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Genitourinary Prolapse

Genitourinary prolapse results into protrusion of vaginal walls and/or uterus. It occurs when there is descent of one or more of the pelvic organs including the uterus, bladder, rectum, small or large bowel, or vaginal vault. The front (anterior) and/or back (posterior) walls of the vagina, the uterus and/ or the top of the vagina (Vaginal Vault) can all be affected by this descent. It is usually accompanied by urinary, bowel, sexual, or pelvic symptoms.

Pathophysiology

The pelvic organs are mainly supported by the muscles of the pelvic floor (levator ani) and a connective tissue network connecting the organs to the pelvic muscles and bones (the endopelvic fascia). This support structure is weakened through direct muscle trauma, neuropathic injury, and disruption or stretching due to number of reasons.

Confirmed risk factors

- Increasing age (risk doubles with each decade of life).
- Vaginal delivery
- Increasing parity
- Overweight (BMI 25-30) and obesity (BMI >30)
- Spina bifida

Possible risk factors

- Intrapartum variables (controversial and unproven):
  - Large baby
  - Anal sphincter injury.
  - Very long second stage of labour (after full dilatation)
- Race
- Family history of prolapse
- Chronic Constipation
- Connective tissue disorders, e.g. Marfan's syndrome, Ehlers-Danlos syndrome
- Previous hysterectomy
- Menopause: a recent small study found no association between oestrogen status and prolapse
- Selective oestrogen-receptor modulators
- Occupations involving heavy lifting

Epidemiology

- The incidence of genital prolapse is difficult to determine as many women do not seek medical advice.
- In the Women's Health Initiative Study, 41% of women aged 50-79 showed some degree of pelvic organ prolapse.
- Prolapse is the most common reason for hysterectomy in women aged over 50 and accounts for 13% of hysterectomies in women of all ages. In the UK, genital prolapse accounts for 20% of women on the waiting list for major gynaecological surgery.

Types of genitourinary prolapse

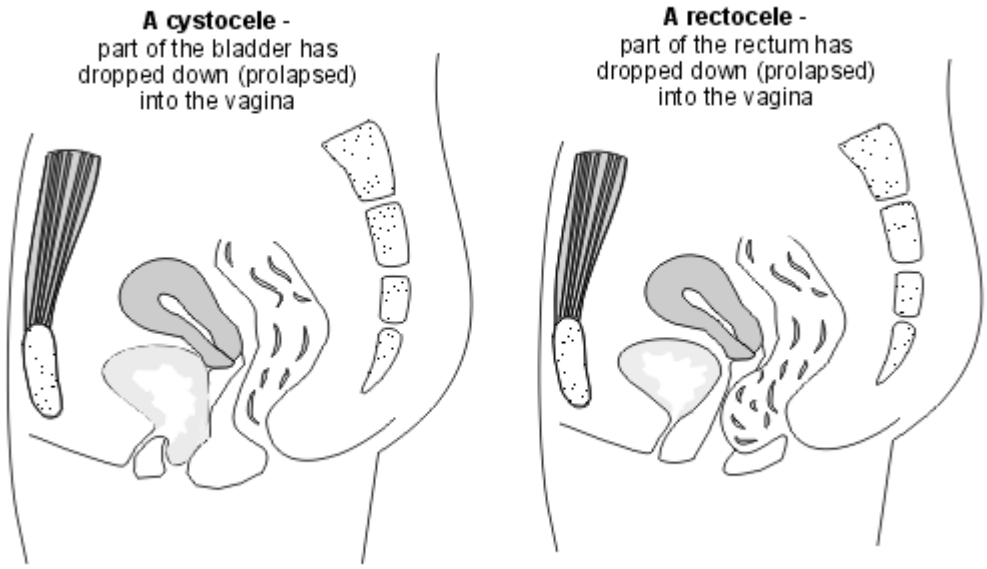
Prolapse can occur in the anterior, middle, or posterior compartment of the pelvis

Cystocele or anterior wall prolapse

A cystocele is when there is a defect in the anterior wall supports and causes, the bladder to prolapse into the vaginal wall. This contributes to inability to empty the bladder properly and stress urinary incontinence.

Rectocele or posterior vaginal wall prolapse

A rectocele is where the defect is in the posterior or back wall supports of the vagina and as a result the rectum bulges into the vagina. This can contribute to difficulty emptying the bowel as this causes a pocket to form and as a result faeces become lodged there, it is not uncommon for women with a rectocele to have to use perineal pressure to aid the emptying of their bowel. A rectocele can also cause a decreased stream when passing urine as the bulge presses up against the urethra (water pipe) thus obstructing the flow of urine.

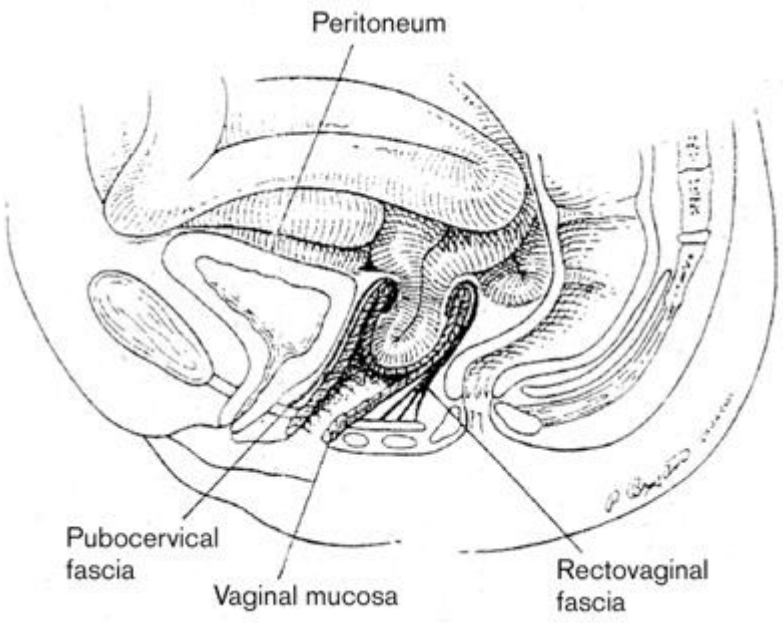


Uterine prolapse

This is where the defect is in the structure that supports the womb, resulting in the cervix and uterus to prolapse into the vagina.

Vaginal vault prolapse

The vaginal vault is the top of the vagina. With a vault prolapse this is where the vaginal wall loses its support from surrounding structure and the vagina falls in on itself. A vault prolapse can only occur to women who have had a previous hysterectomy. Vault prolapse statistics show increased risk of vault prolapse in women who had a hysterectomy for a uterine prolapse, the risk of this occurring are decreasing with new methods of surgery for prolapse repair.



Extent of genitourinary prolapse

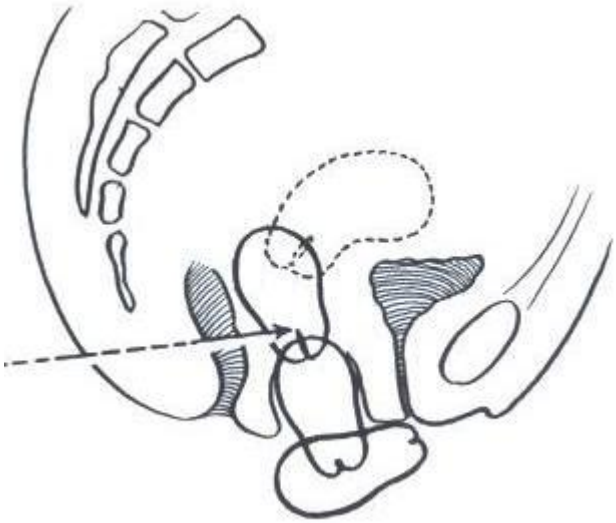
The Pelvic Organ Prolapse Quantification (POPQ) system is the recognised grading system for the severity/degree of genital prolapse.[10] It is based on the position of the most distal portion of the prolapse during the Valsalva manoeuvre:

- Stage 0: no prolapse.
- Stage 1: more than 1 cm above the hymen.
- Stage 2: within 1 cm proximal or distal to the plane of the hymen.
- Stage 3: more than 1 cm below the plane of the hymen but protrudes no further than 2 cm less than the total length of the vagina.

- Stage 4: there is complete eversion of the vagina.

The degree of uterine descent can also be graded as:

- 1st degree: cervix visible when the perineum is depressed - prolapse is contained within the vagina.
- 2nd degree: cervix prolapsed through the introitus with the fundus remaining in the pelvis.
- 3rd degree: procidentia (complete prolapse) - entire uterus is outside the introitus.



Symptoms

Mild genital prolapse may be asymptomatic and an incidental finding. However, in other women, symptoms can severely affect their quality of life. Symptoms are related to the site and type of prolapse.

Vaginal/general symptoms (Common to all the types of the prolapse)

- Sensation of pressure, fullness or heaviness, bulge or a protrusion or "something coming down".
- Seeing or feeling a bulge/protrusion.
- Difficulty retaining tampons.
- Spotting (in the presence of ulceration of the prolapse).

Urinary symptoms

- Urinary leakage.

- Frequency.
- Urgency.
- Feeling of incomplete bladder emptying.
- Weak or prolonged urinary stream.
- The need to reduce the prolapse manually before passing urine (Voiding)
- The need to change position to start or complete voiding.

Coital difficulty

- Pain with intercourse
- Loss of vaginal sensation.
- Vaginal flatus.

Bowel symptoms

- Constipation/straining.
- Urgency of stool.
- Incontinence of flatus or stool.
- Incomplete evacuation.
- The need to apply digital pressure to the perineum or posterior vaginal wall to enable defecation (splinting).
- Digital evacuation necessary in order to pass a stool.

Evaluation

Evaluation of prolapse involves thorough history taking. It is important to determine your main symptoms and the effect of these on their daily life. It is necessary to fill up specific quality of life questionnaire to detrmine this.

The examination to determine the extent of prolapse is required in both standing and lying on your back or onto your side.If there are bowel symptoms, rectal examination can be helpful.

Specific investigations like ultrasound scans and Urodynamics (Bladder pressure studies) are required in certain situations.

Investigations

Following investigations are required to evaluate prolapse

- If there are urinary symptoms:
  - Urinalysis ± a mid-stream specimen of urine (MSU).
  - Post-void residual urine volume testing using a catheter or bladder ultrasound scan.
  - Urodynamic investigations.
  - Occasionally Urea and creatinine or Renal ultrasound scan.
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- If there are bowel symptoms:

- Anal manometry.
- Defecography.
- Endo-anal ultrasound scan (to look for an anal sphincter defect if faecal incontinence is present).

Management

- If prolapse is an incidental asymptomatic finding; without any symptoms no treatment is required. Though it is advisable to start pelvic floor exercise.
- The current management options for women with symptomatic genitourinary prolapse are:
  - Watchful waiting
  - Vaginal pessary insertion
  - Surgery

Watchful waiting

If a woman reports little in the way of symptoms watchful waiting is appropriate. Careful observation for the development of new symptoms is needed.

A number of conservative treatment options have also been suggested:

- **Lifestyle modification**: This very important. Treatment of cough, smoking cessation, constipation and overweight and obesity. Though the role of lifestyle modification as a prevention or treatment of prolapse has not been investigated.[5]
- **Pelvic floor muscle exercises**: It may be beneficial as primary therapy for early stages of uterine prolapse.[4] Pelvic floor exercises may be more successful under the supervision of a physiotherapist.
- **Vaginal oestrogen creams**: A trial of topical oestrogen cream for 4-6 weeks if prolapse is mild but there is no current evidence of any benefit.

Vaginal pessary insertion

It is a good alternative to surgery. A pessary is inserted into the vagina to reduce the prolapse, provide support and relieve pressure on the bladder and bowel.They are made of silicone or plastic. A ring pessary is usually the first choice.

Although not supported by definite evidence, current opinion is that pessaries are effective for short-term relief of prolapse prior to surgery or if the surgery is undesirable or unwanted.

Pessary is fitted in a clinic. First internal examination is performed to estimate the size of the vagina. The aim is to fit the largest pessary that does not cause discomfort.The pessary fits well if a finger can be swept between the pessary and the walls of the vagina. Soon after the insertion the patient is asked to walk around, bend and micturate to ensure that the pessary is retained.

There is no clear consensus about how often to follow up women who have had a pessary fitted. After 3 months and then every 6 months, if there are no complications, has been suggested.At each follow-up symptoms are evaluated, vagina is examined for irritation and erosions. If erosions are seen, pessary is removed but not reinserted on that occasion. It is advisable to use oestrogen cream for few weeks prior to reinsertion of pessary. Biopsy may be required if the erosion does not heal.

Many women experience vaginal discharge and odour. Pessaries are rarely associated with the complications like vesicovaginal and rectovaginal fistulas, faecal impaction, hydronephrosis, urosepsis. These tend to occur in women who are not regularly followed up.

Surgery

Surgery is very effective but a combination of procedures may be required and reoperation is required in 29% of cases. The time interval reduces between each successive operation.Surgery is indicated to relieve symptoms if pessary is unwanted or fails to control the symptoms, for women who want a definitive treatment or for prolapse combined with urinary or faecal incontinence.Urinary incontinence may be masked by prolapse and can be precipitated by surgery. Some operations, e.g. colposuspension for a cystourethrocele, may predispose to a prolapse in another compartment.

The choice of procedure will depend on whether the woman is sexually active, the fitness of the patient, previous surgeries, other gynaecological conditions and surgeon's preference. Generally women should avoid heavy lifting after surgery and avoid sexual intercourse for 6-8 weeks. (see pelvic floor repair information leaflet for further advice).

Surgery for bladder/urethral prolapse

- **Anterior colporrhaphy**: involves central plication of the fibromuscular layer of the anterior vaginal wall. Mesh reinforcement may also be used. Performed transvaginally. Intraoperative complications are uncommon but haemorrhage, haematoma, and cystotomy may occur.[9]
- **Colposuspension**: performed for urethral sphincter incontinence associated with a cystourethrocele. The paravaginal fascia on either side of the bladder neck and the base of the bladder are approximated to the pelvic side wall by sutures placed through the ipsilateral iliopectineal ligament.[9]

Surgery for uterine prolapse

- **Hysterectomy**: a vaginal hysterectomy has the advantage that no abdominal incision is needed, thereby reducing pain and hospital stay. This can be combined with anterior or posterior colporrhaphy.
- **Open abdominal or laparoscopic sacrohysteropexy**: this can be performed if the woman wishes to retain her uterus. The uterus is attached to the anterior longitudinal ligament over the sacrum. Mesh is used to hold the uterus in place.

- **Sacrospinous fixation**: unilateral or bilateral fixation of the uterus to the sacrospinous ligament. Performed via vaginal route. Lower success rate than sacrohysteropexy. Risk of injury to pudendal nerve and vessels and sciatic nerve.

Surgery for vault prolapse

- **Sacrospinous fixation**: unilateral or bilateral fixation of the vault to the sacrospinous ligament. Performed via vaginal route. Risk of injury to the pudendal nerve and vessels and sciatic nerve. This may have a higher failure rate but a lower perioperative mortality than sacrocolpopexy.[15]
- **Laparoscopic or open abdominal mesh sacrocolpopexy**: a mesh is attached at one end to the longitudinal ligament of the sacrum and at the other to the top of the vagina and for a variable distance down the posterior and/or anterior vaginal walls.[16]
- **Iliococcygeal hitch**: the vaginal vault is attached on both sides to the fascia of the iliococcygeus muscle. However, this procedure is not recommended by the Royal College of Obstetricians and Gynaecologists (RCOG) as it does not reduce the incidence of postoperative anterior wall prolapse.[15]

Surgery for rectocele/enterocele

- **Posterior colporrhaphy**: involves levator ani muscle plication or by repair of discrete fascial defects. A mesh can be used for additional support. Performed transvaginally. Levator plication may lead to dyspareunia.

Obliterative surgery

- Corrects prolapse by moving the pelvic viscera back into the pelvis and closing off the vaginal canal. Known as colpocleisis.
- Vaginal intercourse is no longer possible.
- Advantages are that it is almost 100% effective in treating prolapse and has a reduced perioperative morbidity.
- Not commonly carried out in Europe.
- Preoperative counselling is essential.

Complications

- Ulceration and infection of organs prolapsed outside the vaginal introitus may occur.
- Urinary tract complications include stress incontinence, chronic retention and overflow incontinence, and recurrent urinary tract infections.
- Bowel dysfunction may occur with a rectocele.

Prognosis

- Left untreated, uterine prolapse will gradually worsen.
- Good prognosis is associated with young age, good physical health and a body mass index within normal limits.

- Poorer prognosis is associated with older age, poor physical heath, respiratory problems (e.g. asthma or chronic obstructive pulmonary disease), and obesity.

Prevention

Possible preventative measures include (trial evidence lacking for most):

- Good intrapartum care, including avoiding unnecessary instrumental trauma and prolonged labour.
- The role of hormone replacement therapy in preventing prolapse is uncertain.[9]
- Pelvic floor exercises may prevent prolapse occurring secondary to pelvic floor laxity and are strongly advised after childbirth.
- Smoking cessation will reduce chronic cough.
- Weight loss if overweight or obese.
- Avoidance of heavy lifting occupations.
- Treatment of constipation throughout life.