Heavy menstrual loss
Part 2. Management options

Heavy menstrual loss (menorrhagia) may be managed by observation, medical treatment or surgery. Hysterectomy can now be reserved as a second line option for many women – particularly those with dysfunctional uterine bleeding, for which there are effective hormonal and nonhormonal treatments.

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In last month's issue, Part 1 of this article covered the assessment of heavy menstrual loss and its impact on a woman's life – through history taking, physical examination and investigations when appropriate. Here, Part 2 will discuss the range of choices available for the management of heavy menstrual loss.

As soon as a woman complaining of heavy menstrual loss has been assessed and a diagnosis made between organic disease, dysfunctional uterine bleeding, a misperception of heavy loss or a combination of these,[1] the management options for her particular condition, circumstances and wishes can be discussed. The patient handout on pages 51 and 52 can be an aid for discussion – perhaps used in conjunction with the pictogram for assessing menstrual loss that was published in Part 1.

Management may be observational, medical or surgical. The decision-making process will need to take into account the diagnosis, the woman's past medical and surgical history, the aims of treatment (Table 1) and her health beliefs. The latter may be based on her knowledge, past experiences, current expectations, and the views of her friends and relatives. The attitude and approach of the medical practitioner will also impact on her decision.

A woman may wish to consent to immediate treatment should a specific problem be found during the investigative procedure; for example, endometrial polyps or small submucous fibroids can be removed during operative hysteroscopy.[2]

Sampling of the endometrium may reveal endometrial hyperplasia or precancer or cancer of the endometrium. The management of these diseases is not covered in this article.

Medical options for dysfunctional uterine bleeding

For many women with menstrual problems, no specific underlying pathology can be determined. This diagnosis by exclusion is termed dysfunctional uterine bleeding. Of the causes of heavy menstrual loss, it is the most amenable to trying medical treatment options to avoid hysterectomy.

The medical options have been underused by medical practitioners and patients.[3] Many have considerable benefit on heavy menstrual loss

IN SUMMARY

- **A complaint of heavy menstrual loss needs careful evaluation to determine its significance and possible underlying cause.**
- **Some women have significant pelvic pathology as the cause and have little alternative to hysterectomy.**
- **Many women have dysfunctional uterine bleeding. The medical and surgical options should be discussed with the benefits and risks for the individual woman.**
- **The increasing number of medical options will reduce the need for major surgery in most women.**

continued

Table 1. Aims for treating heavy menstrual loss

- Stop or decrease heavy bleeding
- Stop or decrease pain (dysmenorrhoea, dyspareunia, pelvic pain)
- Answer individual needs (fertility issues, premenstrual syndrome, ovarian cysts, anaemia)
- Avoid short and long term problems of treatment
- Minimise side effects of medications
- Address any other psychosocial issues
- Improve quality of life (relationship, sexual, professional, social, family) and alleviate costs (time, financial, psychological)

Table 2. Medical options for dysfunctional uterine bleeding[4-6]

Medication	Mean reduction in blood loss	Women benefiting*
Tranexamic acid (Cyklokapron)	50%	90%
NSAIDs	30%	60%
LNG-IUS (Mirena)	90–100%	90%
Progesterone (Implanon, Depo-Provera)	90–100%	80%
Combined oral contraceptive pill	50%	80%
Danazol (Azol, Danocrine)	80%	80%

*Percentage of women with dysfunctional uterine bleeding whose blood loss is reduced to <80 mL.
LNG-IUS = levonorgestrel intrauterine system.

(Table 2)[4-6] and should be discussed as a first line option.

Nonhormonal treatments

Many women prefer not to take hormone treatments – possibly because of previous side effects or a fear of long term effects or because they or their partner have had a sterilisation procedure or they are less familiar with the use of hormones for medical conditions rather than contraception. They may also be attracted by treatment that is required only at period times as opposed to all the time. A number of options exist for these women.

Tranexamic acid

At the level of the endometrium, the action of tranexamic acid (Cyklokapron) is to block the attachment of plasmin to fibrin. This prevents the 'secondary' bleed that occurs when the clots dissolve. The total amount of bleeding is reduced by 50%.

Side effects occur in 30% of women and include dizziness, headache and leg cramps (dose related), and gastrointestinal problems as with nonsteroidal anti-inflammatory drugs (NSAIDs). Impaired colour vision is a rarely reported effect (<1 in 1000).

Tranexamic acid needs to be taken only when the bleeding occurs but is required for the entire course of bleeding. The action ceases when the drug is ceased. It does not cause clotting in non-bleeding vessels or elsewhere in the body.

Nonsteroidal anti-inflammatory drugs

The NSAIDs inhibit prostaglandin synthase, reduce the production of vasoactive substances and have a direct effect on prostaglandin receptor sites. Menstrual loss is reduced by up to 30% and there is benefit on pain and premenstrual syndrome symptoms.

Side effects include headache and gastrointestinal symptoms, with contraindication for use in women with gastric ulceration or asthma. As they are over-the-counter drugs, it is particularly important to explain to women not to wait until the pain is established but that the NSAIDs should be taken before or as soon as the bleeding and pain occur.

Hormonal treatments

Levonorgestrel intrauterine system

The levonorgestrel intrauterine system (LNG-IUS; Mirena) combines a highly efficient contraceptive with a treatment that reduces menstrual blood loss in both normal women and those with heavy menstrual loss.[7] The main mechanism of action appears to be at the level of the endometrium, where the high dose of local progestogen causes epithelial atrophy and direct vascular changes. This is reversible and the endometrium regenerates within 30 days after removal of the device. While some women experience systemic hormonal effects, the circulating concentrations of levonorgestrel are low compared with those from the levonorgestrel progestogen-only pill.

The LNG-IUS is ideal for dysfunctional uterine bleeding[8,9] and it can also reduce pelvic pain. It has no significant effect on blood pressure, lipids, coagulation factors, liver function tests or carbohydrate metabolism.

It may also have a place in the management of uterine fibroids, endometrial hyperplasia, endometriosis and adenomyosis,[10] but this has not been fully evaluated as yet. Contraindications are undiagnosed abnormal bleeding, pregnancy, malignancy and infection.

The main side effect of the LNG-IUS is irregular breakthrough bleeding. This is most common in the first three to six months after insertion. Detailed counselling of the patient is crucial to explain

this anticipated effect, to reduce unnecessary discontinuation of treatment. Other possible side effects are nausea, weight gain and breast tenderness.

After six months of treatment with the LNG-IUS, 50% of women have amenorrhoea. Again, it is important to explain that this is an expected phenomenon, not a disorder, and that this 'bleed-free' status should be viewed as a positive feature in its own right.

One disadvantage may be the cost, although Mirena is now available on the PBS with the benefit restricted to contraception (no listing currently for heavy menstrual loss).

Combined oral contraceptive pill

The combined oral contraceptive pill may prove ideal for many women with heavy menstrual loss because it reduces the volume of the endometrium and prostaglandin production. The 30 µg pill decreases menstrual loss by 50%.

The benefits of the combined pill are:

- decreased menstrual loss
- regular cycles
- contraception
- control of dysmenorrhoea
- relief of premenstrual syndrome (PMS) and perimenopausal symptoms
- prevention of ovarian cyst formation
- reduction in ovarian cancer risk.[11]

In women without contraindications for its use, the combined oral contraceptive pill can be used until the age of 50 years. Once underlying pathology has been excluded, the newer 20 µg pill may be ideal for the woman with bleeding problems, cycle irregularity and menopausal symptoms who requires contraception.

Long acting progesterones

The new progestogen implant (Implanon Implant) and the existing depot medroxyprogesterone acetate (Depo-Provera, Depo-Ralovera) are both very good for managing heavy menstrual loss. Depot medroxyprogesterone acetate is given by injection every 10 weeks. Implanon is inserted by a doctor under the skin of the upper arm and it lasts for three years.

Both long acting progesterones may give temporary side effects of PMS-like symptoms (bloating, breast tenderness, headache). There may be an oestrogen-related reduction in bone mineral density (BMD), so the woman's BMD should be checked with long term use.[12] Approximately 20% women will have persistent, light yet troublesome bleeding – for some, it may not settle over time.

Progestogen tablets

Progestogen tablets have not been shown to be of value in the treatment of

Table 3. Hormone therapies for fibroids and their effects on heavy menstrual loss[8]

Hormone	Effect on fibroids or menstrual loss	Comments
GnRH analogue (e.g. goserelin [Zoladex])	50% reduction in fibroid size (maximal at 12 weeks); heavy menstrual loss reduced	Heavier women require larger doses; fibroid size 'rebounds' and heavy menstrual loss returns on ceasing therapy; hypo-oestrogenic effects (demineralisation of bone, hot flushes, vaginal dryness); therapy limited to 6 months
GnRH analogue + low dose oestrogen 'add back'	50% reduction in fibroid size (maximal at 12 weeks); heavy menstrual loss reduced	Avoids side effects of giving GnRH analogue alone; can be used preoperatively for fibroids >18 weeks in size (especially if anaemia is present, to minimise blood loss, or to avoid a midline incision)
Danazol (Azol, Danocrine)	Reduction in fibroid size (less than with GnRH analogue); possibly stops rebound growth; heavy menstrual loss reduced	Androgenic side effects; use limited to 6 months
Gestrinone (Dimetriose)	Reduction in fibroid size and heavy menstrual loss	Androgenic side effects; benefit lasts one year after stopping treatment
LNG-IUS (Mirena)	Decreased fibroid development and hysterectomy rates compared with copper-T device; heavy menstrual loss reduced	Further studies required
Combined oral contraceptive pill	Not effective in decreasing fibroid size; may reduce heavy menstrual loss	

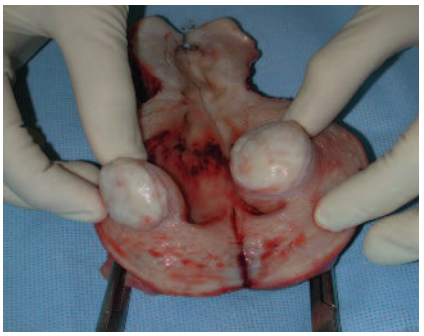

Figure. Hysterectomy specimen showing a submucous fibroid in the uterus.

heavy menstrual loss when given in the luteal phase only. They may have a place for some women when used for longer (e.g. norethisterone [Primolut N] 5 mg two to three times a day on days 5 to 25 of the cycle) or be of value for women with irregular cycles or for emergency suppression of bleeding.

Danazol

Although menstrual bleeding may be reduced to 20% when danazol (Azol, Danocrine) is taken continuously for 12 weeks, its use is limited by the side effects (weight gain, depression, headaches and acne) and the possibility of an uncommon but important side effect of permanent voice change. It may be useful for short term or second choice treatment.

Medical options for fibroids

NSAIDs are not effective in reducing heavy menstrual loss due to fibroids. The hormonal therapies have variable results (Table 3).[13]

Surgical intervention

Heavy menstrual loss can result from a number of pathological conditions (see Table 3 in Part 1, April issue). The epidemiology of some of the main conditions that are indications for a hysterectomy is poorly understood. The presence of small or subserosal fibroids or endometriosis does not necessarily indicate cause and effect of the symptoms. That is not to say that, for some women with problems of pain, bleeding and specific pathology, hysterectomy may not be the best option. Dysfunctional uterine bleeding is less commonly recorded as a reason for hysterectomy in the USA than in the United Kingdom (6 to 18% compared with 29 to 37%).

Hysterectomy

Women who have gross pathology may be left with few options other than hysterectomy. The most frequent symptoms leading to hysterectomy are bleeding problems (heavy menstrual loss in particular) and pelvic pain.

The chance of a woman undergoing hysterectomy varies around the world, and the decision-making process to reach this endpoint involves many factors:

- clinical signs
- symptoms
- presence of pathology
- the patient's wishes, knowledge and experiences
- the medical practitioner's characteristics and preferences
- available technologies
- the patient's socioeconomic status
- local economic issues
- health policy guidelines
- medical insurance category.

In some parts of the USA, 50% of women will lose their uterus before the age of 60. In Europe this figure is closer to 12%, and for women in Australia it is somewhere in between. Hysterectomy is mostly undertaken to improve quality of life, and a marked improvement does occur following symptom relief.

Hysterectomy in whatever geographical location, by whatever surgical route and by whichever surgeon has an associated morbidity (infection, haemorrhage, injury to bowel, ureter and bladder) and mortality (6 to 11 per 10,000 in reported studies around the world).

Whether the uterus is removed abdominally, vaginally or by a laparoscopically assisted vaginal hysterectomy will depend on the uterine size, the presence of specific pathology, other gynaecological complaints (such as urinary incontinence), the expertise and availability of the operator, access to hospital facilities and, last but not least, the wishes of the patient.

Uterine fibroids are cited as one of the commonest reasons for a woman to undergo a hysterectomy for the attributed symptoms of heavy menstrual loss and pressure.[14] The relationship of heavy menstrual loss and fibroids is not clear. There is some evidence that women with higher volumes of menstrual blood loss have an increased frequency of fibroids, particularly submucous fibroids (Figure).

The diagnosis of fibroids is often also made on routine examination of the asymptomatic woman. The exact prevalence is unknown but stated to be between 20 and 40% of women who are in reproductive years. Some of the risk factors are:

- increasing age (until menopause)
- family history
- ethnicity (increased risk in women of African origin)
- obesity
- low parity
- infertility.[13]

For a woman found to have fibroids without symptoms, the option of expectant management can be offered. The risk of malignancy in a fibroid (leiomyosarcoma) has been estimated at less than 1 in a 1000 and is not a high enough risk to justify routine hysterectomy.

Surgical alternatives to hysterectomy for fibroids

Myomectomy

Myomectomy aims to remove the fibroids and preserve the uterus; it can be performed via a laparotomy or a laparoscopy.[15] After myomectomy, fibroids may recur in up to 27% of women over a 10-year period. The rate is lower in women with fewer fibroids at the time of surgery and for those who give birth after the myomectomy. Pregnancy outcomes after myomectomy are favourable, with scar

continued

MedicineToday PATIENT HANDOUT

Do I have heavy menstrual blood loss? What are my treatment options?

Women commonly report their experience of menstrual (period) bleeding problems to their doctor. This handout is intended to provide you with basic information so that if you believe you have excessively heavy periods you can then discuss with your doctor assessment of the blood loss and the treatment options, both medical and surgical.

Normal menstrual loss

Most women are surprised when they learn that the amount of blood lost during a normal menstrual period is less than 80 mL (about 1/3 cup), with the average being about half of this amount. Most of the blood is lost in the first two days.

During a woman's reproductive life the periods will change in pattern and nature. They may become longer or heavier, they may start or end with a few light days, or the colour may become different – orange, brown or even blackish. All these changes may be a variant of normal. It is important to discuss these with your doctor, who will reassure you if this is the case.

Heavy menstrual loss (menorrhagia)

The medical definition of heavy menstrual loss (also known as menorrhagia) is a total menstrual blood loss of more than 80 mL per cycle. For some women, this can result in an iron deficiency anaemia. But for women who have adequate iron in their diet, a much larger loss than this can be tolerated without any problems.

It is often very hard for women to judge if they are losing too much blood, especially now that so many sanitary products with different absorbency rates are available. You may have heavy bleeding, and should consult your doctor, if you:

- need to wear a tampon plus a pad
- need to change protection every hour or two to prevent soiling your underwear
- pass clots (lumps larger than the size of a 20c coin)
- leak blood on to your bed or need to change pads during the night to prevent this.

Approximately one in 10 women in Western countries have heavy menstrual loss. Heavy periods can have a very distressing effect on your lifestyle and on your general well being if you become anaemic.

A common method of diagnosing heavy menstrual loss is by use of pictorial charts. These are also used to work out the benefit of treatments. Your doctor may be able to give you a copy of a chart to use. Keeping these records can help both you and your doctor to check what is happening.

A change in the pattern of bleeding can be a cause of concern, and a lot of women worry about cancer. This is not a common cause of heavy menstrual loss but is more likely in women over 40 years of age. Your doctor will know from your story whether or not you need have tests to check for this.

Although a number of diseases (such as fibroids) can cause the problem, for many women no actual cause can be found and these women are said to be suffering from dysfunctional uterine bleeding – a condition which becomes more common as women pass their forties and fifties.

Choosing the most appropriate treatment

There are several treatments available, both medical and surgical, that reduce the amount of blood lost during a period. Which method is most appropriate depends on the cause of the problem and which choice of treatment suits you the most. For some conditions (for example, very large fibroids), there may be little choice but surgery. However, for most women, particularly those with dysfunctional uterine bleeding, there is now a wide range of options, and surgery may be a last resort.

Apart from decreasing the bleeding, some women will want to consider:

- managing pain
- premenstrual problems
- cysts on the ovary
- contraception
- becoming pregnant.

With the many choices available, you will need to think about:

- your past and present health
- possible side effects of treatment
- long term problems
- which treatment appeals to you the most.

Often it may involve trying a few options before the best one for you is found.

Medical treatments

Treatments using medications are the first choice for most women. They can be hormonal or nonhormonal.

- **Hormonal treatments.** These may have two advantages. The first is that they can also deal with other concerns (such as contraception) at the same time. The second is that some methods can last for 3 to 5 years and are therefore cost-effective and don't need to be remembered daily.
- **Nonhormonal treatments.** Some women prefer to avoid hormonal treatments or to take medication only at period times. There are a couple of choices that are not hormones and are very effective at decreasing heavy menstrual loss.

This patient handout was prepared by Dr V. O'Connor and Dr P. Higgs.

continued

Do I have heavy menstrual blood loss? What are my treatment options? continued

Surgical treatments

Endometrial ablation (removal of the lining of the uterus or womb) is an option for women with dysfunctional uterine bleeding.

Hysterectomy is needed for certain women whose conditions cannot be treated otherwise; for other women, it is a second surgical option.

If you have large fibroids, your doctor may recommend a surgical procedure called a myomectomy.

Where do I start?

It will be necessary for your doctor to establish whether you do have heavy menstrual loss and whether or not this is due to a particular condition. Then your doctor can advise you which of the treatments are available to you. If there is no underlying disease, it may be a good idea to start with the medical treatments. A large number of women can reduce the heavy menstrual loss and avoid surgery by taking tablets for a minimum of six months. If this does not work or suit you, then you can consider a surgical option.

Medical treatments for heavy menstrual loss: how do they compare?

Medication	Additional benefits	Adverse effects	Comments
Nonhormonal treatments: not contraceptive			
Tranexamic acid (Cyklokapron)	Is taken at period times only	Occasional nausea and diarrhoea	Tablet size may be a problem for some women
Nonsteroidal anti-inflammatory drugs	Relieves period pain and headaches	Nausea, vomiting, diarrhoea, dizziness	Must be taken at the moment bleeding or pain starts – do not wait until it becomes bad. You may need to try a number of products
Hormonal treatments: also contraceptive			
Combined oral contraceptive pill	Contraceptive. Relieves period pain, premenstrual syndrome and perimenopausal symptoms. Decreases ovarian cyst formation and decreases risk of ovarian cancer	Transient nausea, breast tenderness, headache. Specific contraindications for some women – consult your doctor	Unsuitable for smokers older than 35 years. Can be taken every day, with only 3 to 4 periods a year
Long acting progestogens (Implanon or Depo-Provera)	Contraceptive. Implanon lasts 3 years. Depo-Provera injection is given every 10 weeks	Sometimes bloating, mood swings, premenstrual syndrome, headaches	No need to remember to take treatment
Levonorgestrel intrauterine system (Mirena)	Contraceptive. Benefits pelvic pain; lasts for 5 years; fertility returns after removal. May be helpful for endometriosis. Can be used with oestrogen-only hormone replacement therapy	Initial light, irregular bleeding for 3 to 4 months – but it's worth persisting because there is no bleeding in the longer term	No need to remember to take treatment

rupture uncommon (0.5% of cases). Caesarean section is usually recommended if multiple fibroids have been removed or the uterine cavity has been entered, although there is no evidence to support this.

Uterine artery embolisation

Uterine artery embolisation has recently been introduced as a treatment for uterine fibroids.[16,17] It has been reported to resolve or improve heavy menstrual loss in 64 to 69% of cases and lead to a 20 to 64% reduction in size of fibroids. Its use is new and needs more collaborative studies, particularly a randomised controlled trial comparing it with other surgical procedures. Gynaecologists and intervention radiologists need to evaluate the issues of complications and the long term effect on fibroid size and recurrence rate. Complications reported include necrosis of the fibroid, sepsis, pain and fever. Uterine artery embolisation will most likely provide a valuable alternative once it has been thoroughly evaluated and the women for whom it is best suited determined.

Surgical alternatives for dysfunctional uterine bleeding

Endometrial ablative treatments

Endometrial ablative techniques are an option for women with dysfunctional uterine bleeding. They are performed via the hysteroscope and include endometrial ablation with the laser or rollerball or transcervical resection of the endometrium. The advantages of these techniques (compared with hysterectomy) are shorter hospital stays, usually less severe and fewer complications, a more rapid return to everyday activities and less cost to the health system.[18] The success rates, complications, outcome and cost comparisons with hysterectomy favour hysteroscopic methods,[19] but the long term data comparing both methods are not yet complete.[20]

In approximately 3 to 13% of cases, heavy menstrual loss is not improved at one year and 10 to 18% of women will require re-treatment or a subsequent hysterectomy. The risks are low at 4.4%, but they are potentially serious and include uterine perforation, haemorrhage and fluid overload. Although pregnancy after these techniques is rare, it has been reported. Therefore, contraception is essential – or consideration of a tubal sterilisation at the same time as the ablation.

Newer methods of endometrial destruction

In an effort to simplify techniques, reduce costs and reduce complications, a variety

of nonhysteroscopic methods and devices have appeared. These include balloon devices (where heat is applied to the endometrium via a balloon inflated in the uterine cavity) and microwave endometrial ablation (which uses a high frequency intrauterine probe). Clinical trials have suggested equivalence to hysteroscopic endometrial ablation, but the determination of clinical safety will require at least several thousand cases as well as long term follow up.

Long term considerations of endometrial ablation

There is a possibility for some endometrium to regenerate after any of these techniques designed to ablate the endometrium. There is therefore a concern about possible pregnancy or the development of endometrial hyperplasia or malignancy. The risk and difficulty in diagnosing a future endometrial cancer in the presence of intrauterine adhesions has not been determined. Consideration should be given for any woman subsequently taking hormone replacement therapy (even though she has amenorrhoea) to use combined treatment (i.e. adding progesterone to protect the 'endometrium').

The future of surgical techniques for heavy menstrual loss

Hysterectomy may move from a primary surgical treatment of heavy menstrual loss to a second line treatment after medical options and endometrial ablation. If the ablative methods are found to be safe, low cost and easy to use for the gynaecologist, and convenient with improved quality of life for the patient, then they will be attractive as a first line surgical option.[18, 21, 22]

Conclusion

Women now have a wide range of options for the management of heavy menstrual loss. A thorough assessment, diagnosis and discussion of the options that are available should improve the quality of life for many women. In addition, it is important to provide them with well structured and accessible sources of information.

Numerous medical options are now available as first choice for dysfunctional uterine bleeding. If these are unsatisfactory, consideration should be given to an ablative procedure. Hysterectomy now forms a second line treatment for many women. However, where there is significant pathology hysterectomy may be the ideal option. MT

A list of references is available on request to the editorial office.

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Heavy menstrual loss

Part 2. Management options

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