Dysfunctional Uterine Bleeding (DUB)

Definition
Abnormal uterine bleeding not caused by pelvic pathology, medications, systemic disease or pregnancy. It is the most common cause (in 90% of cases) of abnormal uterine bleeding but is a diagnosis of exclusion.

Causes
Usually related to one of three hormonal-imbalance conditions: estrogen breakthrough bleeding, estrogen withdrawal bleeding and progesterone breakthrough bleeding.

Anovulatory Dysfunctional Uterine Bleeding
Anovulation is the most common cause of DUB in reproductive-age women. It is especially common in adolescents. Up to 80% of menstrual cycles are anovulatory in the first year after menarche. Cycles become ovulatory an average of 18-20 months after menarche.

Some women still have anovulatory cycles after the hypothalamic-pituitary axis matures. Weight loss, eating disorders, stress, chronic illness or excessive exercise may all cause hypothalamic anovulation.

Another cause of anovulation is polycystic ovarian disease. This unopposed estrogen state increases the risk of endometrial hyperplasia and cancer.

Some women with chronic anovulation do not fall into any of the above categories and are considered to have idiopathic chronic anovulation.

All causes of anovulation represent a progesterone-deficient state.

Ovulatory Dysfunctional Uterine Bleeding
Although less common than anovulatory bleeding, ovulatory DUB may also occur. DUB in women with ovulatory cycles occurs as regular, cyclic bleeding.

Menorrhagia may signify a bleeding disorder or a structural lesion, such as uterine leiomyomas, adenomyosis or endometrial polyps. Up to 20% of adolescents who present with menorrhagia have a bleeding disorder such as von Willebrand's disease. Liver disease with resultant coagulation abnormalities and chronic renal failure may also cause menorrhagia.

Polymenorrhea is usually caused by an inadequate luteal phase or a short follicular phase.

Oligomenorrhea in an ovulating woman is usually caused by a prolonged follicular phase.

Intermenstrual bleeding may be caused by cervical disease or the presence of an intrauterine contraceptive device.

Midcycle spotting may result from the rapid decline in estrogen levels before ovulation.

For other causes of abnormal uterine bleeding, see Table 2, above, this chapter.

History
• Age (e.g. reproductive age or menopausal)
• Amount, duration, frequency, interval of bleeding
• Try to determine if cycles are ovulatory or anovulatory (see Table 3, this chapter)
• Date of last normal menstrual period
• Any contraception use (type, how used)
• Hormone replacement therapy if postmenopausal
• Possibility of pregnancy
• Signs of easy bleeding (e.g. gums) or bruising suggestive of coagulopathy
• Any pain associated with bleeding
• Past history of gynecological problems such as abnormal Papanicolaou (Pap) smear, fibroids, sexually transmitted diseases (STIs), gynecological malignancy, prior episodes of abnormal uterine bleeding
• Past history of thyroid, renal or hepatic disease
• History of strenuous physical exercise (which may cause DUB)
Physical Findings

DUB is a symptom, not a diagnosis. The findings are variable, depending upon underlying cause. The results of the examination may be deceptively normal or obviously abnormal.

A full gynecological examination, including determination of blood pressure and weight and examination of thyroid, breasts, abdomen and pelvic area (bimanual), should be performed.

The pelvic examination consists of careful inspection of the lower genital tract for lacerations, vulvar or vaginal pathology, and cervical lesions or polyps. Bimanual uterine examination may reveal enlargement from uterine fibroids, adenomyosis or endometrial carcinoma.

Table 3: Characteristics of Ovulatory and Anovulatory Menstrual Cycles

<table>
<thead>
<tr>
<th>Feature</th>
<th>Ovulatory cycle</th>
<th>Anovulatory cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle length</td>
<td>Regular</td>
<td>Unpredictable</td>
</tr>
<tr>
<td>Premenstrual symptoms</td>
<td>Present</td>
<td>None</td>
</tr>
<tr>
<td>Bleeding</td>
<td>Dysmenorrhea</td>
<td>Unpredictable bleeding pattern; frequent spotting; infrequent, heavy bleeding</td>
</tr>
<tr>
<td>Breasts</td>
<td>Tender</td>
<td>Non-tender</td>
</tr>
<tr>
<td>Basal temperature curve</td>
<td>Biphasic</td>
<td>Monophasic</td>
</tr>
<tr>
<td>Other</td>
<td>Change in cervical mucus Mittelschmerz</td>
<td></td>
</tr>
</tbody>
</table>

Differential Diagnosis

See Table 2, in "Abnormal Uterine Bleeding," above, this chapter.

Diagnostic Tests

- Urine pregnancy testing for all patients of reproductive age
- Complete blood count (to provide a measure of blood loss and adequacy of platelet count)
- Prothrombin time (PT) and partial thromboplastin time (PTT)
- Levels of thyroid-stimulating hormone (TSH) and prolactin
- Liver function tests (ALT and total bilirubin)
- Cervical and vaginal samples for culture
- Pap smear
- Pelvic ultrasonography if organic pathology is suspected

Refer for endometrial biopsy early in the investigation of any woman who is > 35 years of age, postmenopause, or who has a history of prolonged exposure to unopposed estrogen in whom there is no response to initial management strategies.

These tests would be ordered by a physician.

Endometrial biopsy and ultrasonography should be performed early in the investigation of bleeding in any postmenopausal woman.

Management

Goals of Treatment

- Rule out organic pathology
- Regulate menstrual cycles
- Prevent complications

Specific management depends on the underlying cause.

Premenopausal Women

If the reproductive-age woman is not pregnant, the results of the physical examination are normal, and all pathologic, structural and iatrogenic causes have been excluded, abnormal uterine bleeding is
usually dysfunctional in nature and can be managed with hormonal therapy. See Table 4, below, this chapter.

**Postmenopausal Women**
The most serious concern in postmenopausal women with abnormal uterine bleeding is endometrial carcinoma. Of all postmenopausal women with bleeding, 5% to 10% are found to have endometrial carcinoma. Other potential causes of bleeding are cervical cancer, cervicitis, atrophic vaginitis, endometrial atrophy, submucous fibroids, endometrial hyperplasia and endometrial polyps.

### Table 4: Pharmacologic treatment for dysfunctional uterine bleeding

<table>
<thead>
<tr>
<th>Age group</th>
<th>Treatment*</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premenopausal</td>
<td>OCP</td>
<td>Low-dose (35 mcg) monophasic or triphasic OCP can regulate cycles while providing contraception.</td>
</tr>
<tr>
<td></td>
<td>medroxyprogesterone 10 mg PO od for 10 days or medroxyprogesterone 150 mg IM q3months</td>
<td>If contraception is not an issue, medroxyprogesterone can be used to regulate cycles; in a woman who has amenorrhea or oligomenorrhea, medroxyprogesterone every 3 months can protect against endometrial hyperplasia</td>
</tr>
<tr>
<td>Perimenopausal</td>
<td>medroxyprogesterone 10 mg PO od for 10 days OCP</td>
<td>May be used monthly to regulate bleeding pattern. Usually use 20 mcg pills; OCP can be continued until the woman has finished menopause, then change to HRT (OCP may be relatively contraindicated in women &gt; 35 years of age who smoke)</td>
</tr>
<tr>
<td>Postmenopausal (receiving HRT)</td>
<td>Cyclic HRT Continuous combined HRT (B class drug)</td>
<td>May consider increasing the progesterone dose if early withdrawal bleeding occurs; increase estrogen dose if intermenstrual bleeding is present. May increase the estrogen dose for 1-3 months to stabilize endometrium; may also try increasing the progesterone dose; if bleeding continues, consider changing regimen to cyclic HRT or using a different type of estrogen.</td>
</tr>
</tbody>
</table>

* *hormonal drugs used as treatment for DUB and not as contraceptives are all B class drugs*

### Women Receiving Hormone Replacement Therapy
Women receiving hormone replacement therapy often present with abnormal bleeding and of these, 30% have uterine pathology. Other causes include cervical lesions, vaginal pathology or the hormone therapy itself.

Women receiving sequential hormone replacement therapy may experience midcycle breakthrough bleeding because of missed pills, medication interactions or malabsorption. If unscheduled bleeding occurs in two or more cycles, further evaluation is indicated.

### Appropriate Consultation
Consult a physician before ordering diagnostic tests and for medication treatment options if urgent treatment is warranted.
**Monitoring and Follow-Up**
- Follow up monthly until cycles have become regular
- Monitor hemoglobin as needed if heavy bleeding continues despite therapy

**Referral**
- Refer electively any client (if she is stable) to a physician for thorough evaluation and treatment.