

Abnormal Uterine Bleeding

What's the Cause?

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Abnormal uterine bleeding (AUB) accounts for 15% to 20% of gynecologic visits and is the indication for 25% of all gynecologic surgeries.^{1,2} AUB can be organic or dysfunctional (Figure 1).

The likelihood of finding an organic cause for the bleeding, particularly a local lesion, increases significantly after the mid-reproductive years. Thus, by the mid to late 30s, a careful evaluation is in order.

On the other hand, dysfunctional uterine bleeding (DUB) is usually anovulatory in origin and peaks at both extremes of reproductive life. Ovulatory DUB does occur, however, and includes mid-cycle spotting/bleeding at the time of ovulation, as well as premenstrual bleeding.

Adolescent DUB

Menstrual bleeding that is irregular in amount, duration, or frequency is very common in adolescence. The most common cause is anovulation and, characteristically, the bleeding is "unpatterned." Several other causes must also be considered (Table 1).

Jill's case

Jill, 57, has been experiencing post-menopausal bleeding for four years, with a history of recent bleeding episodes lasting four to five days. She has been taking continuous, combined hormone replacement therapy (HRT) for four years for severe hot flashes.

Concerned about the Women's Health Initiative report, she attempted to discontinue HRT twice in the last year, but restarted, as intolerable menopausal symptoms recurred each time.

Jill is obese. She also has hypertension and Type 2 diabetes.

How would you treat Jill?

AUB in reproductive-aged women

It is important to determine whether the abnormal bleeding is ovulatory DUB, where there is no underlying pathology, or whether there are organic/anatomic causes to account for the bleeding. A careful search must be undertaken to exclude the latter, as organic/anatomic causes are increasingly found in women passing through the mid-reproductive years and into the late reproductive years.

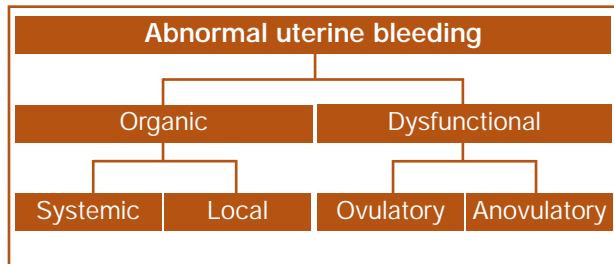


Figure 1. Schematic.

Ovulatory DUB

Ovulatory DUB falls into two categories: mid-cycle and premenstrual spotting. In the absence of excessive bleeding, the patient may present with a complaint of a change in her cycles or cycle irregularity.

Organic/anatomic causes of AUB

Having excluded ovulatory DUB during the mid-reproductive and late reproductive years, an organic/anatomic cause should be carefully sought. Pregnancy and its complications, pelvic inflammatory disease, contraceptive-associated bleeding, and endometrial lesions, as well as neoplastic and preneoplastic lesions need to be ruled out. Certainly pregnancy, sexually transmitted diseases, contraceptive-associated bleeding, and thyroid disease as causes of DUB can be readily excluded by history and laboratory endocrine testing. However, a search for anatomic causes must be undertaken carefully. Endometrial visualization and sampling assume greater importance. Endometrial biopsy, and/or aspiration, and/or curettage are needed to provide a tissue diagnosis. Endometrial cavity evaluation by sonohysterogram or hysteroscopy is usually required. Uterine fibroids, ovarian cysts/tumours, and other pelvic masses/pathology

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Table 1

Causes of adolescent DUB

1. Anovulation
2. Bleeding disorders
3. Cervicitis and sexually transmitted diseases
4. Endocrinologic causes, such as hypothyroidism, hyperthyroidism, PCOS, and other causes of hyperandrogenism, and hyperprolactinemia
5. Stress, excessive exercise, athletic amenorrhea, weight loss, anorexia, excessive weight gain
6. Organic causes, such as polyps, fibroids, carcinoma (not as common)
7. Foreign body (e.g., the forgotten tampon)

PCOS: Polycystic ovary syndrome

should be excluded by pelvic examination and, where appropriate, by pelvic and transvaginal sonography.

AUB in the perimenopausal years

Symptomatic perimenopause is often characterized by erratic menses, ranging from spotting to prolonged bleeding/flooding. These symptoms are characteristic of (relative) estrogen excess contrasted with hot flashes, vaginal dryness, and insomnia—the hallmarks of estrogen deficiency.

The unopposed estrogen resulting from the anovulatory cycles of perimenopause predisposes women to endometrial polyps, as well as to hyperplasia and carcinoma of the endometrium. At this stage in life, other organic/structural/anatomic lesions are also common, including both genital (e.g. submucosal fibroids, cervical lesions) and non-genital causes (e.g., lesions of the urinary tract and the upper and lower gastrointestinal tract), as well as systemic causes. The possibility of pregnancy must always be kept in mind.

Late post-menopausal bleeding

All post-menopausal bleeding (with the exception of withdrawal bleeding on cyclic post-menopausal HRT) is abnormal and must be investigated. Anatomic lesions are common and must be excluded. Atrophic lesions, with or without trauma, may be the cause.

How is DUB investigated and treated?

Investigation

The guiding principles for investigation are listed in Table 2.

Treatment

The appropriate treatment is determined by the patient's needs (e.g., intermittent progestin challenges, oral contraceptives, ovulation induction) and is directed at correcting the unopposed estrogen effect.

DUB that is ovulatory may or may not require treatment. The degree to which the bleeding is troublesome to the patient, as well as her therapeutic goals will help determine the appropriate course of action.

Anovulatory DUB is more likely to be problematic, both from the point of view of the patient's symptoms and the pathologic consequences. Thus, once organic lesions have been excluded, treatment should be considered.

Anovulatory periods are unpredictable, often infrequent, usually heavy when they occur, and typically void of premenstrual molimina. The appropriate treatment is determined by the patient's needs and is directed at correcting the unopposed estrogen effect.

How is the endometrial cavity evaluated?

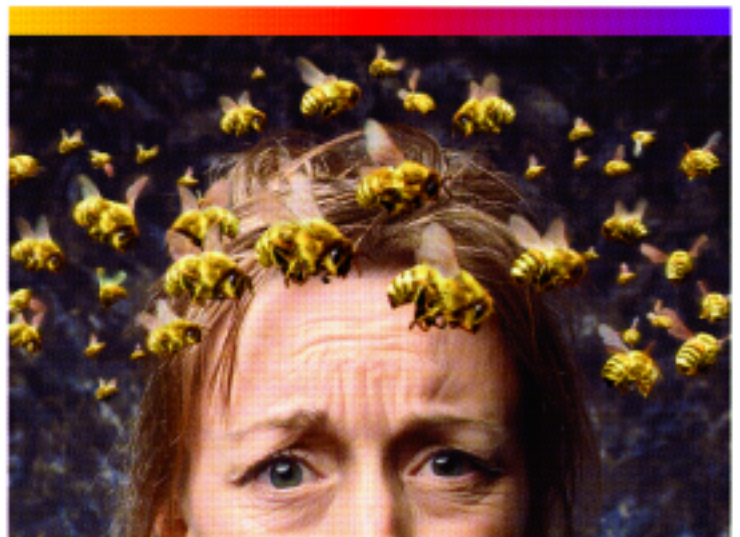
Persistent symptoms of AUB, even in the presence of normal histology at endometrial biopsy, are an indication for further evaluation.

The first step is pelvic sonography, including, transvaginal ultrasound when possible. Optimally, this is done immediately post-menstrually, by looking at the thickness and the homogeneity of the endometrium, as well as of the myometrium and the adnexae.

Diagnostic/office hysteroscopy and SIS

Further investigation of the endometrial cavity is indicated if the endometrium is particularly thick (> 4 mm to 5 mm), inhomogeneous, or indistinct. Such evaluation may be done either through office

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hysteroscopy or by saline infusion sonography (SIS). Both require a high level of expertise for maximal information yield. At SIS, it may not be possible to distinguish a polyp from a fibroid or a blood or mucus clot. However, SIS is more sensitive than hysteroscopy in diagnosing hyperplasia.

Table 2

Investigating DUB

1. Rule out pregnancy and its complications in all women of reproductive age.
2. Exclude an underlying bleeding disorder if:
 - The bleeding is long-standing;
 - It has led to 2% anemia;
 - There is a family history of heavy periods; and/or
 - There is a history of a hemorrhage after a hemostatic challenge.
3. Anovulation is common at both extremes of reproductive life and endometrial pathology (hyperplasia, polyps, carcinoma) may result from the unopposed estrogen milieu of chronic anovulation. The probability of finding an organic lesion increases with age.
4. The diagnosis and treatment of DUB in most patients can be predicted by the patient's age. Notable exceptions are:
 - Patients with PCOD, obesity, and diabetes are more likely to have significant underlying pathology and require aggressive investigation and management.
 - Recurrence or persistence of AUB, even in the presence of negative findings in an earlier investigation, warrant an even more thorough workup.
5. Premenarchal and post-menopausal bleeding (except withdrawal bleeds in women on cyclic HRT) is always abnormal and warrant thorough investigation and appropriate treatment.

DUB: Dysfunctional uterine bleeding
PCOD: Polycystic ovarian disease
AUB: Abnormal uterine bleeding
HRT: Hormone replacement therapy

A combination of SIS and endometrial biopsy is reported to have a sensitivity of 95% to 96.2% and a specificity of 65% to 98% for abnormal tissue.

Operative hysteroscopy

This procedure is considered by most to be the gold standard for the evaluation of AUB. It allows not only diagnosis, but also definitive treatment of endometrial cavity lesions, including polyps, submucosal fibroids, and adhesions. However, the cost and the fact that it is a surgical procedure requiring anesthesia are clearly detractors.

MRI


In general, magnetic resonance imaging (MRI) is excellent in localizing pelvic pathology and estimating lesion size, and has a sensitivity and specificity higher than transvesical sonography, SIS, or hysteroscopy. MRI is particularly helpful in determining whether fibroids are submucosal, intramural, or subserosal. It is the only non-operative diagnostic tool for detecting adenomyosis, and distinguishing it from fibroids. However, polyps may be better diagnosed using SIS or hysteroscopy.

What about long-term management?

After the diagnosis is made, benign intracavitary pathology can be managed by hysteroscopic resection. Failure of conservative therapy may necessitate that a hysterectomy be done. Management of a malignancy will be dictated by the particular lesion.

Where are we heading?

New therapeutic modalities for AUB, pharmacologic and interventional, surgical and non-surgical, are becoming available.

The Society of Obstetricians and Gynecologists of Canada (SOGC) has produced guidelines for investigating and treating both premenopausal and post-menopausal women with AUB. In addition, the SOGC developed the AUB Audit Tool, which looks at indications for hysteroscopy, as well as for hysterectomy, and provides an algorithm for investigation and management of both the premenopausal and post-menopausal woman with AUB. It is available upon request from the SOGC (www.sogc.org). 

References

1. Goodman A: Abnormal genital tract bleeding. Clin Cornerstone 2000; 3(1):25-35.
2. Goldstein SR: Diagnosing abnormal uterine bleeding in perimenopausal women. Cont Ob/Gyn 2003; 48(5):96-109.

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