

Menstrual irregularities

by

Y. Salmon, MB, MRCOG.

KANDANG KERBAU HOSPITAL, SINGAPORE.

Whether organic or functional, menstrual irregularities present a diagnostic problem to the doctor, a handicap to the patient and often an economic liability to society. It is therefore a very important subject.

Physiology

To quote Max Bloom, "Sir Walter Langdon Brown described the endocrine system as an endocrine orchestra, the conductor of which is the pituitary gland, and the composer the hypothalamus. One should add that the thyroid gland occupies the position of the first violin" and I would further say that the ovary is the temperamental soprano, who plays it up at times. I leave you, who are musically minded, to fit in the other members of the endocrine orchestra.

The menstrual cycle is thus under pituitary-ovarian regulation, and superimposed on this cycle are the actions of the Thyroid and Adrenal glands and the Pancreas. This delicate control of the menstrual cycle can easily be upset either through the endocrine system or through the autonomic nerve supply to the uterine vessels.

The development of the menstrual function during puberty and its involution during the menopause have been described as a "staircase" process, manifested by scanty flow, missed periods or episodes of amenorrhoea. Here again, the changing endocrine and vascular balance is often thrown out of gear, resulting in menorrhagia or metrorrhagia.

Manifestations

Menstrual irregularities may present in two large groups:—

- | | | |
|--------------------|-----------|---------------------|
| (A) Reduced flow | } ————— { | Duration
Amount. |
| (B) Excessive flow | | |

What is the average duration and amount of the menstrual flow? The normal period lasts about 3 to 5 days, with little or no clots. Gross variations from these are abnormal, but it is often difficult to assess when the dividing line has been over-stepped. Some women complain if their periods are half a day over 3 to 4 days, while others bleed for months without complaint. The important thing is to note any change from that particular patient's norm.

(A) Reduced Flow

The menstrual flow may be reduced in amount (Hypomenorrhoea) or infrequent (Oligomenorrhoea) or entirely absent (Amenorrhoea).

Hypomenorrhoea

In most cases, scanty menstruation with an ovulatory cycle is constitutional and normal for that particular patient. It is not incompatible with health and fertility, and therefore requires no treatment. Hypomenorrhoea, with anovulatory cycles, may result from nervous and emotional factors *e.g.* pseudocyesis, occasionally from endocrine disturbances, and sometimes from a decreased bleeding surface *e.g.* after myomectomy. Stimulation with cyclical oestrogen therapy for about three months may help.

Oligomenorrhoea

This is a similar symptom to Amenorrhoea and should be considered together with it.

Amenorrhoea

This, in itself, is a very wide subject and I have dealt fairly extensively with it in a previous lecture. I shall, therefore, pass over it this time.

(B) Excessive Flow

This may be subdivided into two groups:—

- | | | |
|---------------|---|---------|
| 1. Organic | } | Regular |
| 2. Functional | | |

Various terms are used, such as:—

Menorrhagia = heavy, regular periods

Metrorrhagia = heavy, irregular periods

Polymenorrhoea = frequent periods

Polymenorrhagia = frequent and heavy periods.

Etiology of excessive flow.

(1) General Systemic Disease

Congestive cardiac failure may be a cause, as may *thrombocytopenic purpura* be too. *Anaemia* is an important cause of menorrhagia; this results in a vicious circle, the menorrhagia aggravating the anaemia.

Hypothyroidism can lead to menorrhagia. Deisher (1950) describes a well-known form of mild hypothyroidism following pregnancy and labour. The most conspicuous symptom is heavy menstrual loss, sometimes very profuse, without any uterine condition to account for it. Frequently a diagnosis of "subinvolution of the uterus is made, whereas the probable condition is "superinvolution" of the thyroid. Other symptoms are gain in weight, constant fatigue, depression and headache. The B.M.R. is below normal, pulse is slow and skin structures show the characteristic features of hypothyroidism. However, it is not certain how far the thyroid deficiency is a distinct cause of bleeding, or merely due to a cause common to both it and pregnancy.

(2) Iatrogenic menorrhagia

This is due to *prolonged oestrogen therapy*. It may be seen in cases treated for menopausal symptoms, and is especially dangerous as the spectre of genital cancer is always hovering in the background. Some vitamin preparations too contain oestrogen and androgen mixtures.

Ointments, containing oestrogen, for use in senile vaginitis may also cause bleeding.

(3) Local pelvic lesions

Abnormal pregnancy states, namely abortions, ectopic gestations and retained products of conception, are most common causes during the reproductive age.

Benign conditions of the genital tract have also to be considered. These include uterine fibroids, mucous and fibroid polypi, adenomyosis, and cervical erosions. Forgotten vaginal pessaries causing ulceration, or forgotten swabs after delivery or vaginal operations, leading to vaginitis, can cause abnormal uterine bleeding.

Trichomonad, monilial or senile vaginitis may be etiological factors.

A case of menorrhagia cleared up, after I had removed a contraceptive ring from within the uterus.

Genital tuberculosis and other forms of *Pelvic Inflammatory Disease* are often factors in excessive uterine bleeding.

Uterine cancer, of the body or cervix, cause irregular uterine bleeding.

Ovarian Tumours, especially the malignant and graunlosa-cell tumours, may be causes. Endometriosis and even torsion of benign ovarian cysts may affect the menstrual cycle towards menorrhagia.

Tubal Ligation is followed by menorrhagia in some cases. Is the cause a disturbance of ovario-uterine blood supply?

Finally, *tubal carcinoma* has to be considered.

(4) Dysfunctional Uterine Bleeding

This is abnormal uterine bleeding caused by a disturbance of normal function, whether nervous or endocrine, in the absence of any demonstrable pathology. The exact etiology of this type of bleeding is not known, but there seems to be some disturbance of the hypothalamo-pituitary-ovarian axis.

Here let me emphasize the importance of mind over matter, and draw attention to the *stress syndrome*. Emotional factors e.g. anger, sorrow, fright can so alter the control of the higher centres of the brain over the uterus,

either through endocrine influence over the endometrium or through nervous influence of the uterine vessels, as to cause either amenorrhoea or menorrhagia. The "ebb and flow" of the menstrual periods are often related to the "ups and downs" of life.

Management of Excessive Flow

(A) Investigations

It is necessary to establish the diagnosis before treatment. A helpful guide to remember is that below 20 years the cause is usually functional, during the reproductive years disordered pregnancy state may be a factor, while after 40 years malignancy must first be excluded.

(1) History

Age, parity, general health, emotions and details of the menstrual history and associated symptoms are enquired into.

(2) Examination

General and pelvic examinations are made and signs of anaemia detected.

(3) Special investigations

These include the following:—

- a) Haemoglobin
- b) Examination under anaesthesia and Dilatation and Curettage just before menstruation, or after several days of bleeding to detect irregular shedding of the endometrium.
- c) Cytological studies as a double check against cancer in the pre- and menopausal years, and also to follow the results of therapy.

If there is no response to D & C and, if necessary, appropriate hormones, *further detailed investigations* may be necessary, viz.:—

- a) Full blood investigations, including bleeding and clotting times and platelet count.
- b) B.M.R. and blood cholesterol estimation

c) X-ray chest

d) Repeat D. & C. Endometrial polypi may often escape detection.

e) Cytology

(B) Definitive Treatment

Organic causes of bleeding are treated accordingly.

Principles in treatment of Dysfunctional uterine bleeding:—

1. In young patients—conservative treatment is usual.
2. Over 40 years—prompt and radical treatment is necessary.
3. In true functional bleeding, Jeffcoate states that treatment aims at *controlling symptoms*, and the cure is usually spontaneous. He further emphasizes that it is noteworthy that, with almost all forms of treatment, an almost identical cure rate is obtained for each age group: 80% for puberty cases, 50% for maturity cases and 30% for premenopausal cases. He suggests that there is little doubt that the same figures obtain for the spontaneous cure rate and it is difficult not to conclude that nearly all treatments tide the patient over a temporary upset, the ultimate cure being unrelated to the particular type of treatment.

(1) General Measures

These include rest in bed and sedatives during the bleeding phase. Anaemia is treated and blood transfusion may be necessary. In between bleeding episodes, active exercises and regular bowel habits are advised.

Long and Simmons report on the remarkable results of treatment of menstrual symptoms by a diet of high protein and low fat, with Vit. B and crude liver extract.

Reassurance and psychotherapy have an important role in treatment.

(2) Drugs

Dessicated thyroid gr. 2/3 daily may be of help in cases of latent hypothyroidism.

(3) Hormone therapy

Bishop described 3 blood estrogen levels:—

- i) Threshold bleeding level.
- ii) Suprathreshold amenorrhoeic level (oestrogen-progesterone haemostasis)
- iii) Subthreshold amenorrhoeic level (androgen haemostasis)

There are thus 3 main groups of hormones in use for haemostasis.

(a) Oestrogens

These raise the blood oestrogen level to the suprathreshold amenorrhoeic level, and is of use in adolescent girls and women of child-bearing age.

In *severe* bleeding, Stilboestrol 5 mgm (or 0.25 mgm. Ethinyl Oestradiol) 4 hrly. is administered until bleeding ceases, followed by Stilboestrol 5 mgm. daily for 20 days. Further courses with gradually diminishing doses are then given. With *less severe* bleeding, smaller doses are used.

(b) Progestogens

These have revolutionised hormone therapy of menstrual irregularities. The principle of progestogen therapy is the same as that of oestrogen, *viz.* to raise blood levels of the steroid to a point capable of preventing further disintegration of the bleeding endometrium and to cause rapid exfoliation of the superficial layers on withdrawal of the hormone—a *medical curettage*. It acts only on an oestrogen—primed endometrium.

Of the many progestogens in use, mention may be made of the following:—

- i) *Progesterone*: It is less effective than oestrogen for rapid haemostasis, but is likely to give more lasting results.

Dose:—Intramuscular progesterone 25 mgm. daily for 5 days.

- ii) *Proluton-Depot* (17 α -hydroxyprogesterone-capronate): It is too slowly absorbed for rapid haemostasis, but is of use in attaining normal cyclic periods.

Dose:—Single monthly injections of 250 mgm. i/m on 20th day of the cycle for 3 months.

- iii) 19—*Nortestosterone derivatives*: These preparations have a marked progestational effect and can in most cases replace progestogens given by injection.

The drugs commonly used are:—

- a) Norethynodrel (Enavid)
- b) Norethisterone (Primolut-N or Norlutin)
Dose:—In menorrhagia, Enavid (or Norlutin) 10-15 mgm. daily for 10 days from Day 15 of cycle, for 3 courses.

In metrorrhagia, Enavid (or Norlutin) 10-15 mgm. daily for 20 days from Day 5 of bleeding, for 3 courses.

In an emergency with profuse bleeding, larger doses, 20 mgm. daily for 10 days, will stop the bleeding. Then cyclical control is established with lesser doses for 3 courses.

Other progestogens available are:—

Norethisterone Acetate (Norlutin-A)

Norethisterone Acetate & Oestrogen (Norlestrin)

Secrosteron (Dimethisterone)

Gestanon (Allylestrenol)

Duphaston (Isopregnenone)

Metrulen & Metrulen-M (Ethinodiol diacetate + Mestranol)

However, with such a wide range of progestogens available, it is important to become familiar with all aspects of one or two hormones and so put them to best use.

(c) Androgens

This hormone is well suited for use in dysfunctional premenopausal bleeding, because it may hasten involution of the ovaries and endometrium. Kupperman advocates combined Progesterone and Androgen treatment, the latter producing haemostasis while the former leads to desquamation of the hyperplastic endometrium.

Dose:—I.M. Progesterone 25 mgm. +
I.M. Testosterone propionate
25 mgm. daily for 5 days.

If the bleeding is not heavy, oral Methyl Testosterone 10 mgm. daily in the first half of the menstrual cycle is given, for two or three cycles. Treatment is discontinued, if any virilising signs appear.

Gonadotrophins are of no value in treating menorrhagia.

(4) Surgery

Surgery is the final step in the management of uterine bleeding. Hysterectomy, either abdominal or vaginal, may be necessary in patients over 40 years, where the haemorrhage does not respond to D & C and hormone therapy.

(5) Radiotherapy

Intrauterine radium or deep X-rays to the ovaries may be best in poor surgical risks, but should be avoided in other cases. A diagnostic D & C is done first to exclude malignancy.

Conclusion

The causes of menstrual irregularities, although we "probe and pry", are often obscure; nevertheless, a careful search for the cause must be made in every case. In treatment,

hormones, especially progestogens, have revolutionised therapy—let them be our slaves and not our masters, if we would use them wisely.

References

1. Brown, Sir W.L.—as quoted in "Symposium on Enavid," Medical Proceedings, Johannesburg, 1963, p. 26.
2. Jeffcoate, T.N.A.—Principles of Gynaecology, Butterworths, 1957.
3. Jeffcoate, T.N.A. as quoted in "Symposium on Enavid," 1963 p. 44.
4. Deisher J. B. Rocky Mountain Med. J., 1950, 47, 681.
5. Long, R.S. and Simmons E.E., Arch, Int. Med. 1951, 88, 762.
6. Bishop, P.M.E., Gynaecological Endocrinology, Livingstone, 1951, p. 10.
7. Kupperman H.F. as quoted in Gynaecologic Endocrinology, by Riley, Hoeber Inc., 1959, p. 116.
8. Mazer and Israel—Menstrual Disorders and Sterility, Hoeber Inc. 1959.