Causes of pelvic pain in women

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Pelvic pain is common

• Affects 1 in 5 Australian teens and women, impacts on individual and families, as well as schooling and work productivity.
• Pelvic pain is estimated to cost Australia more than $6 billion annually (The Pelvic Pain Report 2011, PainAustralia).
• Symptomatology can be complex, and can also include systemic symptoms such as fatigue, migraine, anxiety, premenstrual symptoms and low mood.
Pelvic pain can be from many causes

- Gynaecological
  - Primary dysmenorrhoea
  - Endometriosis
  - Adenomyosis
  - Ovarian cysts
  - Vulval pain
  - PID
- Non-gynaecological
  - Bladder
  - Bowel
  - Pelvic floor
  - Adhesions
Primary dysmenorrhoea

- Related to ovulatory cycles and due to myometrial contractions and vasospasm
- Higher rates in girls whose mothers have experienced dysmenorrhoea
- Prostaglandin effect
- PG inhibitors shorten duration and lessen flow
  - Effective in 80%
  - Mefenamic acid, ibuprofen, naproxen are the best
- COCP – reduces pain, flow and duration, can also avoid menses
- Fish oil supplements may be of benefit

Secondary dysmenorrhoea

- 10% of adolescents with severe dysmenorrhoea
- Endometriosis
- Adenomyosis
- Mullerian duct abnormalities
  - Uterine didelphys + obstructed hemivagina
  - Transverse Vaginal septum
Endometriosis

• Ectopic endometrial implants, usually in pelvis but can occur anywhere in the body.
• Affects 5-10% women during reproductive years, rare before menarche or after menopause.
• Symptoms are diverse and non-specific, and do not correlate with disease severity. Can be asymptomatic (or present but not the cause of the pelvic pain).
Clinical presentation

• Dysmenorrhoea and pelvic pain (79%)
  – Often 1-2 days prior to menses, can last throughout menses and for days afterwards
  – May not develop for years after menarche, although can be superimposed on primary dysmenorrhoea
• Dyspareunia (45%)
  – Typically deep, may persist for hours or days after
• Bowel upset (36%) or pain (29%)
  – Diarrhoea/constipation, bloating, cramping, dyschezia. Can occur without endometriosis infiltrating bowel. PR bleeding rare.

Clinical presentation - 2

• Infertility (26%)
• Ovarian mass/cyst (20%)
• Bladder symptoms (10%)
  – Urinary frequency/urgency during menses
  – Suprapubic pain with micturition
  – Urinary retention/haematuria/flank pain from ureteric obstruction not common
  – Urinary tract endometriosis may be asymptomatic.
• Non-specific symptoms including low back pain, pre-menstrual spotting, fatigue.
History

- Menstrual history including menarche, cycle, timing and/or progression of dysmenorrhoea
- Bowel/bladder symptoms
- Dyspareunia
- Severity of symptoms and impact on quality of life
- Treatments past/current including surgery and outcomes.

Examination

- Abdominal examination
  - Tenderness, masses, scars
- Pelvic examination
  - Often normal
  - Most frequent abnormal finding is tenderness in posterior fornix/uterosacral ligaments (USL)
  - Other findings include thickened USL, nodularity in POD, uterine tenderness, fixed retroverted uterus
- Swabs/Pap if indicated and speculum tolerated.
Investigations

• No diagnostic blood tests. Ca125 can be elevated in endometriosis but is not a sensitive marker and is not specific.

• Imaging
  – Pelvic USS – preferably T/V, good quality provider. Endometriomas have a characteristic heterogeneous “ground glass” appearance. Standard ultrasound will not detect superficial endometriosis or adhesions.
  – Specialist endometriosis USS – can identify size, location and depth of infiltrating lesions, adhesions; suspicion of superficial disease
  – MRI

Endometriosis - management guidelines (ESHRE 2014)

• Pelvic pain and possible endometriosis may be managed with empiric medical therapy prior to laparoscopy. 80-90% of women will have some improvement in their symptoms.

• NSAIDs and/or hormonal treatment are both appropriate treatment to reduce endometriosis-related pain (and primary dysmenorrhoea).

• Choice of hormonal treatment will depend on cost, efficacy, side effects, need for contraception - clinicians are endorsed to discuss management options with patients.
Endometriosis guidelines 2

- Hormonal contraceptive therapy can be progestagen only or combined oestrogen/progestagen.
- Medical therapy will not decrease endometriomas or adhesions, or improve fertility.
- Surgical treatment of endometriosis is associated with a reduction in pain.

Endometriosis guidelines 3

- Symptom recurrence requiring re-operation is common and increases with time (21.5% 2 years; 40-50% 5 years) Vercellini 2009
- Hormonal treatment post-op (for >1 year) increases duration of pain relief and delays disease recurrence.
When to refer to a gynaecologist

- Failure to respond adequately to 3-6 months of medical management;
- Previously diagnosed endometriosis with return of symptoms that have not responded to appropriate medical management;
- Symptoms/signs suggestive of deep infiltrative endometriosis (dyschezia, deep dyspareunia, endometrioma on pelvic USS).
- Infertility.

Laparoscopy

- Required for diagnosis of endometriosis – visual +/- histological.
- Can treat disease with ablation/excision at time of diagnosis depending on operator experience
- A number of classification systems exist, most common is ASRM (American Society of Reproductive Medicine) – Stages 1 (minimal) to Stage 4 (severe).
Endometriosis stage 1-2

Endometriosis stage 4
Natural history of endometriosis

- In studies where second-look laparoscopy was performed 6-12 months after a diagnostic laparoscopy showed endometriosis, about 1/3 stable, 1/3 regressed, 1/3 progressed.
- Symptoms often disappear or improve during pregnancy; there is minimal evidence that pregnancy affects the long-term course of endometriosis.
Adenomyosis

- Definition – endometrial glands and stroma within the uterine musculature.
- Myometrium becomes diffusely enlarged secondary to hypertrophy, or can have localised nodules (adenomyomas – can resemble fibroids clinically).
- Can coexist with endometriosis (but separate disease process), fibroids.
- Appears to be more common in parous women but can be present in young and nulliparous women.
Clinical manifestations

- Heavy menstrual bleeding (60%)
- Painful menstruation (25%)
- Dyspareunia and chronic pelvic pain may develop
- About 1/3 women are asymptomatic
- Probably decreases fertility but no evidence of increased miscarriage or obstetric problems
- Examination may reveal an enlarged tender uterus, but generally <12/40 size

Adenomyosis - diagnosis

- Definitive diagnosis from histology of hysterectomy specimen; diagnosis is suggested by clinical manifestations.
- Good quality TVUS and MRI – asymmetrical thickening of myometrium (usually posterior more than anterior); myometrial cysts; loss of endomyometrial border (junctional zone); increased myometrial heterogeneity.
- Thickened junctional zone can be misinterpreted as thickened endometrium.
- No proven place for biopsy or CT.
Differential diagnosis

- May present as ongoing pain after endometriosis treatment or endometrial ablation.
- Pregnancy must always be excluded in a woman with abnormal uterine bleeding, especially with an enlarged uterus.
- Infection (endometritis; chronic PID)
- The following conditions usually are not painful – fibroids; polyps; endometrial hyperplasia/malignancy

Treatment

- Only guaranteed treatment is total hysterectomy (uterus and cervix) – ovaries can be conserved.
- Hormonal manipulation with progestins (including Mirena) or oestrogen-progestin combinations may be beneficial, but symptoms return with treatment cessation.
- Conservative treatment options (endometrial ablation; adenomyomectomy; uterine artery embolisation) – small numbers, no strong evidence of benefit or future fertility outcomes.
Ovarian cysts/adnexal masses

• A mass in the ovary, fallopian tube or surrounding connective tissue
• Common, can occur in any age group
• May be symptomatic or an incidental finding
• The goals of evaluation are to address acute conditions and to determine whether the mass is malignant.
Approach to adnexal masses

- **Age**
  - Child/adolescent (adnexal masses in this age group are less common than in reproductive age women, but significant chance of torsion or malignancy (10-20%));
  - Premenopausal (many related to reproductive function; majority are benign);
  - Pregnancy (ectopic pregnancy; corpus lutea; theca-lutein cysts);
  - Postmenopausal.
Medical history

- Pain/pressure – onset, location, duration, severity;
- Associated symptoms – vaginal bleeding or discharge, fever, bowel/bladder difficulty, weight loss;
- Pregnancy, contraception;
- History of PID, infertility.

Examination

- Size, consistency and mobility of mass;
- Abdominal distention, ascites;
- Tenderness;
- Nodularity in posterior fornix.
- Pelvic USS is preferred imaging study (transabdominal +/- transvaginal); MRI if secondary imaging required.
- Blood testing for bhCG; FBE; tumour markers.
Urgent conditions

- Ectopic pregnancy;
- Adnexal torsion – typically abrupt onset of severe pain accompanied by nausea and vomiting (up to 70%), fever (up to 20%);
- Ruptured or haemorrhagic ovarian cyst;
- Tuboovarian abscess.

Non-urgent conditions

- Persistent or recurrent physiological ovarian cysts;
- Benign ovarian cysts (teratomas, cystadenomas, endometriomas);
- Paraovarian cysts;
- Hydrosalpinx;
- Broad ligament fibroid.
Consider specialist referral

- **To gynaeoncologist**
  - for masses that are suspicious for malignancy.

- **To gynaecologist**
  - for persistent or recurrent ovarian cysts, especially if >5cm diameter; persistent pain with adnexal masses; nonphysiological cysts eg dermoid, endometriomata.

- **Discussion with fertility specialist**
  - if asymptomatic hydrosalpinx/fibroid.

A word about tumour markers…

- Ca125 – most widely used biomarker for epithelial ovarian cancer. Produced by ovary, Fallopian tube, endometrium, peritoneum (also pericardium, pleura).
  - Low sensitivity for ovarian cancer, esp early stage (25% stage 1 up to 78% stage 4)
  - Low specificity (also increased with benign gynae conditions {eg endometriosis, fibroids, PID}; nongynae conditions {eg pancreatitis, cirrhosis, diverticulitis}; nongynae cancers {breast, colon, liver, pancreas, lung}
Screening for ovarian cancer in low-risk women

- Recommendation for a screening test is a positive predictive value of at least 10%, as well as to reduce mortality and be cost effective.
- In large studies, PPV of Ca125 alone is approx 3%; PPV of TVUS alone is 5%; no consistent data on whether combined screening reduces mortality.
- Estimated that >600 women would have to be screened annually for 14 years to prevent one death from ovarian cancer.
- With false positive results, 1 in 3 undergo surgery, 15% at least one serious complication.

Other tumour markers

- CEA (carcinoembryonic antigen) – produced by mucinous cancers associated with GIT or ovary.
- Can also be elevated in other malignancies (breast, pancreas, lung, thyroid), and benign conditions (benign mucinous tumours, cigarette smoking, cholecystitis, inflammatory bowel disease, pancreatitis).
- Ca19-9 – mucin protein, may be elevated in malignancies of ovary, stomach, pancreas, GB.
**Other tumour markers**

- Germ cell and sex cord-stromal ovarian tumours can secrete hormones (hCG, E2, T, inhibin) and other proteins (AFP, LDH).
- Consider these in a child/adolescent with an adnexal mass (germ cell tumour most likely pathology) or patient with signs of oestrogen excess (AUB) or androgen excess (hirsutism, virilisation).
Vulvodynia

- “Chronic vulvar discomfort, most often described as burning pain, occurring in the absence of relevant findings or a specific, clinically identifiable, neurologic disorder”.
- Classified as localised or generalised, and provoked, unprovoked or both.
- Most chronic vulvar pain is localised provoked (aka “vulvar vestibulitis”).

Localised provoked vestibulodynia

- Tenderness to gentle touch/pressure in vulvar vestibule, hypertonicity of pelvic floor muscles.
- Pain typically provoked by sex, tampons and tight clothing.
- Primary or secondary (may not be an identifiable trigger).
- Chronic candidiasis frequently implicated.
Chronic vulvovaginal candidiasis

- Suggestive symptoms
  - Vulvar itch
  - Swelling or skin splitting with sex
  - Reduced lubrication
  - Burning or rawness with sex
  - Premenstrual flare of pain and/or itch
  - Reduction of symptoms while using antifungals
  - Previous positive cultures
- Cultures often negative within 4/52 of antifungal treatment.

Chronic VVC Management

- Trial of candida suppression if suggestive symptoms (even if culture negative)
  - Prolonged (6/12 or longer) as all available antifungals are fungistatic and yeasts proliferate when suppression is stopped;
  - Oral preferable (avoid potential contact dermatitis with prolonged topical treatments);
  - Fluconazole 150mg/week
Common coexisting pain conditions

- Vulvodynia
- Painful bladder syndrome
- Irritable bowel syndrome
- Chronic pelvic pain
- Fibromyalgia
- Migraine and chronic tension headache
- Chronic low back and neck pain

History

- Is the pain localised or generalised?
- Constant, with touch only or both?
- Is there an aftersensation? For how long?
- Is there a history to suggest chronic VVC, or a comorbid pain disorder?
- Any history of eczema/dermatitis?
- Sleep disorder, anxiety, depression?
Examination

• Expect to see normal skin but remember subtle changes. Redness alone can be normal.
• Observe for puborectalis “winking” and perianal spasm “sucked in vagina”
• Moistened cotton tip, good exposure, sensory exam slow and with explanation, outer to inner, 5 and 7 o’clock
• PV cotton tip discomfort
• Finger tip pelvic floor examination
• LVS if candidiasis suspected (speculum not necessary)

VVS Point Tenderness
Management

- Needs to be multidisciplinary
- Genital skin care (Melbourne Sexual Health Centre fact sheet mhsc.org.au)
- Pelvic physiotherapy
- Psychological and behavioural interventions, including sexual counselling. Sexual abuse is common (50% CPP clinic at RWH)
- Refer (gynaecologist or vulval clinic) if not responding to treatment after 3/12

Management - 2

- Topical treatments
  - Lignocaine (2% gel/5% ointment) to vestibule 10-20 mins before sex, or up to 5 times daily to reduce peripheral sensory input;
  - Amitriptyline 2-5% or gabapentin 2-6% bd (need to be compounded = $$);
  - Will sting for a few minutes after application.
  - Topical treatment has advantage of repeated touch which may help desensitisation, but watch for potential contact dermatitis.
Management - 3

• Pain-modifying medications
  – Low-dose TCAs eg amitriptyline are 1st line in chronic pain, can help with sleep difficulties.
  – Side effects are common and often dose-limiting
  – Start low (5-10mg nocte) and slowly titrate up depending on SEs and benefit. Often require >50mg. Benefit may not be apparent for 4-6/52 after reaching therapeutic dose.
  – Treatment 6-12 months.
  – Discontinue if no effect after 6/52 at maximum tolerated dose.

Management - 4

• SNRIs – duloxetine and venlafaxine used in chronic pain, helpful if significant comorbid anxiety/depression. SSRIs less effective on chronic pain.
• Gabapentinoids – if TCAs contraindicated, not tolerated or not effective.
  – Pregabalin can be started at 75mg (or lower) and titrated slowly
  – Gabapentin starting at 300mg if pregabalin not tolerated.
Generalised unprovoked vestibulodynia

- Less common, typically presents in older women. Onset may be sudden or gradual.
- Any pressure on vulva can aggravate pain (sitting, bike riding) but intercourse may be painfree.
- Low dose TCAs or gabapentinoids are often effective in pain reduction.
Pelvic inflammatory disease (PID)

- PID refers to acute infection of the upper genital tract.
- 85% sexually acquired or BV pathogens, risk factors are multiple sexual partners, age <25, previous PID.

Pelvic inflammatory disease (PID)

- May be subclinical - up to 2/3 of women with pelvic adhesions/tubal factor infertility that appears likely to be secondary to previous PID do not have a previous PID diagnosis.
- Rare in pregnancy due to cervical mucus plug, but may occur in first trimester.
Acute symptomatic PID - history

- Lower abdominal pain, usually bilateral, rarely >2/52 duration.
- Majority have mild to moderate symptoms.
- Abnormal bleeding (IMB, PCB, menorrhagia) occurs in >1/3, may have abnormal PV discharge or urinary frequency.

Acute PID - exam

- Most women have abdominal tenderness in lower quadrants (may be in RUQ if perihepatitis).
- Cervical motion, uterine and adnexal tenderness on PV exam is defining sign; may have endocervical and/or vaginal discharge.
- Significant lateralisation of adnexal tenderness is uncommon, unless severe PID complicated by tuboovarian abscess.
Acute PID - investigations

- Pregnancy test (exclude ectopic or complication of intrauterine pregnancy);
- PCR for *C. trachomatis* and *N. gonorrhoeae*;
- Microscopy of vaginal discharge (if available) for BV, trichomonas;
- Screening for other STIs - HIV, Hep B, syphilis.
- FBE, CRP, ESR if more unwell.
- Do not delay antibiotic treatment to wait for results.

Additional evaluation

- If women are acutely ill, atypical symptoms or not improving significantly within 72 hours of treatment.
- USS is preferred modality if abscess or adnexal pathology suspected.
- Laparoscopy uncommonly performed unless patient clinically not responding to treatment.