



# Chronic pelvic pain in women

## Assessment and management



**BACKGROUND** Chronic pelvic pain (CPP) is a common condition that poses diagnostic and management challenges for doctors and their patients.

**OBJECTIVE** This article outlines an approach to the diagnosis and management of CPP in women, lists a range of possible aetiologies, and provides additional information on three conditions commonly associated with CPP: endometriosis, pelvic inflammatory disease, and irritable bowel syndrome.

**DISCUSSION** Chronic pelvic pain may be due to one or several aetiologies, while in some women no specific cause is identified. All women should be advised that even though limited medical knowledge sometimes precludes the assignment of a definite cause and cure, the pain can be managed, and psychological support can be provided. A multidisciplinary approach can be beneficial.

Chronic and/or recurrent pelvic or lower abdominal pain in women is often a very challenging diagnostic and management issue for general practitioners. The presenting symptoms for many of the known causes of chronic pelvic pain (CPP) are often similar and non-specific, making it difficult to differentiate between causes. For example ovarian cancer, which is often not diagnosed until it is quite advanced, may present initially with abdominal symptoms such as abdominal pain/pressure/swelling/tightening in over 50% of patients,<sup>1</sup> while patients with irritable bowel syndrome (IBS) may present with abdominal pain, symptoms of gas including abdominal distension and increased belching or flatulence, as well as altered bowel habit and upper gastrointestinal symptoms.<sup>2</sup> This may result in patient and doctor frustration, delayed treatment or symptom alleviation, and patients having investigations performed that may be invasive and expensive, and not always helpful.

### Definition of chronic pelvic pain

Much of the research examining chronic or recurrent pelvic pain in women has been hampered by the lack of a consistent definition.<sup>3</sup> The most commonly used definition of CPP considers only the location and duration of the pain: recurrent or constant pain in the lower abdominal region that has lasted for at least 6 months.<sup>4</sup> Zondervan and Barlow<sup>5</sup> note however, that women whose pelvic pain is related to pregnancy or malignancy, or who experience pain only around menstruation (dysmenorrhoea) or during sexual intercourse (dyspareunia) are usually excluded from this CPP diagnosis.



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The lack of a consistent definition of CPP makes estimates of its prevalence difficult. A large USA community based study reports a 3 month period prevalence of 15% in women aged 18–50 years (with only 25% of these women having seen a health care provider in the time period considered for the study).<sup>6</sup>

### Causes of CPP

Our understanding of the pathophysiology of CPP is still incomplete. Chronic pelvic pain may arise from any structure in or related to the pelvis, including the abdominal and pelvic walls,<sup>7</sup> and not uncommonly the cause of pain is multifactorial. Furthermore, in some

women no definitive diagnosis can be made. *Table 1* provides a list of possible causes of CPP. Reiter<sup>8</sup> provides some estimates of the prevalence of various medical causes for CPP:

- dysmotility disorders (including IBS) 50–80%
- musculoskeletal disorders 30–70%
- urological diagnoses 5–10%
- advanced endometriosis and/or dense bowel adhesions <5%
- multiple medical diagnoses 30–50%, and
- no identifiable medical diagnosis <5%.

Psychological diagnoses are apparent in up to 60% of women referred for CPP (prevalence of depression 25–50%, somatoform disorders 10–20%, anxiety disorders 10–20%, and multiple psychological diagnoses 20–30%).<sup>8</sup> It is of note, that while CPP is often associated with substantial psychosocial impact, the identification of psychosocial factors as cause or effect remains problematic.<sup>9</sup>

### Approach to diagnosis

In assessing a woman with CPP it is essential to take a multisystem approach. Initially, a detailed history of the pain itself is required including its quality, location, radiations, duration, severity, aggravating and relieving factors; relation to the menstrual cycle, bowel and urinary functions, and physical activity; and its impact upon activities of daily living including work and personal relationships.

The site of radiation of the pain may give a clue to the origin of the pain; for example cervical, uterine, or vaginal pathologies may refer pain to the low back or buttock, while tubal or ovarian pathologies generally have pain localised to one side and referred to the medial aspect of the thigh.<sup>10</sup> A thorough systems review and physical examination of those systems related to the possible causes of CPP (gynaecological, gastrointestinal, genitourinary, neurological, musculoskeletal/soft tissue, and psychological) needs to be performed. In particular, a detailed pelvic examination should be undertaken, focussing particularly on the presence or absence of cervical discharge, areas of focal tenderness, uterine masses, ovarian masses, adnexal thickening, and fixation of any structures.<sup>10</sup>

The investigations performed for women presenting with CPP will depend upon the history and physical examination findings. It is reasonable however, to support the use of the following basic laboratory studies in all (or most) women presenting with CPP:

**Table 1. Differential diagnoses of chronic pelvic pain<sup>16</sup>**

**Gynaecological disease including:**

- Endometriosis
- Adhesions (chronic pelvic inflammatory disease)
- Leiomyoma (and other benign neoplasms<sup>10</sup> including ovarian dermoid cysts, cystadenomas)
- Pelvic congestion syndrome
- Adenomyosis
- Malignancy<sup>10</sup>

**Gastrointestinal disease including:**

- Constipation
- Irritable bowel syndrome
- Diverticulitis and diverticulosis
- Chronic appendicitis
- Meckel's diverticulum
- Malignancy<sup>10</sup>

**Genitourinary disease including:**

- Interstitial cystitis
- Abnormal bladder function (bladder dyssynergia)
- Chronic urethritis
- Malignancy<sup>10</sup>

**Myofascial disease including:**

- Fasciitis
- Nerve entrapment syndrome
- Herniae (inguinal, femoral, spigelian, umbilical and incisional)

**Skeletal disease including:**

- Scoliosis
- L1 and L2 disc disorders
- Spondylolisthesis
- Osteitis pubis

**Psychological disorders including:**

- Somatisation
- Psychosexual dysfunction (including a past history of sexual abuse)
- Depression

- complete blood count
- serum chemistry
- urine microscopy, culture and sensitivity (MCS)
- high vaginal swab for MCS, and
- endocervical swabs for chlamydia and MCS.

Other selected imaging studies may include:

- ultrasound scan (USS) of the pelvis (in particular, transvaginal USS)
- diagnostic laparoscopy, and
- sigmoidoscopy, and/or colonoscopy.

## Major causes of CPP

The conditions most commonly associated with CPP are endometriosis, pelvic inflammatory disease (and related adhesions) and IBS.<sup>5</sup>

### Endometriosis

The pelvic pain of endometriosis tends to vary with the menstrual cycle, with pain typically building up toward the end of the cycle, and declining throughout menstruation; some women have pain throughout the entire menstrual cycle, but its severity varies throughout the cycle.<sup>7</sup> Women with endometriosis who have CPP often tend to also have dysmenorrhoea and dyspareunia, and there may be a history of infertility. Painful defaecation, especially just before or during menstruation is also common, as is fatigue.<sup>7</sup> Physical examination may sometimes reveal nodular uterosacral ligaments, and/or a retroverted and fixed uterus.<sup>10</sup>

A consensus statement on the management of CPP and endometriosis suggests that for women in whom other causes of CPP have been excluded and for whom endometriosis is the suspected cause of the pain, laparoscopic confirmation of the diagnosis is unnecessary, and a trial of medical therapy including first line (eg. nonsteroidal anti-inflammatory drugs [NSAIDs]) and second line therapies (eg. danazol, gonadotrophin releasing hormone [GnRH] agonists, and progestins) is justified provided there are no other indications for surgery.<sup>11</sup> If surgery is necessary, laparoscopic approaches offer comparable clinical outcomes to laparotomy but with less morbidity. The use of adjuvant postoperative medical therapy is supported after conservative surgery for CPP.<sup>11</sup>

### Pelvic inflammatory disease (and related adhesions)

A history of previous sexually transmitted infection, dyspareunia, menstrual irregularity, backache, rectal pressure, or pelvic pain with fever is often obtained in women presenting with CPP due to pelvic inflammatory

**Table 2. Common red flags of clinical practice for diagnosing IBS<sup>14</sup>**

- Documented weight loss
- Nocturnal symptoms
- Blood mixed in stools
- Recent antibiotic use
- Family history of colon cancer
- Relevant abnormalities on physical examination (eg. fever, skin rashes, arthritis, palpable abdominal mass, positive occult blood in stool test)<sup>13</sup>
- New onset of symptoms in patients aged >45–50 years

**Table 3. The Rome diagnostic criteria for irritable bowel syndrome<sup>13</sup>**

Continuous or recurrent symptoms of:

- abdominal pain, relieved with defaecation or associated with a change in frequency or consistency of stool

And/or

- Disturbed defaecation (two or more of):
  - altered stool frequency
  - altered stool form (hard or loose/watery)
  - altered stool passage (straining or urgency, feeling of incomplete evacuation)
  - passage of mucus

Usually with:

- bloating or feeling of abdominal distension

disease (PID).<sup>10</sup> Pelvic inflammatory disease should also be considered as a possible cause of CPP in women with a history of any other late sequelae of PID (eg. infertility, ectopic pregnancy), in women with adnexal tenderness/thickening – usually bilateral, cervical motion tenderness, or mucopurulent cervical discharge demonstrated on pelvic examination; or in women whose endocervical swabs demonstrate an infective cause.

Appropriate antibiotics are recommended if PID is suspected, however, because the pain of CPP tends to wax and wane over time, the resolution of pain following this does not necessarily prove that PID was the cause of the CPP.<sup>7</sup>

Peritoneal adhesions (due to pelvic infection, endometriosis or other causes) are thought to cause pelvic pain, especially pain associated with stretching movements or organ distension.<sup>12</sup>

### Irritable bowel syndrome

Olden<sup>13</sup> proposes the following diagnostic approach to patients in whom IBS is being considered:

- confirm there are no 'alarm' symptoms or 'red flags'<sup>14</sup> signifying the possible presence of a structural, infectious, or inflammatory gastrointestinal disorder (*Table 2*)

- determine whether the patient meets the Rome criteria for IBS (*Table 3*), and
- if there are no alarm symptoms/red flags, and the patient meets the Rome criteria, then it is reasonable to proceed with appropriate treatment for IBS. However, failure to respond to treatment within 1–4 weeks, or the development of alarm symptoms warrants re-evaluation of the diagnosis.

The treatment of IBS is centred on an excellent doctor-patient relationship along with drugs targeting the predominant symptom, especially during exacerbations.<sup>15</sup> Olden<sup>13</sup> also reports that an increasing number of studies have shown that patients with symptoms consistent with IBS by the Rome diagnostic criteria rarely benefit from the performance of additional diagnostic testing.

The case study of Helen illustrates some of the complexities relating to the diagnosis and management of CPP (see *Case history*).

#### Case history

Helen T, aged 48 years, presented with a long standing (>20 year) history of mild constipation, intermittent abdominal bloating and excessive flatulence, and intermittent abdominal discomfort (which limited her wearing tight waisted clothing on affected days). She wasn't 100% sure that defaecation relieved the abdominal discomfort, however, she reported that the discomfort was usually mild and seldom lasted more than a day at a time.

More recently, over the preceding 6 months, her bowel motions had changed from mild constipation to up to three rather soft bowel motions per day. She had also developed vague nausea and some epigastric discomfort (unrelated to meals) that occasionally woke her at night. She denied any fever, vomiting, anorexia, weight loss, rash, arthritis, rectal bleeding or mucus, urinary tract infection symptoms, vaginal discharge, dyspareunia, intermenstrual bleeding or hot flushes. Her periods had always been a little erratic, every 28–42 days. She had no obvious depression/anxiety disorder.

#### Medical history

General health: good

Past medical/surgical history: nil of note

Family history: nil of note

Social history: married for 25 years. No change in sexual partner. Three children (all married). Stressful

#### Management of CPP

Specific identified causes of CPP should be treated according to medical guidelines. A Pelvic Pain Expert Working Group consensus statement reports that for women in whom a thorough evaluation reveals no likely cause for CPP, the empiric use of NSAIDs, oral contraceptives, and perhaps antibiotics or antispasmodic is indicated.<sup>16</sup> Women who fail to respond to empiric therapy should be considered highly likely to have endometriosis or adenomyosis and further diagnostic (laparoscopy) or therapeutic (GnRH) interventions should be directed toward the high likelihood of these diagnoses.

A Cochrane systematic review of the management of women with CPP not due to endometriosis, primary dysmenorrhoea, chronic PID or IBS, reported that progestogen (medroxyprogesterone acetate) was associated with a reduction of pain during treatment, counselling supported by ultrasound scanning was associated with reduced pain

job – long and irregular hours most of the time – nothing especially different in the past 6 months except the hectic rush of Christmas around the time of onset of the new symptoms

Cigarettes: nil ever

Alcohol: seldom, 1 glass wine

#### Examination

Abdomen: tender right lower abdomen. No obvious masses felt. No guarding/peritonism

Pelvic examination: moderately large endocervical polyp seen. Pap test and swabs collected. Bimanual examination (no abnormality detected)

#### Preliminary investigations

Normal complete blood count and ESR

Normal electrolytes, renal and liver function

Normal urine microscopy, culture and sensitivity

Pap test, high vaginal and endocervical swabs (normal)

Ultrasound scan of upper and right side of abdomen and pelvis:

- normal renal tract and upper abdomen
- discrepant volume of ovaries noted, with left ovary 5.7 cc greater than the right, but with otherwise no concerning features (discussion with radiologist re ovaries: discrepant size likely of no clinical significance, but should monitor with repeat USS)

#### Initial management

In light of the endocervical polyp and the discrepant ovarian size, Helen was referred to a gynaecologist.

and improvement in mood, and a multidisciplinary approach was beneficial.<sup>17</sup>

## Conclusion

Chronic pelvic pain is a challenge to patient and clinician alike. Sometimes causes/conditions are thought to contribute to the pain, while at other times, no specific diagnosis is found. It is important not to immediately ascribe the cause of pain to psychiatric causes if no organic cause is immediately found; psychological problems may be a cause and/or a consequence of CPP.

Specific causes of CPP that are identified should be treated according to medical guidelines. Diagnosis or cure is not always possible and women in these circumstances should be advised that while our limited medical knowledge limits the assignment of a definite cause and cure, the pain can be managed and psychological support can be provided. For many women in these circumstances, a multidisciplinary approach to care and management produces the best results.<sup>18</sup>

The endocervical polyp was removed and sent for histology (benign). A repeat detailed USS was requested for 2 months later; results confirmed those of the original scan. In the interim, a trial of a proton pump inhibitor was given for her epigastric discomfort, but with no effect, and a trial of symptomatic therapy for IBS was given, but without full resolution of symptoms.

Gastroenterologist assessment supported the likely diagnosis of IBS, with some dyspepsia (likely of benign aetiology). In view of her altered bowel pattern however, colonoscopy was advised. At the same time gastroscopy was performed to check for causes of dyspepsia.

Report: normal upper gastrointestinal tract and normal colon. *Helicobacter pylori* negative. No evidence of coeliac disease on duodenal biopsies. Colonic biopsies were also normal.

### Discussion and follow up

Helen's presentation is not atypical of that for chronic pelvic/lower abdominal pain. She presented with a range of symptoms, some being quite nonspecific and some which could be potentially related to several aetiologies. Her background symptoms were in keeping with IBS, and her more recent symptom of a change in bowel motions from constipation to loose and increased in frequency was also in keeping with the Rome criteria. The sudden change in bowel motion from many years of constipation however, to being

## Summary of important points

- CPP is a diagnostic and management challenge that requires a multisystem approach.
- CPP may have a single cause or multiple causes, with some women never receiving a definitive diagnosis.
- CPP is associated with psychological conditions, however, the establishment of psychosocial factors as cause or effect is difficult.
- CPP cannot always be diagnosed or cured, however, all women require reassurance that their pain can be managed and that psychological support can be provided.

Conflict of interest: none.

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consistently looser and of increased frequency was sufficient for the gastroenterologist to deem colonoscopy mandatory. Additionally, a trial of therapy for IBS had not appreciably relieved her lower abdominal/pelvic symptoms. A trial of therapy for her dyspepsia was also unsuccessful. Subsequent colonoscopy and gastroscopy were normal.

The left ovary being larger than the right ovary raised concerns about possible ovarian pathology, however this was ultimately thought likely to be an incidental and clinically nonsignificant finding. Furthermore, the larger ovary was on the left – the opposite side to the abdominal tenderness.

Several months later, Helen reports an improvement in symptoms. Her bloating and distension seem to have largely settled, as does her upper abdominal discomfort. She still gets occasional symptoms, however, she has been reassured that serious causes have been excluded and the symptoms do not trouble her unduly. She has had the diagnosis and implications of IBS explained. She battles a little with varying her irritable bowel therapies to deal with her episodes of constipation and diarrhoea, and she gets frustrated at times that the treatments do not result in a total cure of her symptoms. She is endeavouring to reduce the stress levels in her job. She continues periodic review and supportive management with her general practitioner.

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