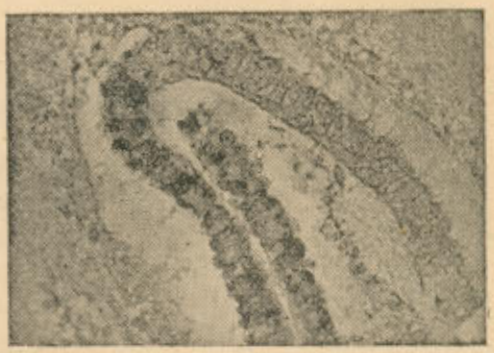

Fig. 6

Correlating age with the type of endometrium

It was found that anovulatory bleeding is common below 20 (84%) while above 30 years secretory pattern is most prevalent (55%). The incidence of hyperplastic cyclic pattern and adenomatous hyperplasia is 29.7% and 1.8% in the present series. This is in agreement with

Keene and Payne (23%). Hamblen (28%) while Trant and Kuder (58%) Jone et al (66%) and Shah & Dave (58.6%) found a much higher incidence. Atrophic endometrium was found in 2 cases both above 50 years. The proliferative pattern was commonly seen with irregular or acyclic bleeding (62.8%) while with cystic glandular hyperplasia bouts of bleeding were interspersed with periods of amenorrhoea. 65.4% of the cases with cyclic bleeding presented an ovulatory picture. Now correlating endometrial picture with obesity and distrubed carbohydrate metabolism, we found that the incidence of obesity in the hyperplasia group was 36% which is higher than the incidence of 27% in normal women (Way 1954).

Vaginal Cytology: The cytological picture was next studied with a view to see whether the number of cornified cells could be correlated with the type of endometrium and whether the cytological picture would be helpful in diagnosis and follow up of this condition. Tablet V shows the marked variation in the percentage of cornified cells i.e. in proliferative endometrium the range is between 25% to 71% with an average of 51.5%. In the hyperplastic group the average is 58% with a range from 31 to 73% which is comparable to De Allende (40-80%). The considerable overlap in the 2 conditions is quite obvious. On the other hand in the secretory patterns the range in between 12-26% with an average of

TABLE V

Type of endometrium	No. of cases	Diabetic and Prediabetic	Percentage
Proliferative atrophic ..	25	1	4%
Cystic glandular hyperplasia	20	3	15%
Secretory	10	nil	nil

This table further shows 15% disturbed carbohydrate metabolism in the hyperplasia group 4% in the proliferative and none in the secretory group. Benjamin (1960) found an 84% incidence in the benign hyperplasia group.

14.5%. The only conclusion one can draw from here is that a cornification index below 25 usually means an ovulatory pattern while higher readings will probably be an ovulatory pattern. The atrophic group has a cornification index close to that of the

TABLE VI

Endometrial Pattern	Total no. of cases	Immediate improvement	Cured	Percentage cured
Proliferative	40	34	21	52.5
Ovulatory	25	18	9	37.5
Hyperplasia	25	14	6	24
Atrophic	2	1	—	—

secretory phase but the smear shows many basal cells. Peter Stoll (1962) taking endometrial biopsies and vaginal smears simultaneously obtained congruent results in 81.3% of the cases with ovulatory endometrium. In the present series in 18.3% of the cases the vaginal smear could not be correlated with the endometrial picture. In the atrophic endometrium the cytological picture could only be correlated in one out of the 2 cases. In conclusion vaginal cytology has its limitations but is a safe and easy procedure and can be repeated as often as required.

Treatment: 111 cases were subjected to curettage and of these 72.1% stopped bleeding after curettage thus showing that curettage can act as a haemostatic in 3 out of 4 cases. On follow-up 43 cases out of 80 remained symptom free from 2 to 6 months while 20 cases experienced a recurrence of symptoms. The rest, 17 cases, did not come for follow up. Thus the over all cure rate was 41.5%. The maximum cure rate was observed in the age group 21-40 years.

The maximum cure rate was seen in cases with proliferative phase of endometrium while it was minimum in patients with cystic glandular hyperplasia. Patients with atrophic endometrium, irregular shedding and irregular ripening failed to improve after curettage.

Hysterectomy: This was carried out in 30 patients who were round about 40 years and above. The commonest endometrial picture met with in these cases was cystic glandular hyperplasia i.e. 46.63% and in both cases with atrophic endometrium surgery was resorted to. Out of two cases of adenomatous hyperplasia, hysterectomy was performed in only one case and here the endometrial picture showed a hyperplastic pattern. In four cases with secretory endometrium hysterectomy had to be performed as curettage did not produce any relief in the menorrhagia and the patients did not desire hormonal therapy. The endometrium showed a proliferative pattern in 8 cases (26.6%). In thirty uteri examined in detail associated minimal pathology was found in 11 cases or 36.6%.

Fibromyomata	..	5 cases
Fibromyomata with adenomyosis	..	2 cases
Adenomyosis	..	4 cases

As in most of these cases there were only seedling fibroids and the adenomyosis was not a marked feature, it is difficult to assess what their role was on the type and frequency of bleeding, since these lesions would have probably remained undiagnosed if detailed histopathological study had been undertaken.

Thirty-five cases were treated with the oral progestogen 'Enovid' and form the subject of another communication.

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