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Chronic Pelvic Pain

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INTRODUCTION

The International Association for the Study of Pain (IASP) defines pain as follows:

> 'Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage'[1].

This definition was introduced in 1979 and is important because it accepts that pain can occur without tissue damage and that psychological factors (learning, memory, the soul, mood, feelings, etc.), as well as sociocultural factors play a vital role in the perception of pain[2].

Being able to experience pain is essential for survival[3]. Acute pain has a protective function: it is abrupt in onset and leads to immediate withdrawal from the cause of the pain as well as to seeking help if the pain is internal or severe. Acute pain disappears as the affected tissues heal. Chronic pain is different. It persists. It may have started with an episode of acute pain, it may be associated with an on-going disease process, but it may also arise without any discernible physical cause[4].

The physiology of pain is complex. The brain and spinal cord have mechanisms that are able to modify the perception of a stimulus and either increase or decrease sensations felt as pain. When a stimulus becomes repetitive (i.e. chronic), for example from persistent inflammation, it can lower the threshold for pain perception so that even normal activity within an organ is perceived as painful[3]. This is why people without objective evidence of disease can still experience pain. Another important aspect of pain is that the mind can think it is originating from one area, but in fact it is coming from another. This happens because nerve fibers from different areas converge as they enter the spinal cord and signals can 'jump' from one nerve to another[3].

Chronic pain is a symptom which, when arising from an internal organ, is often accompanied by other non-painful symptoms from the same organ or area. Chronic pain arising from the pelvic organs can be a symptom of dysfunction in the reproductive tract, gastrointestinal tract (irritable bowel syndrome, IBS), urinary tract (bladder pain syndrome, BPS) or the musculoskeletal system. Chronic pelvic pain therefore comes under the remit of several different specialties.

The time-frame for deciding when a painful experience has become chronic is important for research purposes but not so important in the clinical setting. A helpful working definition suggested by Bonica (cited by Janicki[5]) that does not encompass an actual time frame is as follows: 'If pain persists beyond the usual course of an acute injury or disease, or recurs every few months or years, it is regarded as chronic'.

Definitions of chronic pelvic pain, of which there are many, tend to use a minimum time period of 6 months for the presence of pain. The following is an example: 'intermittent or constant pain in the lower abdomen or pelvis of at least 6 months duration, not occurring exclusively with menstruation or intercourse and not associated with pregnancy'[6].

This chapter will use a mixture of the above two definitions and will discuss the management of women presenting with chronic pelvic pain.

THE CONSULTATION

The first consultation has been shown to be so important that it is likely to be the determining factor

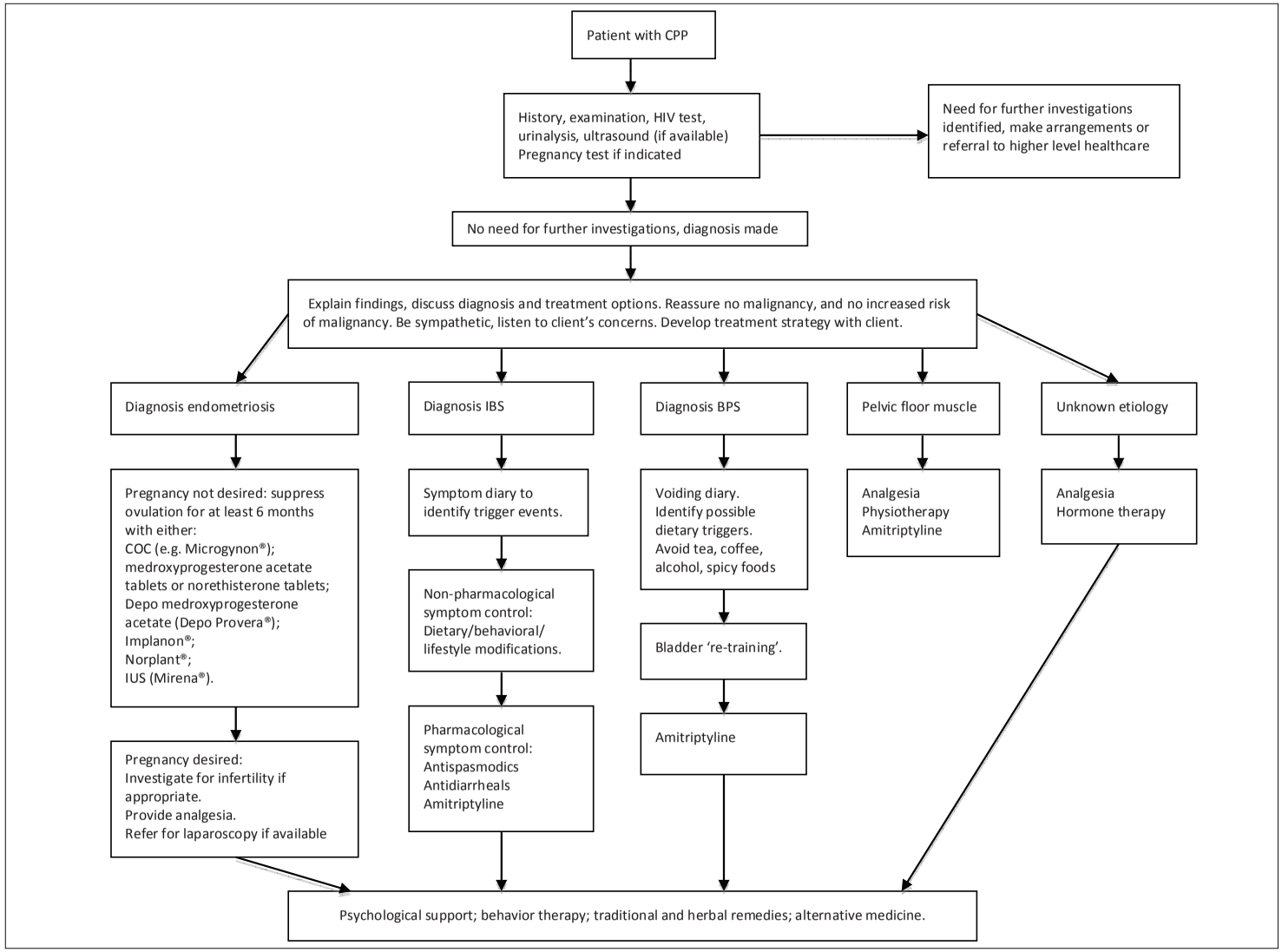

Figure 1 Flow chart showing management of chronic pelvic pain (CPP). IBS, irritable bowel syndrome; COC, combined oral contraceptive; BPS, bladder pain syndrome

in whether the outcome is beneficial[7]. By the end of the consultation the clinician should have decided from which organ system(s) the pain is arising and have formulated a management plan. For an overview of the management see Figure 1.

Women with chronic pelvic pain have symptoms related to their reproductive, genitourinary and intestinal tracts and they will only disclose these symptoms to someone they trust. A 'safe' reason for their visit will be invented and they will make as rapid an exit as possible if their first impressions are unfavorable. This will lead to consultations in other clinics or with traditional healers, with compounding of their pain.

Cultural, ethnic, socioeconomic, religious and gender perspectives, as well as attitudes, beliefs and biases all come to play during the consultation process, affecting both the health provider and their client[8]. In under-resourced countries the socioeconomic differences between health provider and client, especially in the rural areas may be enormous. Even in urban areas there may be wide cultural differences and beliefs and language may also be an issue. Involvement of an interpreter will bring yet another dimension into the consultation. Health providers need to be cognizant of these factors and do everything they can to put their client at her ease.

Greeting clients warmly, introducing one's self and any other people in the room, maintaining eye contact and looking interested help instill confidence, dispel fear and bring hope to what may be felt to be a desperate situation. Health providers should be noticing and assessing their new client as she enters the room: the way she walks and sits down, whether she shows signs of being unwell or in pain, how she responds to being greeted and her general demeanor.

The history

Taking a good history is the most important part of the consultation. It lays the foundation for a structured physical examination, after which the need for further investigations is determined. If possible any medical records held at the clinic should be read before the client enters the room. Hand-held records that the client may have brought with her should be carefully reviewed.

The client's story

This will set the basis for the rest of the consultation and needs to be attentively listened to. Hearing the story is the beginning of the healing process. This is true for any complaint, but is of vital importance for people with chronic disorders, who often feel they are not taken seriously[7]. If the client has previously sought help from elsewhere, it is important to ask why she has come to the present clinic at this particular time and what her hopes for the consultation are. Asking what the client thinks is the cause of her pain is a helpful and often revealing question[9].

If the pain has been present for over 6 months it is unlikely to be caused by a life-threatening illness, but this assumption should not be made. Sometimes the sensitive nature of their symptoms deters women from seeing a health provider in a timely manner, especially if they have had bad experiences in the past, heard negative stories about the health service, are frightened of what may happen to them, or if there are cultural myths about their symptoms that make them difficult to divulge.

The following are important points to clarify about the pain:

- When and how did the pain begin?
- How bad is the pain, does it interfere with everyday activities, is sleep disturbed?
- Is there more than one type of pain?
- Where is the pain, does it move?
- When present how long does the pain last?
- Does anything make it better or worse?
- Does it have any relationship to the menstrual cycle, i.e. worse before, during or after the menses?
- Is sex painful?
- Is defecation painful? Are there any other bowel symptoms?
- Is urination painful? Are there any other urinary symptoms?
- Is walking, sitting or standing for long periods painful?

Menstrual history

Age at menarche and any significant menstrual problems need to be enquired about. Are menstrual problems a current concern? If so, any treatment already received and its effectiveness should

be documented. The date of the last normal menstrual period and if there has been any abnormal bleeding since that date should be noted.

Past medical, surgical and obstetric histories

Enquiry needs to be made about any past serious medical illnesses, including psychiatric illness, any operations, HIV and sexually transmitted infections, and any pregnancies together with their outcomes. For nulliparous women enquiry should be made about their pregnancy intentions. Are they currently trying to conceive, if so, for how long and is failure to conceive an anxiety? Wanting a child is a common reason for women to make repeated visits to a health facility, especially in under-resourced countries where bearing children is especially important for a woman's self-esteem. Past and present contraceptive use should be recorded, together with any unpleasant side-effects.

It is helpful to know whether there is a history of sexual or physical abuse, either as a child, adult, or both. The timing of this enquiry depends on the rapport built up with the client, and it can be done at any appropriate time during the consultation. Although not clearly understood, there appears to be a relationship between chronic pelvic pain and childhood sexual abuse, especially if there is continuing abuse into adulthood[6].

The physical examination

The physical examination is important for eliciting signs that will help formulate the diagnosis. It is also a 'psychodynamic event'[9] and the way the client responds may give an insight into the way they feel. Read more on the gynecological examination in Chapter 1 if you feel unsure about the different procedures. An explanation should be given about how the examination will be conducted, starting with the need to perform an abdominal examination and exploring the possibilities of doing vaginal and speculum examinations. Intimate examinations are usually consented to, but they can in themselves cause much distress especially if a woman has been in an abusive relationship. The health provider must be aware of these possibilities and stop an examination that is causing distress. Women who decline vaginal examinations should not be made to feel they have compromised their chances of being helped. The client should empty her bladder before the physical examination, which will make the procedure more comfortable as well as provide a specimen for immediate urinalysis.

Abdominal examination

Inspection will reveal signs of previous surgery and any obvious masses or distention. If the client is experiencing pain prior to abdominal palpation, asking her to lift her head and shoulders off the bed and enquiring whether this eases the pain or makes it worse will determine whether the pain is originating from within the abdominal cavity or the abdominal wall. Tensing the abdominal wall muscles tends to lessen intra-abdominal pain, whereas the pain will be made worse if the pathology is in the abdominal wall[10].

Abdominal palpation should commence in a pain-free site and proceed systematically around the whole abdomen. Any tender areas, obvious masses or loaded bowel should be noted.

Speculum examination

This is advisable for women who are sexually active, and should always be performed if there has been post-coital bleeding, an abnormal vaginal discharge or if the client has never had their cervix inspected. Sometimes bluish deposits of endometriosis can be seen in the posterior fornix. Cervical screening is not readily available in under-resourced countries and many women with cervical cancer present with untreatable late-stage disease. Opportunistic detection of early cervical cancer gives the only chance for surgical cure when radiotherapy services are unavailable. If the cervix looks normal and vaginal inspection with acetic acid (VIA) is a service that is locally available, information can be given to the client so that if appropriate she can attend at her convenience (see Chapter 26 on how to do VIA).

Vaginal examination

Inspection of the vulva will reveal signs of irritation, inflammation, ulcers, warts or discharge. Digital examination should be omitted in anyone who has not been sexually active or anyone who prefers not to have this done. If digital examination is declined or not tolerated, gentle examination

with a long cotton-wool bud may be agreed upon and can give useful information.

Initial digital examination should be with one finger to minimize discomfort so that potential painful areas can be better localized. If well tolerated, two fingers can be inserted later to aid further examination. Gentle palpation of the anterior vaginal wall will determine any urethral or bladder base tenderness. Examination of the posterior vaginal wall and posterior fornix will reveal any tender nodules that could indicate endometriosis. Asking the client to contract and relax her pelvic floor muscles, together with gentle digital examination of the muscles, can assess pain originating in the pelvic musculature. Bimanual examination will determine the size, position, mobility or fixation of the uterus, whether the uterus is tender and whether there are any obvious adnexal masses.

Additional examinations

Women with the following signs and symptoms need additional investigations and possibly referral:

- Rectal bleeding/blood in stool: proctoscopy, possible colonoscopy or barium enema
- Macroscopic hematuria: cystoscopy and intravenous pyelogram (IVP)
- Microscopic hematuria, after excluding cystitis, schistosomiasis and tuberculosis (TB), and repeating the test: cystoscopy and X-IVP
- New bowel symptoms over age 50: colonoscopy or barium enema
- New pain after the menopause: ultrasound
- Pelvic or abdominal mass, including fibroids (see Chapter 19): ultrasound and possible surgery
- Ascites: ultrasound and if possible cytology of ascites and staining for TB
- Irregular vaginal bleeding over age 40: ultrasound and VIA/cervical biopsy/endometrial biopsy
- Post-coital bleeding: VIA and if possible chlamydia screening or presumptive treatment for chlamydia and gonorrhea followed by reassessment after 4 weeks
- Cervix suspicious of carcinoma: biopsy of cervical lesion/urgent surgery as deemed appropriate
- Excessive weight loss: HIV test, consider possible malignancy

Investigations

Urine, stool and pregnancy testing

Simple dipstick testing of urine, preferably on a midstream specimen, should be performed. If macroscopic hematuria is present the client needs further investigation, but always check she is not menstruating! The presence of leukocytes or nitrites may indicate cystitis and if the client is symptomatic a course of antibiotics should be prescribed according to local guidelines. If microscopic hematuria is detected the sample should be sent for microscopy to exclude schistosomiasis, and consideration given to testing for tuberculosis. Tuberculosis can mimic almost any disease and in endemic areas should not be forgotten. Microscopic hematuria is quite common and can occur after exercise and sexual intercourse, and for transient unknown reasons. Before referral for more extensive investigations the test should be repeated twice. Urinary tract cancer is extremely rare in women under 40[11]. Other medical causes (including sickle cell disease) would be inferred from the history. Microscopy of a stool sample should also be arranged, as parasitic infections can cause abdominal/pelvic pain.

Pregnancy testing may be important depending on the menstrual history.

Blood tests

All women should be offered HIV testing if their status is unknown or if they have concerns regarding sexual exposure since a previous negative test. Missing this opportunity in a client complaining of abdomino-pelvic pain would be negligent. A full blood count with differential is a good basic test if available. Other blood tests should be ordered depending on the clinical findings and their local availability.

Ultrasound scanning

Ultrasound scanning is becoming increasingly available in low-resourced countries. Abdominal ultrasound should be used to assess the uterus and ovaries in adolescents with pelvic pain, in women who decline a vaginal examination and all women who have an abdominal mass. Transvaginal scanning is superior to abdominal scanning for visualizing pelvic masses and is useful for detecting adenomyosis and small endometriomas that would indicate endometriosis, or hydrosalpinx that would

indicate chronic pelvic inflammatory disease. Peritoneal deposits of endometriosis will not be visualized. The vaginal probe can be used to identify particularly tender areas, and an experienced ultrasonographer is able to detect the position and mobility of the ovaries. Immobility of an ovary may be predictive of endometriosis or adhesions[12].

Infertility investigations

Infertility is probably one of the commonest causes of chronic pelvic pain in under-resourced countries, the pain often not being reproducible during physical examination, but rather being an emotional pain. If this is the working diagnosis, investigations for infertility according to local protocols should be arranged. If the client has not come with her partner she should be encouraged to return with him so that they can be seen together. The commonest cause of infertility in low-resource settings is infection-related tubal damage. Unfortunately women and men in under-resourced countries do not have access to the treatment options available in richer countries, but compassionate management should instill hope, as it is rarely possible to state that a woman will never be able to conceive.

After conducting the clinical examination and reviewing the results of all tests undertaken the clinician should have come up with a working diagnosis on which to base treatment. The following conditions are the most likely to cause chronic pelvic pain and will now be reviewed. It is possible for more than one condition to be present in the same individual:

- Endometriosis
- IBS
- BPS
- Pelvic muscle dysfunction
- Adhesions

ENDOMETRIOSIS

Endometriosis is 'the presence of endometrial-like tissue outside the uterus which induces a chronic inflammatory reaction'[13]. It is an estrogen-dependent condition, with symptoms usually appearing after the menarche and resolving after the menopause. Risk factors for endometriosis include: early age at menarche, short menstrual cycles, heavy menstrual flow, painful menstruation, infertility, endometriosis in a first-degree relative, and immune disorders[14].

Three different forms of endometriosis have been described, and any mixture of lesions is possible[15]:

- Peritoneal endometriosis, where endometriosis is found on the pelvic peritoneum and/or the surface of the ovaries.
- Endometriomas, which are ovarian cysts lined with endometrial-like tissue and containing a thick, tarry, 'chocolate-like' fluid.
- A solid mass of endometrial-like tissue mixed with fatty and fibrous tissue that forms nodules between the vagina and rectum.

Endometriotic lesions can vary from being very small and barely visible, to lesions causing large ovarian cysts, extensive adhesions and sometimes infiltrating into the bowel and/or bladder.

About 30–50% of women with endometriosis are infertile[16]. However, normally fertile women have also been found with endometriosis. Infertility is to be expected when endometriosis causes adhesions with blockage or distortion of the fallopian tubes, but for reasons not fully understood women with mild disease can also have difficulty conceiving.

Diagnosing endometriosis

A working diagnosis of endometriosis is made from a combination of symptoms and physical findings. Transvaginal ultrasound if available (or abdominal ultrasound in those not sexually active) may be helpful, especially for diagnosing endometriomas. The following symptoms have been shown to be relevant to a diagnosis of endometriosis:

- Dysmenorrhea
- Menorrhagia
- Irregular menstrual cycle
- Deep dyspareunia (which may indicate involvement of the uterosacral ligaments)
- Pain in the lower abdomen/pelvis that is poorly localized and may be constant or cyclical
- Urinary tract symptoms: frequency, pain on micturition
- Past diagnosis of irritable bowel syndrome
- Past history of ovarian cysts
- Difficulty conceiving
- Past episodes of pelvic inflammatory disease
- Sleep disturbances.

Women with more than one of the above are significantly likely to have endometriosis compared to women without endometriosis[17]. They should be offered treatment depending on whether or not they are trying to conceive.

Treatment of endometriosis

Hormonal therapy, analgesics and surgery all have a role to play in patient management, which needs to be individually tailored according to symptoms and desire for fertility. Open discussion with women about the effectiveness and side-effects of the different options and encouraging their active involvement in deciding which option to choose, gives the best chance for success.

Hormonal therapy

Inhibition of ovulation is often effective in suppressing endometriosis and controlling cyclic pain and menstrual disorders. However, it is only an option for women who accept that they will not conceive while on medication. There is no evidence that suppressing ovulation for a period of time will improve the later chance of conception[16] and women should not be falsely lead to believe that it will. Therapy should be continued for as long as necessary, symptoms being likely to recur when it is stopped. A minimum of 6 months is recommended[18].

The combined oral contraceptive (COC) pill is usually readily available in under-resourced countries as part of their family planning programs. Any low-dose COC (not more than 35 μg ethinylestradiol) can be used. It is best taken continually, rather than in the traditional cyclic way, so that menstruation is abolished[18]. This means explaining to women that they should discard the seven placebo tablets in each packet if pills with these are the only options available. Breakthrough bleeding is the main side-effect of taking the COC continuously, but if this happens a 7-day break can be taken and the pills then re-started. Some women find taking a 5- or 7-day break every 3 months prevents breakthrough bleeding. Analgesics can be taken to augment pain relief if necessary.

Women with contraindications to an estrogen-containing pill, or women who have had previous unacceptable side-effects with the COC, can try a progestogen-only method. The injectable depot medroxyprogesterone acetate (DMPA), 150 mg every 3 months is very effective. Progestogens can also be given orally, e.g. medroxyprogesterone acetate or norethisterone, starting at 10 mg daily and increasing the dose if breakthrough bleeding occurs. Women may prefer the option of trying one of the progestogenic implants, whichever is available. There is some evidence that the etonogestrel implant is as effective as DMPA in relieving endometriosis-related pain[19]. Irregular bleeding is a common side-effect of progestogen therapy that may take several months to settle.

The levonorgestrel intrauterine system (IUS) is another option. This device reduces menstrual flow, often induces amenorrhea, and has been shown to have a beneficial effect on endometriosis in some women[20]. Levels of circulating hormone are extremely low which may make the method more acceptable for women with hormonal side-effects from the other methods. Unfortunately, it is rather expensive in some countries and not available in all under-resourced countries.

Women wanting to conceive

The treatment options for women who want to conceive are limited to analgesia or, if appropriate, surgery. Referral for laparoscopy, if available, can be considered. A history suggestive of endometriosis does not mean that endometriosis is definitely the cause of failure to conceive, and a couple should be investigated in the same way as any other couple with subfertility.

Analgesics for chronic pelvic pain

Effective analgesia is very important for women with chronic pain, whatever the cause. Once this has been achieved, there is a better chance of breaking the vicious pain cycle with return to normal function and daily activity. It is important to work with the client giving her a range of options and strategies that will enable the best analgesic choices to be made. Avoiding addictive narcotic analgesia should be a major aim. There are three main types of analgesic drug: non-steroidal anti-inflammatory drugs (NSAIDs), paracetamol and opioids.

Non-steroidal anti-inflammatory drugs

NSAIDs are drugs that work by preventing prostaglandin release. Prostaglandins are formed in almost all tissues in the body and have diverse effects. They are intimately involved in the inflammatory

response and can reduce pain thresholds by effects on both the peripheral and central nervous system[21]. NSAIDs are particularly useful when pain is the result of inflammation, as in endometriosis, but can also be helpful in other types of pain.

The side-effects of NSAIDs relate to their interference with other physiological properties of prostaglandin production, including reduction of gastric acid, bronchodilator effects and renal vasodilator effects[22]. They are specifically contraindicated for women with a history of gastric ulceration, asthma or renal disease. There is some evidence that NSAIDs may interfere with the process of ovulation, so they are probably best avoided in women having difficulty conceiving[23].

Ibuprofen is probably the most universally available NSAID, but it does not matter which one is prescribed (other examples are indometacin, diclofenac and mefenamic acid). Commencing medication a day or two prior to the expected onset of cyclical pain gives better pain relief, and the medication should be continued for 7–10 days.

Paracetamol

Paracetamol inhibits prostaglandin production in the brain but has hardly any effect on prostaglandin synthesis elsewhere[22]. It does not have the same side-effects as NSAIDs and is therefore a useful drug when these are contraindicated. It can be used in conjunction with NSAIDs when alone they are not providing enough pain relief.

Opioids

Opioid drugs are extremely effective analgesics. They bind to specific opioid receptors found in the nervous system which are involved with pain inhibition. Opioids are either extracts of the opium poppy or synthetic/semisynthetic drugs with a similar action. Morphine and codeine are both natural opium derivatives.

Morphine is a strong analgesic that should only be used to manage severe pain. It is highly addictive and is not needed in the routine management of chronic pelvic pain.

Codeine is a much weaker opioid analgesic than morphine, and is effective in the management of mild to moderate pain. It can be used together with a NSAID or with paracetamol, and may be available in tablet form as a fixed combination. However taking the medications as separate tablets is preferable if the combination preparations contain inadequate dosages. Constipation is a side-effect of codeine, which can be a limiting factor but may be an asset for women with episodic diarrhea. It is much less addictive than morphine.

Adjuvant drugs

These are drugs that are not analgesics, but when used alongside analgesics can reduce the perception of pain. The tricyclic antidepressant amitriptyline is effective and usually readily available. It not only has an antidepressant effect, which may be of major benefit, but it also increases the effectiveness of the natural pain-inhibition processes within the nervous system[21]. Its mild sedative effect can be beneficial. The usual dose is to commence with 10 mg in the evening, increasing slowly by increments if needed, up to 75 mg. Other antidepressants may be more appropriate if clinical depression is significant.

Surgery

Surgery is indicated for women with pelvic masses, or ovarian cysts/tumours that may be endometriotic but could be of more sinister origin. It may also be indicated if fibroids are present as they can sometimes be the cause of chronic pain (see Chapter 19). Surgery may be difficult and should only be undertaken by experienced clinicians in hospitals that can deal with unforeseen complications, including damage to bowel, bladder and ureters.

Women must fully understand the proposed procedure. If fertility is desired the aim should be to do the minimum to enable this possibility. However, women need to be counseled that hysterectomy may become necessary depending on the findings. Endometriomas should be completely excised as it has been shown that if the cyst wall is not removed, recurrence is more likely. Hysterectomy and removal of both ovaries may be the best option for women not wanting their fertility who have failed to respond to conservative treatment[24].

IRRITABLE BOWEL SYNDROME

IBS is one of the functional gastrointestinal disorders (FGIDs). Functional disorders are ones for which: 'there is no evidence of an inflammatory, anatomic, metabolic, or neoplastic process that explains the patient's symptoms'[25].

They are relatively common disorders in the Western world but may be less so in under-resourced countries, although differences in health service provision, as well as significantly fewer research possibilities, makes comparison difficult. A systematic literature review conducted in 2005 to assess the influence of geography and ethnicity on IBS concluded there was 'no convincing evidence of a difference between western and developed countries'[26].

Definition

Criteria have been developed and regularly reviewed, known as the Rome criteria, on which a diagnosis of an FGID can be based[27]. This classification divides the FGIDs according to the most likely site of gastrointestinal dysfunction, from esophagus to rectum. It acknowledges that there is often an overlap between the different disorders and that, as they are common, there is a high possibility of co-existence with other diseases. The disorders affecting bowel dysfunction include IBS, functional bloating, functional constipation and functional diarrhea. Of these, only IBS has an element of pain or discomfort. IBS can co-exist with any of the other functional bowel disorders. Symptoms are known to fluctuate in all individuals with any FGDI.

The following are the Rome III diagnostic criteria for IBS. Symptoms must have begun at least 6 months prior to the patient presenting, and been present during the previous 3 months, to indicate current disease activity[27]: recurrent abdominal pain or discomfort for at least 3 days per month associated with 2 *or more* of the following:

- Improvement with defecation
- Onset associated with a change in frequency of stool
- Onset associated with a change in form (appearance) of stool.

Diagnosis

IBS is a diagnosis based on symptoms and the exclusion of organic disease. A full history and physical examination will reveal the need for further investigations. If there are none of the following 'alarm' symptoms or signs, then a diagnosis of IBS can be made and treatment commenced[28].

Alarm symptoms/signs

- Rectal bleeding
- Weight loss
- Fever
- Anemia
- Family history of colon cancer
- Abdominal/pelvic mass
- High erythrocyte sedimentation rate

A stool sample should always be sent for microscopy to exclude parasitic infections and an HIV test result should ideally be known.

Treatment

This will begin with an explanation of the condition. Individuals need to be told that for various reasons, which may or may not become evident, their intestines have become over-responsive to certain stimuli that would otherwise not cause symptoms. Recording symptoms in a diary over a period of a few weeks may identify those factors that cause an exacerbation of symptoms. These may be related to diet, stress or almost any activity or event. Reassurance should be given that IBS is not a cancer and does not increase the risk of cancer developing.

When certain trigger events have been identified, help may be needed to enable the individual develop better coping strategies, rather than relying on medication. How easy it is to do this will depend on the local services available. In the first instance it may be something the woman can explore with her own family or a close friend/confidant.

If various food items are known to trigger symptoms, dietary modification will be helpful. Unduly restrictive diets have not been shown to be effective. When constipation is troublesome, increasing dietary fiber will help; if diarrhea is a problem, reducing the amount of dietary fructose may help; if bloating is troublesome reducing the intake of foods that ferment, such as cabbage and beans, may be all that is needed[29].

If symptoms are more severe or not controlled by life-style adjustments, specific treatment should be offered depending on the most troublesome symptoms at the time. It needs to be stressed that symptoms are likely to wax and wane and that pharmacological treatment should be discontinued when the condition subsides.

Antispasmodics

Antispasmodics are often helpful as IBS is associated with increased colonic motility. The precise medication used will depend on local availability. Hyoscine butylbromide has been shown to be effective and well tolerated for the treatment of recurrent crampy abdominal pain in a dose of 10 mg 3 times daily. It is poorly absorbed from the gastrointestinal tract and exerts its effects mainly by local action[30].

Bulking agents and antidiarrheals

These are indicated only if there are associated symptoms of constipation or diarrhea that have not responded to dietary manipulation. Bulking agents do not improve symptoms of IBS unless there is associated constipation. Likewise loperamide in a dose of 2–4 mg up to 4 times daily improves diarrhea, but does not improve other symptoms of IBS[29].

Tricyclic antidepressants

Amitriptyline in a dose of 10–25 mg at night, may be of benefit for patients whose pain does not improve with the above suggestions.

BLADDER PAIN SYNDROME

The bladder is a significant pelvic organ that can be involved in a number of disease processes causing chronic pain. In order to clarify the criteria for diagnosing chronic pain arising in the bladder, the European Society for the Study of Interstitial Cystitis in 2008 proposed that the term bladder pain syndrome (BPS) is used when:

'Chronic pelvic pain (>6 months), pressure or discomfort, perceived to be related to the urinary bladder is accompanied by at least one other urinary symptom such as persistent urge to void or urinary frequency. Confusable diseases that could cause the symptoms should be excluded'[31].

The main treatable diseases ('confusable diseases') that need to be excluded are:

- Urinary tract infection: microscopy/culture of urine (if facilities available) or response to antibiotics
- Chlamydia infection of the urethra: history, sexual risk factors, swabs or urine tests if available (see Chapter 17)
- Schistosomiasis: microscopy urine and stool, biopsy of cervix
- Bladder stone, ureteric stone: history, IVP
- Bladder malignancy: presence of macroscopic hematuria needing cystoscopy, ultrasound, cystograph
- Tuberculosis: general examination + chest X-ray for pulmonary tuberculosis. Staining/culture of urine for tuberculosis especially if sterile pyuria
- Overactive bladder: women complain that when they feel the need to void they have to rush to the toilet or they may wet themselves. They do not complain of pain
- Endometriosis: can occasionally affect the bladder and would cause hematuria.

The cause of BPS is unknown, but hypotheses include inflammation, autoimmune mechanisms (there is an association with systemic lupus erythematosus, Sjögren's syndrome and inflammatory bowel disease), and abnormalities of the bladder wall[32].

Diagnosis

The pain of BPS is typically suprapubic, it may be a sharp pain but can also be more of a burning or pressure pain. It characteristically occurs as the bladder fills, and is relieved by voiding[33]. The pain must be accompanied by at least one other urinary symptom, which in practice usually means multiple symptoms including urinary symptoms related to intercourse. Sometimes there is referred pain to the back, groin or vagina, and pain may be worse during menstruation. Physical examination may reveal bladder tenderness but is otherwise unremarkable. Urinalysis is normal.

A voiding diary is often helpful. The woman records her fluid input as well as her perception of pain and the amount of urine she passes each time she voids over a 3-day period. Women should also note any foods or drinks that make the pain worse.

Treatment

This must begin with a full explanation of the condition, that symptoms are likely to fluctuate over time, but worsening is uncommon, and there is no association with later development of bladder cancer. Many sufferers of BPS find that certain foods and drinks make their symptoms worse. Acidic and spicy foods, coffee, tea, carbonated and alcoholic drinks seem to be the most troublesome. Avoiding these substances may be helpful[34]. Fluid restriction should not be advised as this can increase pain.

Bladder 'retraining' may be helpful. With this the woman is encouraged to very slowly increase the time between each act of voiding, so gently increasing bladder capacity[35]. Analgesics such as paracetamol and NSAIDs can be taken if necessary.

Amitriptyline is the mainstay of treatment. It works in a number of ways to reduce pain, increase bladder capacity, reduce frequency and aid sleep[36], actions that should be explained to the women for whom it is prescribed. It is not being prescribed as an antidepressant.

Women should be referred for a urological opinion if their symptoms are severe or do not improve.

PELVIC FLOOR MUSCLE DYSFUNCTION

The pelvic floor muscles play a vital role in: maintaining pelvic stability, childbirth, maintaining urinary and fecal continence and female sexual function. Weakening of the pelvic floor muscles as a result of difficult childbirth and/or repeated childbearing can increase the risk of genital prolapse and urinary stress incontinence. Overactive, chronically tense, pelvic muscles are associated with constipation, BPS, dyspareunia and endometriosis and it is often difficult to determine whether the increased muscle tone is the cause or effect of these complaints. A history of sexual abuse is another risk factor[37].

When a muscle becomes chronically tense there is often a specific sensitive area within the muscle that can be localized by palpation during vaginal examination. This area is called a trigger point. Trigger points can be aggravated by specific movements and alleviated in certain positions so that patients may for example, sit on one buttock and move cautiously.

Treatment is difficult in under-resourced countries as it is best undertaken by physiotherapists with a special interest in this problem. The condition is likely to improve when associated conditions such as IBS, BPS or endometriosis are controlled.

Analgesics and amitriptyline should be tried.

ADHESIONS

Adhesions may develop in the pelvis from pelvic inflammatory disease, endometriosis, appendicitis and after any surgical procedure, such as cesarean section, salpingectomy, ovarian cystectomy and hysterectomy. Although often presumed to be the cause of pain, evidence for this is lacking[38]. It is unlikely that repeat surgery for adhesions will improve chronic pelvic pain and may make it worse. It is better to counsel the patient, provide pain relief with NSAIDs and/or paracetamol and give dietary advice so that bloating and constipation are avoided.

There are two situations when adhesions do appear to be the cause of pain. One is 'retained ovary syndrome', when an ovary left *in situ* at the time of hysterectomy becomes buried in dense adhesions, and the other is 'ovarian remnant syndrome', when a small part of an ovary is left after oophorectomy and becomes involved in dense adhesions. In both these circumstances ovulation suppression is usually helpful[6]. Repeat surgery is likely to be difficult and should not be undertaken by the inexperienced.

MANAGEMENT OF 'UNEXPLAINED' CHRONIC PELVIC PAIN

If the history and examination do not point to any specific cause of the pain, reassurance is vital and analgesia as described earlier should be made available. Hormonal treatment as explained above for endometriosis is often also helpful.

PSYCHOLOGICAL ASPECTS OF PAIN MANAGEMENT

The psyche has an important role to play in the perception of pain. A person's feelings are extremely important in their appreciation of and ability to cope with pain. Fear will make pain worse. Wanting to know the cause of physical pain is normal. When a cause is not found, and adequate explanation has not been given, a patient is likely to seek advice from either another health clinic (repeating the whole cycle of investigations) or from outside the formal health sector. Health workers must explain 'negative findings' carefully to their client so that relief that a serious underlying disorder has not been found, rather than concern that one has been missed, becomes paramount. Involving a close relative or friend in the discussion may be beneficial.

Behavioral and other therapies

Unfortunately, access to psychological help is not readily available in under-resourced countries, but

if the possibility exists it should be utilized. Encouraging gentle resumption of activities can be beneficial together with setting obtainable goals over a sensible time period[39]. Taking an interest in the client's progress and keeping the door open for them to return if they feel they are not improving are important strategies. Clients who are clinically depressed need to be appropriately referred for effective management.

Traditional healers, complementary therapy and herbal remedies

Traditional healers play an important role in the health care of many people in under-resourced countries. If clients want to use herbal remedies, or seek spiritual help from traditional healers this should not be discouraged, as long as these clients have been fully investigated, understand the findings/or lack of findings, and are aware of the conventional medical options available. They should try to identify healers who are registered with local relevant associations and need to be aware that the efficacy, based on research, of many herbal remedies is unknown[40]. Sometimes there can be strong beliefs in witchcraft as the cause of pain[41]. It may not be possible for a health provider to dissuade a person from these beliefs.

Possibilities may exist for a health facility to identify relevant traditional healers in their surroundings and initiate co-operation/training with them so that they can take care of clients with chronic pain (when no identifiable cause has been found) in the framework of home-based care programs. This could reduce the patient burden for the health facility.

Recognized complementary medical practice, such as acupuncture, may not be available in under-resourced countries outside Asia, but if they are and women want to use them, this should be encouraged[41].

CONCLUSIONS

This chapter has given an overview of the causes and management of chronic pelvic pain in women. Psychological factors have an important role to play in the etiology of chronic pain, and the quality of interactions with health providers whom women consult will have a major impact on whether a successful outcome for individual women is achieved. Most women with chronic pelvic pain have no identifiable disease process, but this will only be determined after full history taking, physical examination and basic investigations. Chronic pain syndromes tend to fluctuate in intensity over time and are rarely cured; however they do not progress to become malignant diseases. Women with these conditions tend to be poorly managed in under-resourced countries because of the high work load of clinicians. However caring clinicians can easily help most women, even when only basic resources are available, resulting in professional satisfaction and clients who will not be a strain on the health sector.

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