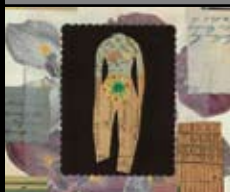




## THEME

Pelvic pain



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# Dysmenorrhoea

## BACKGROUND

Menstruation has dual significance for women. From one perspective it defines the start and end of reproductive potential, an affirmation of womanhood. On the other, just as the ancients observed taboos of menstruation, many women (and men) today are still influenced by outdated negative messages.

## OBJECTIVE

This article discusses an approach to assessment and management of dysmenorrhoea that considers the cultural, social and personal significance of symptoms and management choices.

## DISCUSSION

Cultural influences, such as a woman's status within society, her life stage, religion, education and employment, determine whether a woman seeks medical help for menstrual problems, and the personal significance of dysmenorrhoea. Assessment involves consideration of pain, associated symptoms, effect on lifestyle and activities of daily living, and a psychosocial and cultural assessment. Management involves specific treatment of underlying pathology, psychosocial support and individualising treatment according to impact of the pain, associated symptoms, reproductive stage, cost, and the woman's personal values and attitudes.

**'If one is born a woman, one must put up with pain'. Throughout history, menstruation has been viewed as an inescapable burden that women must endure. Ancient cultures observed taboos of menstruation derived from man's fear of the 'mysterious flow' as a powerful force that must be repressed for the safety of the menstruating woman and all with whom she comes in contact. The ability to bleed and not die equalled control of life powers in some religions. A menstruating woman was isolated and confined, in often cruel ways, so that her 'deadly contagion' would not poison the earth, herself, and mankind. In several Asian and African cultures, women are still placed in seclusion in 'menstrual huts'.**

It was not until the 1800s that medicine began to acknowledge the study of 'diseases peculiar to women'. In the Victorian era, menstruating women were advised to 'stay at home, rest, avoid exertion and bathing'.<sup>1</sup> The 1900s saw the use of narcotic drugs rendering women nonfunctional at work, school and home for 2–3 days per month. Young women were victims of radical surgery such as hysterectomy, oophorectomy and presacral neurectomy. Then followed 50 years where

dysmenorrhoea was labelled a purely psychosomatic disorder. Benjamin Spock stated that: 'a worried attitude about health and menstruation causes cramps'<sup>2</sup> and, as recently as 1980, a gynaecology text stated the 'appropriate treatment is psychotherapy, but there is little that can be done for the patient who prefers to use her menstrual symptoms as a monthly refuge from responsibility and participation'.<sup>3</sup>

Today, menstruation has dual significance for women. From one perspective it defines the start and end of reproductive potential, an affirmation of womanhood, maturing, a time for celebration. In the television comedy 'We can be heroes' a character celebrates her first menstrual period with a party and a cake with red icing and tampons around the edge. Having oral sex with a menstruating woman is an accepted practice to some and described as a 'rainbow kiss' or a 'dolmio grin'. Many women are reassured monthly that they are cleansing their bodies of old blood and toxins that would otherwise build up inside their bodies and cause illness. In some cultures menstruation positively defines a woman's status and position in society.

On the other hand, just as the ancients observed taboos of menstruation, many women (and men) today

are still influenced by outdated negative messages. Menstruation is still regarded by many women as an unclean state and beliefs persist that encourage girls to abstain from normal life activities such as bathing, swimming and exercise. Tampons and sanitary pads are advertised as 'feminine hygiene products', implying that hygiene is the issue. Many women, their partners, and their doctors still believe that period pain is 'all in the head'.

Belief systems also vary from culture to culture and ignorance of culturally divergent beliefs may lead to failure in health care delivery. Under Islamic law, a menstruating woman is not allowed to pray, fast during Ramadan, have sex or divorce. She is not allowed to touch the Koran unless it is a translation. A Hindu woman abstains from worship and cooking and stays away from her family, as her touch is considered impure when she is menstruating. The expression, tolerance and communication about pain in general, varies across cultures and failure to vocalise pain does not mean a woman has a 'higher threshold'. For example, some Mediterranean cultures are outwardly expressive of pain; whereas the Chinese believe it is important to 'save face'. In some religions, pain is valued as a pathway to heaven; in others it is viewed as a karmic return for past misdeeds. Different belief systems also influence attitudes to drugs and other methods of pain relief. There are also clearly defined cultural influences which will determine whether or not a woman will seek medical help for menstrual problems, including her status within a particular society, her religion, education and her employment.

## Dysmenorrhoea

Dysmenorrhoea is chronic, cyclic pelvic pain associated with menstruation. Typically, it is cramping, lower abdominal pain occurring just before and/or during menstruation, usually commencing soon after menarche once regular ovulation is established.

While our early ancestors may have experienced only 30–40 menstrual cycles in their lifetime, the average western woman now experiences 400 menses during her reproductive life. As dysmenorrhoea affects approximately 90% of menstruating women, this has the potential to create a significant health and socioeconomic issue. However, the majority of women with dysmenorrhoea do not seek medical advice. Some deny the pain, and do not seek help even when symptoms are severe and incapacitating. They may think it is 'normal' and therefore their destiny to 'grin and bear it' or that menstruation is a feminine function and should not be medicalised.

Sadly, dysmenorrhoea is seldom treated with any degree

**Table 1. Taking a history**

- **Pain assessment**
  - severity
  - cyclic versus noncyclic
  - chronic versus acute
  - relationship to menstruation
- **Associated symptoms**
  - premenstrual syndrome
  - menorrhagia
  - migraine
  - dyspareunia
  - nongynaecological symptoms – urinary, bowel, musculoskeletal
- **Medication use – medications trialled and with what success**
- **Family history – endometriosis, gynaecological cancers**
- **Sexual history – current/past relationships, sexual abuse, sexual partners, exposure to STIs**
- **Gynaecological history – menarche, parity, contraception, IUD use, surgery**
- **Psychological assessment – depression/anxiety symptoms, psychosomatic disorders**
- **Social assessment – effect of symptoms on daily activities/work/sport/ social activities/relationships**
- **Cultural assessment – attitudes to menstruation**
- **Significance of pain to the woman at this time in her life**

of sympathy either by family members, employers, school or college authorities, or by the medical profession. Many women, particularly teenagers, are embarrassed to discuss anything related to menstruation. Others don't believe there is any treatment and don't want to pay a doctor's fee to be told to rest, have a hot bath, use a hot water bottle or drink herbal tea. They may not trust that their doctor or employer will consider menstrual pain a genuine problem and don't want to bother the busy doctor with an irrelevant problem and be told that 'it's all in your head'.

Many women are unaware of the implications of secondary dysmenorrhoea, the causes of which may impact on fertility and propensity for invasive surgical procedures in the future. The delay in diagnosis of endometriosis averages 4–7 years due to women and doctors not recognising the possible significance of menstrual pain.<sup>4</sup>

## Assessment

When a woman presents for assessment of dysmenorrhoea we must consider not just the woman's presenting symptoms and possible underlying medical causes, but also the effect the pain is having on her life, her life stage, and her cultural influences (*Table 1*). These factors will all impact on the significance that the experience of dysmenorrhoea will have for her.

**Table 2. Differentiating between primary and secondary dysmenorrhoea**

	<b>Primary</b>	<b>Secondary</b>
<b>Age</b>	Onset soon after menarche	Onset at any age, sometimes after years of pain free menses
<b>Cycle</b>	Before/during menstruation Usually worse day 1, seldom lasts more than 48–72 hours	Increasing pain with increasing age Not necessarily limited to menstruation May increase in severity over the period and persist for days
<b>Pattern</b>	Similar with each period	Worsens with time May be unilateral May be worse with defecation, urination May radiate to lower back and rectum
<b>Associated symptoms</b>	PMS – physical and emotional symptoms, nausea, vomiting, migraine, bloating	Menorrhagia, irregular cycles, infertility, urinary retention, cyclic haematuria, dysuria, diarrhoea, dyspareunia, vaginal discharge
<b>Pelvic exam</b>	Normal	Tenderness Adnexal mass Fixed retroverted uterus Cervical tenderness May be normal
<b>History</b>	Nil relevant	Exposure to STIs Intrauterine device (IUD) Tampon use Previous surgery Sexual dysfunction
<b>COCP</b>	Usually alleviates the pain	Minimal improvement, if any
<b>NSAIDs</b>	Usually alleviates the pain	Minimal improvement, if any

### Differential diagnosis and underlying causes

Secondary dysmenorrhoea, with demonstrable pelvic pathology – the most common being endometriosis – must be excluded before a diagnosis of primary dysmenorrhoea (no pelvic pathology) is assumed. Often pelvic pathology can be confidently excluded on the basis of the history, examination and response to initial simple therapies alone without the need for invasive investigations (*Table 2, 3*).

Otherwise investigations including transvaginal ultrasound and laparoscopy +/- hysteroscopy are warranted to confirm the diagnosis. Other laboratory and X-ray investigations will only be necessary based on the assessment of individual needs (*Table 4*).

Although the clinical picture of dysmenorrhoea is often clear cut, differential diagnoses need to be actively considered. Sometimes disorders causing cyclic pain may cause noncyclic pain and vice-versa. For example, endometriosis may cause pain unrelated to menses. On the other hand, the pain from pelvic inflammatory disease (PID) may be exacerbated during menstruation. A woman may first present with acute pain, having disregarded her chronic menstrual pain for many years. She may have

undiagnosed endometriosis causing dysmenorrhoea and a ruptured endometrioma.

Pain may be referred from other pelvic organs that share their innervation with the uterus, cervix, vagina and ovaries from T10–12, L1 and S2–4. The distribution of referred pain from the lower renal tract and the lower uterus/cervix is the same – to the lower back, buttocks and posterior thigh. Therefore, low back pain may be attributed to a urinary tract or gynaecological problem. The presence of bowel symptoms may lead to a diagnosis of irritable bowel syndrome, chronic constipation, inflammatory bowel disease or diverticulitis.

### Associated symptoms

Dysmenorrhoea is often associated with other debilitating symptoms that require specific management. These symptoms may be the woman's prime reason for presenting, and her most important concerns. Common associated symptoms include nausea, vomiting, diarrhoea and fatigue. Dysmenorrhoea is more common in women with premenstrual syndrome (PMS) and PMS symptoms may occur 1–14 days before a period. Physical and psychological symptoms may in turn exacerbate the pain

**Table 3. Possible causes of secondary dysmenorrhoea**

Intrauterine	Extrauterine	Nongynaecological
Adenomyosis	Endometriosis	Psychosomatic disorders
Menorrhagia – passing clots	Pelvic inflammatory disease	Depression
Endometrial carcinoma	Ovarian carcinoma	Irritable bowel syndrome
Fibroids	Adhesions	Chronic constipation
IUD	Ectopic pregnancy	Inflammatory bowel disease/diverticulitis
Miscarriage	Retained tampon	Musculoskeletal – referred pain
Haematometra from congenital anomalies		Renal calculi/urinary tract infection
Cervical stenosis		

of dysmenorrhoea making it the 'straw that breaks the camel's back'. Premenstrual dysphoric disorder (PMDD) is a severe form of PMS where women may become psychotic or homicidal.

Menstrual migraine may occur in the week before the period and can be debilitating, with some women confined to bed for 2–3 days each month. Menorrhagia may also cause significant social disability and may result in iron deficiency anaemia with tiredness and lethargy. Dyspareunia will impact on libido, sexual function and may create relationship issues.

#### Effect on lifestyle

Beside the obvious physical concerns about underlying pelvic pathology, dysmenorrhoea can disrupt daily activities, causing significant social disability. Pain may inconvenience a woman during holidays, social activities or at times when high performance is required (eg. exams, sporting competitions, job interviews). Chronic recurrent pain causes absences from school or work and significant cost to the health care system in medical consultations, investigations and therapies prescribed.

#### Associated mood disorders

In addition to excluding underlying pelvic pathology as a cause of dysmenorrhoea, psychosocial issues must be defined and assessed – important from two aspects:

- the effect of chronic pain on mood, and
- the effect of mood disorders and other psychiatric problems on pain.

Coexisting mood disorders such as anxiety and depression may exacerbate an individual's pain experience and/or chronic pain may cause or exacerbate an underlying mood disorder. Anticipation of the pain of the next period creates additional stress and anxiety.

Psychosocial problems such as anxiety, depression, family and marital disharmony, drug and alcohol abuse, physical and sexual abuse and sexual dysfunction may manifest as physical pain. Dysmenorrhoea is also a

common presentation of somatisation disorder.<sup>5</sup> Clues from the history hinting at a psychosomatic component to dysmenorrhoea may include:

- symptoms are described dramatically and emotionally, referred to as 'unbearable', 'beyond description', or 'the worst imaginable'
- insistence for investigations, treatments and referral to specialists
- dissatisfaction with medical care, attending multiple health practitioners
- multiple operations/procedures for pain without significant findings
- severity of the pain does not correlate with the degree of pelvic tenderness
- multiple other recurring persistent complaints for which no organic cause can be found
- dependant, manipulative
- frustration and anger with any suggestion that symptoms are psychological.

#### Is there a history of sexual abuse?

Victims of physical or sexual abuse may present with chronic pelvic pain, including dysmenorrhoea. While many doctors do not routinely screen for sexual abuse, women with chronic pelvic pain must be asked whether they have ever been touched by anyone against their will, as a child or as an adult. Obviously this type of inquiry requires extreme sensitivity and compassion and relies on a strong rapport and trusting doctor-patient relationship. Rarely will disclosure come during initial consultations, but will require ongoing patience and time.

Not only are women with a history of abuse more likely to experience dysmenorrhoea, their pain causes significantly more psychological distress often with associated depression, sexual dysfunction and somatisation. It must also be remembered that victims of sexual abuse may be re-traumatised during pelvic examinations and vaginal ultrasounds and these 'invasions' should be avoided until the woman is ready.

### Life stage

The significance of dysmenorrhoea and the management of pain will vary according to a woman's reproductive stage. Teenagers may be embarrassed about discussing menstrual difficulties and may have concerns about body image and modesty. The significance of dysmenorrhoea to a teenager is likely to be related to the disruption of their studies, sport and social life. A consultation for dysmenorrhoea may also provide a welcome opportunity for the young person to discuss issues such as contraception and sexually transmitted infections (STIs) – with or without parental blessing. The appropriateness of gynaecological examinations and procedures will vary according to age and previous sexual activity. Investigation options may be restricted to abdominal ultrasounds rather than the more accurate transvaginal scans. Parents may not be prepared to consider management options such as the combined oral contraceptive pill (COCP) for fear that their daughter may become complacent about sexually activity.

In the reproductive age group, dysmenorrhoea is more likely to be associated with abnormal vaginal bleeding such as menorrhagia. Assessment and management will depend on the woman's family planning. Fertility may be a priority. Lifestyle issues may be particularly relevant to women at this age and they may be more conscious of preventive health care and present for regular 'well woman's check,' an opportunity to discuss issues such as pain. On the other hand, many women in this age group tend to put their own personal health last as they are busy caring for children (and partners) while also working and/or managing the household.

In the menopausal transition, cycles may be unpredictable and variable, creating significant social disability, particularly if cycles are shortened. Fluctuating menopausal symptoms – physical and psychological – may impact on the tolerance of pain. Many women may be starting to consider their mortality and have a genuine fear of cancer, particularly if any of their peers have been afflicted. Carcinoma must always be excluded. Fertility issues change in that, rather than wanting a pregnancy, women dread the prospect of an accidental, unplanned pregnancy, which may affect management options.

### Management

Management options for dysmenorrhoea will depend on whether there is a pelvic disorder requiring treatment and will vary considerably depending on the life stage, beliefs and culture of the woman. Some management options may resolve a number of issues, ie. the COCP may treat dysmenorrhoea, menorrhagia, provide contraception

**Table 4. Investigation of pelvic pain**

Transvaginal ultrasound	Pelvic masses, ovarian cysts, uterine fibroids and polyps, pelvic abscess, adenomyosis Will not exclude a diagnosis of endometriosis
Laparoscopy	Both diagnostic and therapeutic, particularly in the management of endometriosis and where pain is of uncertain origin
<b>And where indicated</b>	
Hysteroscopy	Defines intrauterine pathology and provides an endometrial tissue sample for histology Can be performed as an office procedure at centres such as The Jean Hailes Medical Centre for Women, eliminating the need for hospital admission and anaesthesia
Full blood examination	To assess anaemia related to chronic menorrhagia, infection (PID)
CA-125	Increased in endometriosis and other gynaecological conditions (ie. ovarian cancer)
Cervical/vaginal swabs	PID, choice of antibiotic
Mid stream urine	To exclude urinary tract pathology
Quantitative B-HCG	To exclude pregnancy with miscarriage/ectopic pregnancy
Plain abdominal X-ray, IVP, abdo/pelvic CT scan	To exclude bowel obstruction, renal calculi, pelvic masses

and hormone therapy. Management options must be individualised and discussed so that a woman can make informed decisions regarding her own health management (*Table 5*).

Management of any underlying pelvic pathology such as endometriosis and PID may require a combination of medical and surgical therapies.

### Management of associated symptoms

By improving quality of life in general, tolerance to pain may be increased. This may include:

- alleviating symptoms of PMS
- management of stress/anxiety/mood disorders
- treatment of menorrhagia and accompanying iron deficiency anaemia
- relief of menstrual migraine.

### Reassurance

It is important to reassure the woman that the pain she is experiencing is real and not 'in her head' and that, although period pain is common and is experienced in variable degrees of severity by the majority of healthy menstruating women, this does not mean that it has to be simply accepted and endured, particularly if it is impacting on lifestyle and daily activities. She also needs

**Table 5. Management considerations**

- Specific management of underlying pelvic pathology
- Psychosocial support
  - reassurance of normality
  - social, financial, emotional support
  - counselling – relationship and sexual, assisted fertility, pre-hysterectomy
- Individualise according to reproductive stage
  - maintain fertility or family complete
  - requires reversible contraception
  - requires cycle control for menorrhagia or erratic periods
  - prefers ‘bleed free’ cycles or a monthly bleed
- Specific management of associated symptoms – PMS, migraine, menorrhagia, dyspareunia, menopausal symptoms
- Compliance, cost and contraindications to medications
- Attitude toward invasive options – IUD, surgery

to be reassured that there are many effective management options available to her. Once secondary causes have been eliminated or adequately treated, this reassurance may be all that is required if the degree of social disability is minimal.

Rest, heat packs, massage, yoga, physical exercise and sexual intercourse may minimise menstrual pain.<sup>4</sup> Pelvic floor physiotherapy may be effective in the management of chronic pelvic pain.<sup>6,7</sup> Alcohol is also a uterine relaxant, supporting my grandmother’s remedy – ‘a glass of pure gin’ – for dysmenorrhoea in the 1940s. At the very least Mum enjoyed her pain!

Lifestyle changes in general, where necessary, may improve tolerance to pain by improving quality of life and overall happiness.

### Psychosocial support

Women may need assistance with the social, financial and emotional consequences of missing school or exams, or sick leave (particularly with an unsympathetic employer). Sexual and relationship counselling may be required if issues such as chronic pain and dyspareunia impact on a woman’s relationship and libido. Some women may need counselling if conditions such as endometriosis or chronic PID have compromised their fertility. Other women find it difficult to cope with the concept of hysterectomy due to issues such as loss of femininity and youth.

### NSAIDs

Nonsteroidal anti-inflammatory drugs (NSAIDs) such as mefenamic acid and naproxen can be very effective alone in relieving dysmenorrhoea.<sup>8,9</sup> However, for maximal benefit it is necessary to commence them at least 48 hours

before the period commences. This may be impossible in a perimenopausal woman whose cycles may be erratic and she is unable to predict the onset of menses. Nevertheless they are safe, effective, inexpensive, and only require intermittent use.

### Combined oral contraceptive pill

As dysmenorrhoea is mainly seen in ovulating women, by rendering a woman anovulatory with the COCP, dysmenorrhoea may be resolved. The COCP may have other benefits for women also managing issues such as PMS, contraception, cycle control, menorrhagia and hormone therapy (albeit high dose).

Even if this does not resolve the issue of pain, a significant benefit of a monophasic pill is cycle control. Therefore a woman’s cycle can be manipulated so that she can avoid menstruating at times that are inconvenient to her (eg. holidays). An extension of this concept is the use of the COCP long cycle where women have the choice to have bleed free cycles. Occasional breakthrough bleeding may be a nuisance but is easily manageable.

### Mirena intrauterine device

Unfortunately many women abhor intrauterine devices (IUDs) due to the negative publicity surrounding the older nonprogestagenic IUDs that often caused menorrhagia and increased dysmenorrhoea. Therefore, it is important to dispel these misconceptions when differentiating between the modern progestagenic IUDs. By releasing progesterone locally and directly into the uterus, the Mirena IUD has the following benefits:

- provides effective and reversible contraception if needed
- minimises, and in most cases eliminates, menstrual bleeding (there may be unpredictable bleeding in the first few months)
- side effects are rare as the progesterone is acting locally with minimal systemic absorption
- natural ovarian function is maintained (attractive to many older women who do not want to disrupt their hormones ‘unnaturally’ with the OCP or resort to surgery)
- is an economically attractive option now that it is available on the PBS and is effective for approximately 5 years
- for women in the menopausal transition who require hormone therapy for relief of oestrogen deficiency symptoms, Mirena IUD eliminates the need for progestins (a common cause of side effects) and provides effective contraception.<sup>10-12</sup>



## Surgery

If medical forms of management are unsuccessful or unacceptable to the patient, then surgery is the only other alternative. Invasive surgery would be an extreme management option for primary dysmenorrhoea alone, but is a valid option in many women for the management of secondary dysmenorrhoea due to underlying pelvic pathology or in those with associated debilitating symptoms such as menorrhagia. The aim of surgery is to either remove a potential cause of pain or ablate or remove the endometrium itself. Minimally invasive techniques have obvious advantages over conventional surgery in reducing the length of hospital stay and postoperative recovery period and avoid the trauma and risks of major surgery and reducing health care costs.

## Endometrial ablation

Endometrial ablation is a minimally invasive procedure which significantly reduces or eliminates menstruation and therefore dysmenorrhoea. In many cases the Mirena IUD will provide the same effect without the need for surgery.

## Hysterectomy

Hysterectomy may be a welcome relief for a long time sufferer of severe dysmenorrhoea who may prefer a permanent cure for her debilitating symptoms. This may be a valid option in women who have completed their family, but in some women is totally unacceptable. In addition, bilateral oophorectomy may be required to remove the cyclic stimulation of endometrial tissue, particularly where endometriosis is the cause. This will almost certainly necessitate the need for oestrogen replacement therapy. On the other hand, total hysterectomy significantly reduces the risk of gynaecological cancers<sup>13</sup> and can now be performed vaginally and laparoscopically, reducing recovery time.

## Others

Division of the uterosacral ligament has limited or no benefit as the uterine nerve supply is also via the uterine blood vessels and broad ligament.

Laparoscopic presacral neurectomy carries the risk of trauma to major pelvic blood vessels and may be ineffective as not all nerves follow the presacral plexus.

## Conclusion

The cultural perceptions and psychosocial impact of what menstruation means to the individual woman must be understood to enable health practitioners to challenge myths and provide advice for a woman with dysmenorrhoea thereby enabling her to make informed choices about her

own health management. The pain of dysmenorrhoea 'is a function of complex interactions between various systems from the level of neurotransmitters to the level of cultural values regarding pain experiences and the expression of pain'.<sup>14</sup> The significance of dysmenorrhoea to an individual woman will vary according to her stage in life or reproductive phase and the degree of socioeconomic disability she is experiencing at that time. Beliefs, personality, emotions and circumstances affect both the perception of pain and the response to treatment. While it is important not to medicalise menstruation, it is also important to exclude secondary causes of dysmenorrhoea that may impair fertility and cause morbidity and mortality. Equally important to a woman is the reassurance that her menstrual distress is not being disregarded as 'psychosomatic' but that psychological elements may be components of the pain, rather than the cause. Isolation, suffering and incapacitation resulting in economic, social or personal disability are no longer necessary. Management involves empowering women to take an active role in their own health care and assisting them to make healthy choices to best manage individual needs and concerns.

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