Note: This article cannot explore in depth all the various causes of chronic pelvic pain. It will deal briefly with the more common causes and those most relevant to arachnoiditis patients.

The term ?Chronic Pelvic Pain' is generally used with reference to women; however, men may also experience pelvic pain (though obviously the gynaecological causes are irrelevant): arising from the gut, a hernia, or from the spine.

?Perineal pain': in the saddle or crotch area and often affecting the rectum and/or genitals may be quite persistently troublesome for patients with arachnoiditis, regardless of their gender.

However, in the broad clinical context of this article, distinction will not be specified in the following information:

Causes of pelvic pain:

Chronic pelvic pain may arise from a variety of different causes.

These may broadly be divided as follows:

- Urinary tract causes:
- A. Infection(UTI);
- B. Interstitial Cystitis: an inflammatory condition of the bladder. A special cystoscopy test of the hyperinflated bladder is necessary as the normally distended bladder will not show the small abnormalities in the lining.

- Gastrointestinal causes:

- A. Irritable Bowel Syndrome (IBS) associated with abnormal bowel habit (diarrhoea or constipation or fluctuating between the two;
- B. Inflammatory Bowel Disease : Crohn's/Ulcerative Colitis; these conditions will be associated with abnormal bowel habit, usually diarrhoea, often with blood in the stool. Crohn's can affect any part of the gastrointestinal tract (mouth to anus) whereas UC tends to only affect the large bowel. Both are autoimmune conditions.
- C. Hernia: abdominal or inguinal (groin): women should be examined standing to check for this as lying down, the hernia may not be apparent.

- Gynaecological causes: Chronic pelvic pain accounts for some 10% of outpatient gynaecology referrals in the United States and around 20% of laparoscopy procedures.
- A. Endometriosis(abnormal deposits of the lining of the womb in areas outside the womb, in various sites in the pelvis and/or abdominal cavity, leading to internal bleeding (low grade) inflammation as a response and subsequent scarring (fibrosis);
- B. Chronic Pelvic Inflammatory Disease(inflammation often after an acute infection, becoming chronic and resulting in scar tissue which causes
- C. adhesions (which ?glue' pelvic/abdominal organs to each other, damaging their structure and function);
- D. Mittleschmertz (benign pain during ovulation);
- E. Ovarian Remnant Syndrome(after total hysterectomy, part of ovary may remain);
- F. Ovarian cysts;
- G. Pelvic congestion Syndrome;
- H. Cyclic pelvic/uterine pain varies with the menstrual cycle: includes painful menstruation (dysmenorrhoea) and may be associated with heavy menstrual bleeding (menorrhagia);
- I. Uterine fibroids: non-malignant growths in the wall of the womb. May also be associated with painful and/or heavy periods, abdominal discomfort, low back pain.

- Neurological causes: not a widely recognised association, but may well be more common than previously reported. Lumbosacral problems may present atypically with pelvic pain, which may be construed as gynaecological in origin or even psychogenic (psychosomatic).
- Failure to find a gynaecological cause should lead to a suspicion of spinal/neurological abnormality before assumption of psychosomatic origin. Meralgia parasthetica: associated with tingling/pain in the outer part of the thigh down to the knee; may be present in pregnancy, obesity or be due to trauma.

- Musculoskeletal causes: may be cited; these may be related to abdominal wall trigger points, which could respond to local anaesthetic injection or to appropriate physical therapies such as massage or myofascial release.
- Musculoskeletal problems often arise secondary to arachnoiditis. Especially common is Fibromyalgia, which is frequently associated with chronic pelvic pain.
- Trigger points may be present in several areas of the body and a generalised abnormality of pain processing causes hyperalgesia (amplified pain perception)
- In addition, it is quite common to see overlap between fibromyalgia and conditions such as

Irritable Bowel Syndrome and Interstitial Cystitis.

- Other musculoskeletal causes include Pelvic floor tension myalgias: spasms of the muscles in the pelvic floor; muscle spasms in general are common in arachnoiditis; Piriformis syndrome: due to entrapment of the sciatic nerve as it passes through the buttock muscles (gluteals); if these are in spasm there will be pain on internal rotation of the hip against resistance; often associated with fibromyalgia (which may occur secondary to arachnoiditis)
- Commonest in individuals who sit for long periods. Psoas inflammation: this muscle may be affected by pelvic adhesions; when lying on the side, pain is felt on extending (straightening) the leg.
- Sacroiliac joint inflammation: the joint between the back of the hip girdle and the sacral part of the spine; this may lead to pain in the buttock. Fractured coccyx: tension in the pelvic floor may cause the bone to swing forward.
- Psychological causes: A.
- Major depression;
- B. history of sexual abuse.

Neuro-anatomy;

In order to best appreciate the causes of pelvic pain of neurological origin, one must understand the innervation of the pelvic organs.

1. spinal level: T9-10: supplies the outer part of the fallopian tubes, the upper ureter (where it enters the kidney) and the ovaries. Sympathetic nerves(involved in involuntary processes) are also involved at this level.
2. T11-12 : supplies: uterine fundus (top of the womb); inner third of the fallopian tube; broad ligament (supports the womb), upper bladder, proximal large bowel and appendix.
3. S2-4 : supplies perineum (saddle or crotch area); vulva (opening of the vagina) ;vagina; lower uterus and cervix; posterior urethra; trigone area of the bladder (where ureters enter); lower ureter; rectosigmoid colon(lowest part of the large bowel).

One can now see that abnormalities in the nerve roots arising from these spinal levels have implication for most of the pelvic organs.

It is therefore unsurprising that in chronic Cauda Equina Syndrome, saddle sensation may be lost and there may be chronic neurogenic (burning) pain in the pelvic region (being neurogenic,

it may be felt in numb areas). Also, there may be problems with bladder and bowel function, as well as sexual dysfunction.

The pudendal nerve may be implicated in abnormal sphincter function. It arises from S2-4. Pelvic and parasympathetic nerves also arise from this part of the sacral region.

Diagnostic Clues:

- Pelvic examination: digital examination may reveal areas of tenderness in the vulva (vulvitis, thrush, vestibulitis) vagina (infection; scar tissue from episiotomies), cervix: motion tenderness suggests endometriosis or adhesions if mild or pelvic inflammatory disease if severe (history of infections including sexually transmitted: or may be silent: test for chlamydia); a retroverted (facing backwards) uterus may be associated with: endometriosis, pelvic adhesions, low back pain during menstruation, pain on intercourse and pain on abdominal palpation. The womb may be enlarged if there are fibroids. Vaginal and rectal exam. helps to reveal pelvic floor laxity: vague pelvic ache or sensation of pressure or ?something falling out' may be felt; womb prolapse may be present.
- Cultures: swabs may be taken to exclude infection. These include a ?high vaginal swab' to detect a specific infection by chlamydia, which may not cause symptoms at the time of initial infection. Positive results might indicate pelvic inflammatory disease.
- Cervical smear may be taken to exclude any malignancy of the cervix.
- Laparoscopy; using a telescope inserted through a small incision just below the umbilicus; pelvic organs can be visualised directly and endometriosis, ovarian cysts, adhesions, fibroids can be detected.
- Imaging: ultrasound can detect fibroids and other abnormalities; CT and MRI may also be used.
- Pain mapping: a microlaparoscope is used with the patient awake and able to tell the examining doctor when stimulated areas are painful.

Specific conditions:

(please note that other articles in this series discuss gastrointestinal and musculoskeletal disorders; urinary tract disorders are discussed in more detail elsewhere in this article.)

Pelvic congestion syndrome:

Caused by varicose veins in the pelvis. Symptoms may include pelvic pain that worsens towards the end of the day or after long periods of standing, pain during or after intercourse or swollen veins in the vulva.

There may also be heavy periods and urinary frequency.

It is difficult to diagnose and many women will have been unable to find a diagnosis despite numerous consultations and tests, and may have been labelled as "psychosomatic" cases.

Special ultrasound and MRI tests may pick up this problem.

Once the diagnosis has been established, a venogram is performed: an X-ray of the pelvis with dye injected to show the abnormal veins; these can then be blocked by injecting tiny coils through the catheter into the vein, reducing the blood flow to the affected area and shrinking the varicose veins ("embolisation"); this is successful in around 80% of patients.

Alternatively, non-invasive options include hormones to suppress ovulation.

Management of chronic pelvic pain:

- Analgesia as appropriate. Note: menstrual cramps are unlikely to respond to narcotic medication, but should be relieved by ?simple analgesics' such as paracetamol(acetaminophen).
- Massage/myofascial release for muscle tension/trigger points
- Usual treatment of urinary/gastrointestinal/gynaecological disorders. (hormones/antibiotics etc.)
- Laparoscopic lysis of pelvic adhesions: pain relief if no chronic pain syndrome present=75%; if chronic pain syndrome present=40% or less. Note also probable recurrence of

scar tissue and thus adhesions.

- In about 33% of diagnostic laparoscopy, no apparent pelvic pathology is found.
- In the majority of arachnoiditis patients, chronic pelvic pain is most likely to be due to secondary musculoskeletal problems; in a smaller number it may be related to direct nerve damage. However: new or increasing symptoms should always be assessed by a doctor.
- NOTE: surgery (e.g. hysterectomy) is NOT a cure: it is only a part of the plan.

VAGINAL DISCHARGE:

Most women have a continuous discharge from the vagina which is greater in mid-cycle (between periods). It may become thick but usually has little smell and is not itchy.

Discharge is abnormal when:

- It is itchy
- Vagina feels sore
- Excessive smell
- Suddenly increases for no clear reason

Causes of abnormal discharge include:

- Infection
- Irritation: deodorants/nylon (in pants/tights); allergy to contraceptive cream or rubber.

There are 3 main types of infection:

- Thrush: causes a cheesy, whitish-yellow discharge
- Tricomonas: causes a yellowish discharge
- Bacteria: cause a greenish offensive discharge

Thrush is the commonest and is caused by a fungus that lives normally in the vagina but

sometimes gets out of control due to hormonal changes or illness (especially if antibiotics are taken).

Diabetes may also be a precipitating factor. Recurrent thrush in a diabetic suggests the need for blood sugar levels to be checked. Any chronic illness may lower resistance and trigger episodes of thrush.

Wash daily with plain warm water, avoid long soaks in hot baths. Use cotton underwear. Pessaries can be obtained through your doctor to treat severe infections. Partners also need to be treated.

Recurrences can be prevented by regular soaks in slightly warm water with a couple of tablespoons of vinegar in it or by applying plain live yoghurt to the vagina (the lactobacillus combats the fungus). Note: douching does not help, and may in fact make matters far worse.

Discharge other than that due to thrush requires medical assessment (including swabs sent off for culture to identify the infecting organism).

IMPORTANT NOTE:

You should not attempt to self-diagnose any of the conditions described in these articles; for persistent problems, seek medical advice. These embarrassing subjects should be dealt with prosaically but sensitively by medical and paramedical personnel. Don't let embarrassment deter you from seeking help!

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