MEDICAL PRACTICE

*Gynaecology in General Practice***Dysfunctional Bleeding**

E. COPE

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Dysfunctional uterine bleeding is an omnibus term which includes the most common causes of bleeding during the reproductive phase and the diagnosis depends on the exclusion of general and local disease. There are two broad categories of this condition. In one there is a failure of ovulation and in the other ovulation occurs. Curiously, the latter is the more intractable, particularly in women between the ages of 30 and 40, who are heavily burdened with work and family problems including overdemanding and inconsiderate husbands.

ANOVULAR CYCLES

Anovular cycles are most common during the postpubertal and perimenopausal years but may occur at any time in the reproductive phase. Most women probably have anovular cycles from time to time, and in some with regular periods the anovulatory nature of their cycles is discovered only during investigation for infertility.

Anovular cycles may, however, be associated with abnormal bleeding of various patterns, which is always painless unless associated with a definite disease such as endometriosis. Fundamentally there is a failure of the luteinizing hormone surge necessary for ovulation, which in turn is due to a failure in production of the luteinizing hormone releasing factor (LRF).

Oestrogen is produced from the unruptured follicle in amounts dependent on the level of circulating gonadotrophins. The endometrium continues to build up under the influence of unopposed oestrogen activity to a thickness that can no longer be sustained by its blood supply. In the absence of progesterone the endometrium does not strip in the complete fashion of a normal menstrual period, but crumbles patchily, with prolonged bleeding. In some cases the level of oestrogen is relatively low and only occasionally reaches a concentration suffi-

cient to cause bleeding. The endometrium at curettage is in the proliferative phase and relatively thin. This type of bleeding is called threshold bleeding, and these patients require oestrogen as well as progesterone to produce regular cycles.

Metropathia haemorrhagica, Schroeder's syndrome, and benign cystic hyperplasia of the endometrium are synonyms for the most extreme degrees of unopposed oestrogen activity. Macroscopically the endometrium looks thick and sometimes polypoid, and on histological examination the dilated tubules appear as rounded cystic spaces of various diameter. Clinically there is a preliminary period of amenorrhoea lasting up to ten weeks, and as the uterine muscle also hypertrophies the diagnosis of pregnancy must be excluded. The condition is most frequent at about the time of the menopause but it is also fairly common at puberty, and the subsequent haemorrhage may be severe enough to necessitate transfusion.

At the other end of the scale of anovulatory menstruation the cycles may be infrequent and scanty and when extreme gives rise to the Stein-Leventhal syndrome. The ovary normally produces androgen as well as oestrogen and progesterone. Chemically all of these are closely related and interchangeable. If the pituitary gland produces a high but varying level of luteinizing hormone the ovary produces an excess of androgen as well as oestrogen. There is no surge, ovulation fails to take place, and the ovaries become polycystic. The clinical picture of the Stein-Leventhal syndrome is variable but there is generally some obesity and hirsutism. Spontaneous cure is fairly common, and of the remainder some can be cured by wedge resection of the ovaries; the reasons for this cure are not known, but they may be psychological as almost any operation will do the trick. For patients wishing to conceive, treatment with clomiphene or human pituitary gonadotrophins are much more likely to succeed.

Hence the menstrual pattern in patients with anovular cycles varies from the extreme of the Stein-Leventhal syndrome through normal to the other extreme of cystic hyperplasia; it is of interest that both extremes are associated with increased androgen activity.¹ With increased understanding medical treatment of anovular dysfunctional bleeding is becoming increasingly diverse and probably more successful. Nevertheless, recourse to definitive surgery is still indicated in patients near the menopause who do not respond fairly quickly, as there is

United Oxford Hospitals

EDWARD COPE, M.D., F.R.C.O.G., Consultant Obstetrician and Gynaecologist

some statistical evidence that unopposed oestrogen activity at this time predisposes to carcinoma of the body of the uterus.

OVULAR DYSFUNCTIONAL BLEEDING

Ovular dysfunctional bleeding usually presents as short or hurried cycles with heavy bleeding. For some reason the Graafian follicle ripens quickly and the follicular phase is short. This pattern is seen after pregnancy or in association with pelvic congestion due to pelvic inflammatory disease. Another cause is emotional disturbance, when bleeding may be temporary, as in acute stress, or more persistent if the stress is chronic. In the former active treatment may not be required, but in the latter hormone therapy has to be combined with long-term supportive treatment. In these circumstances the woman and her family doctor may become impatient and seek a hysterectomy. If the stress is an unstated fear of pregnancy the patient may benefit remarkably. Otherwise she may well channel her symptoms into another somatic ailment and her emotional illness be aggravated by feelings of defeminization.

There are two other patterns of ovular dysfunctional bleeding. These are associated with inadequate maturation of the corpus luteum and a persistent corpus luteum. In the former there is insufficient progesterone to support the endometrium in the second half of the cycle. Spotting of blood occurs, similar to the breakthrough bleeding that occurs with patients on the contraceptive pill. When the corpus luteum persists the bleeding goes on for several days after the normal flow but is rarely heavy. Both of these patterns may occur in isolated cycles, but the former seems more likely to continue and to cause both inconvenience and infertility. The diagnosis is made by examination of the endometrium taken on the first day of menstruation, which shows incomplete progestational change. These patients respond to progestogen therapy given from the thirteenth to the twenty-sixth day of the cycle. In the case of persistent corpus luteum an endometrial biopsy taken after the main flow has ceased will show an endometrium in the early proliferative phase with patches of progestational endometrium.

Organic Disease

Because dysfunctional bleeding is common during the reproductive phase there is a tendency to treat patients with hormones without adequate investigation. Nevertheless, when clinical examination is negative and one or two irregular periods are associated with an emotional upset there is a case for withholding treatment altogether apart from iron therapy and tranquillizing drugs. If the irregularity persists further investigation is essential both to exclude disease and to establish a basis for rational hormone therapy. The following account deals with aspects of particular interest, and no attempt will be made to produce an exhaustive list of causes of bleeding from the female genital tract.

GENERAL DISEASES

Any debilitating disease may cause reduction of menstruation. Tuberculosis deserves special mention because tuberculous endometritis may be symptomless until it is revealed during the course of an investigation for infertility. Occasionally, however, tuberculosis of the uterus and appendages may cause menstrual irregularity or, if very extensive, complete amenorrhoea; on two occasions we have seen it as a cause of postmenopausal bleeding. Endometrial tuberculosis may be found only after performing repeated biopsy and inoculation of specimens into guinea pigs. In these cases it is necessary to search for the condition in other systems, including the urinary tract.

Blood dyscrasias such as acute leukaemia, thrombocytopenic

purpura, and Christmas disease may present with menorrhagia. Simple iron deficiency anaemia is a result rather than a cause of menorrhagia, though it is sometimes said that giving iron may aggravate menorrhagia. This is not our experience, and we have seen patients with dysfunctional bleeding whose periods have returned to normal when their anaemia was corrected.

Alterations in thyroid function disturb the menstrual cycle. Hyperthyroidism reduces menstruation and hypothyroidism causes menorrhagia. It was once fashionable to treat patients with menorrhagia with small doses of thyroid on the grounds that precise assessment of thyroid function was not possible and that the hormone may suppress pituitary function. This treatment is now little used. Finally mention must be made of iatrogenic disease. Occasionally the patient may deliberately mislead the doctor but perhaps more commonly abnormal bleeding is due to the administration of oestrogens for climacteric symptoms or pruritus vulvae.

LOCAL DISEASE

Pregnancy is one of the commonest causes of irregular bleeding in the reproductive phase, and in the absence of pain threatened or missed abortion and hydatidiform mole must be remembered. Ectopic pregnancy presents in many ways, but unusual or excessive pain before bleeding should always alert one to the possibility even if the period is not delayed.

Apart from tuberculosis pelvic inflammatory disease almost invariably causes a short cycle with heavy bleeding. Gonococcal infection is increasing and in all cases of vaginal discharge and pelvic inflammatory disease swabs should be taken from the cervix, urethra, and anus before antibiotics are started. Fibromyomata are the most common neoplasms and characteristically cause painless progressive menorrhagia. Irregular bleeding may be due to submucous fibroids, coexistent cystic hyperplasia of the endometrium, endometrial carcinoma, and rarely sarcomatous degeneration. Small sub mucous fibroids are sometimes missed. The irregularity may be felt at curettage, but if it is not and so-called functional menorrhagia persists hysterosalpingography with a water-soluble radio-opaque medium should be done. This investigation will also reveal uterine anomalies such as bicornuate uterus which are sometimes indicted as causing abnormal bleeding, though this is not our experience.

Cervical carcinoma of a stage that causes bleeding is clinically obvious unless it is among the 5% that arise from the endocervix and cannot be seen with the speculum. In these cases the cervix feels barrel-shaped and separate curettage will help to distinguish it from endometrial carcinoma. Oestrogenic ovarian tumours will cause irregular bleeding at any age, but non-functioning ovarian tumours rarely do—though occasionally they are associated with postmenopausal bleeding for reasons which are not understood. Urethral caruncles and cervical polyps are obvious causes of bleeding which may mask a more sinister disease and unless curettage is carried out an endometrial carcinoma may be missed.

Endometriosis is associated with abnormal menstruation in about 60% of cases, and can usually be diagnosed by its other manifestations. The excessive loss in this condition may be due to involvement of the ovaries, co-existent hyperplasia of the endometrium, or pelvic congestion with retroversion of the uterus. Retroversion of a normal uterus does not cause menstrual disturbance. On the other hand, a fixed retroverted uterus denotes co-existent disease. If this disease is endometriosis correction of the retroversion is a necessary part of conservative surgical treatment both to relieve congestion and reduce retrograde spill of menstrual debris which is a possible cause of the condition.

(This article will be concluded in next week's *B.M.J.*)

Reference

- Grattarola, R., *International Journal of Gynaecology and Obstetrics*, 1970, 8, 830.