Urogenital Prolapse

By dr dhai abdal azeez

- Urogenital prolapse occurs when there is a weakness in the supporting structures of the pelvic floor allowing the pelvic viscera to descend and ultimately fall through the anatomical defect.
  While usually not life threatening, prolapse is often symptomatic and is associated with a deterioration in quality of life and may be the cause of bladder and bowel dysfunction

EPIDEMIOLOGY

- ## Age
  The incidence of urogenital prolapse increases with increasing age, with approximately 60 per cent of elderly women having some degree of prolapse and up to half of all women over the age of 50 years complaining of symptomatic prolapse
- ## Parity
  Urogenital prolapse is more common following childbirth, although it may be asymptomatic. Studies have estimated that 50 per cent of parous women have some degree of urogenital prolapse and, of these, 10–20 per cent are symptomatic

Race

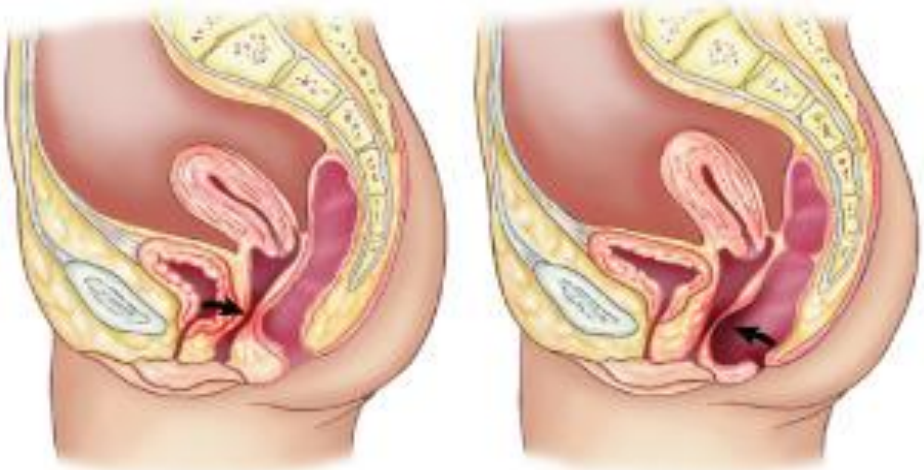
Prolapse is generally thought to be more common in Caucasian women and less common in women of Afro-Caribbean origin.

- The pelvic structures are divided into 3 compartments :
  - Anterior : urethra /bladder
  - Middle : uterus/vault
  - Posterior : rectum/anus

Classification of prolapse

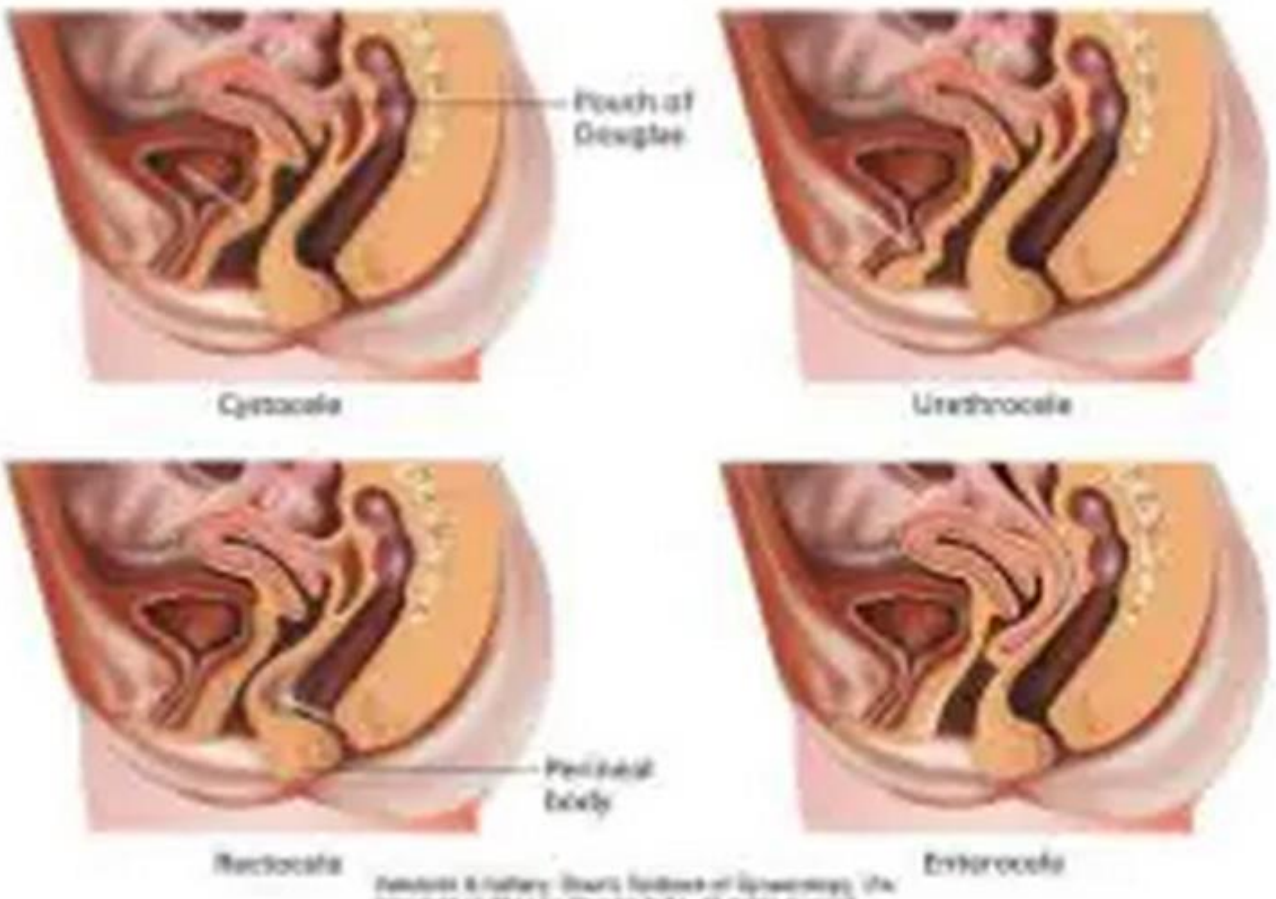
CLASSIFICATION

- Urogenital prolapse is classified anatomically depending on the site of the defect and the pelvic viscera that are involved.
  . *Urethrocele:* prolapse of the lower anterior vaginal wall involving the urethra only.
  - ***Cystocele:*** prolapse of the upper anterior vaginal wall involving the bladder. Generally, there is also associated prolapse of the urethra and hence the term cystourethrocele is used.
  . *Uterovaginal prolapse:* this term is used to describe prolapse of the uterus, cervix and upper vagina.
  . *Enterocele:* prolapse of the upper posterior wall of the vagina, usually containing loops of small bowel. A traction enterocele is secondary to uterovaginal prolapse, a pulsion enterocele is secondary to chronically raised intraabdominal pressure, and an iatrogenic enterocele is caused by previous pelvic surgery. An anterior enterocele may be used to describe prolapse of the upper anterior vaginal wall following hysterectomy. . *Rectocele:* prolapse of the lower posterior wall of the vagina involving the anterior wall of the rectum.
- ***Rectocele:*** prolapse of the lower posterior wall of the vagina involving the anterior wall of the rectum.



Cystocele
(Prolapsed bladder)

Rectocele
(Prolapsed rectum)

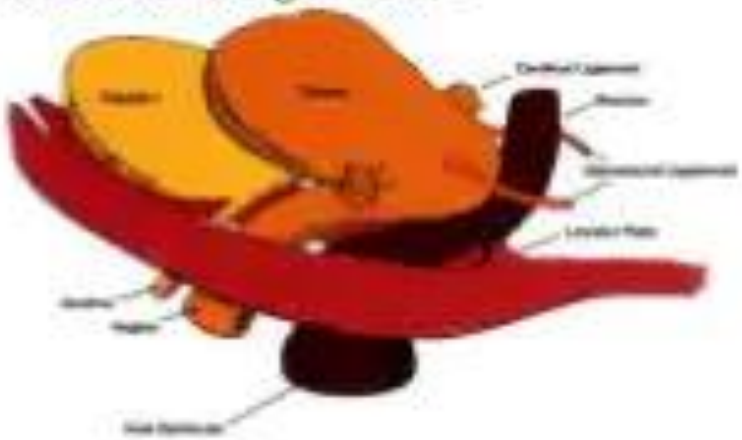

Pouch of Douglas
Cystocele
Urethrocele
Rectocele
Enterocele

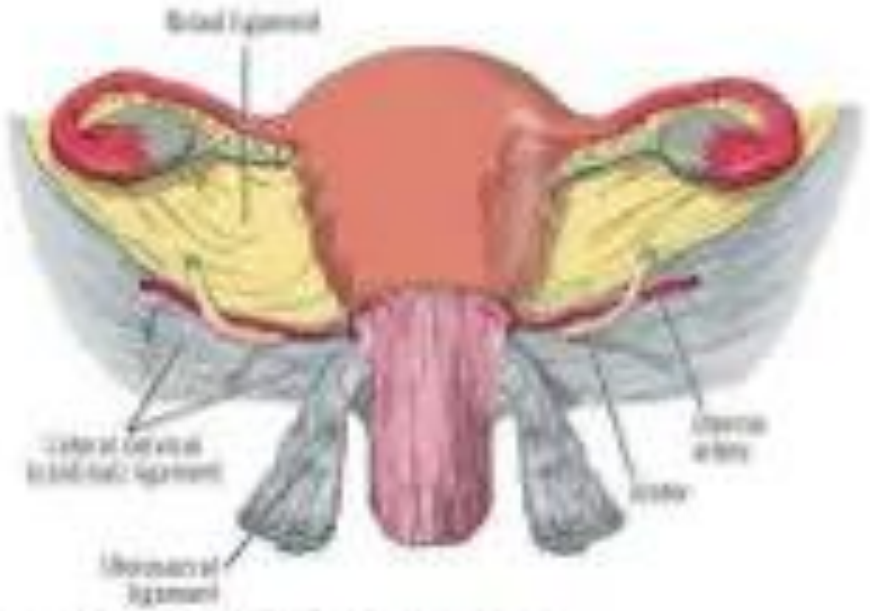
Supports of uterus:

- Round ligaments
- Broad ligaments
- Pubocervical ligaments
- Pelvic floor muscles
- Utero sacral ligaments

Level 1 (suspensory axis)

- Level I- **Uterosacral and cardinal ligaments**
  - support the uterus and vaginal vault.





- Round ligament
  - (mackenrodts lig / transverse/lateral cervical cervical ligament at the base of broad lig with uterine A & V

- Defects in level 1
  - Uterovaginal UV prolapse
  - Enterocele
  - Vault prolapse

Level 2 (attachment axis)

- Level II - Pelvic fascias and paracolpos
  - Fascial septae connects mid vagina to the pelvic sidewalls
  - Anteriorly
    - Pubocervical
  - Posteriorly
    - Rectovaginal facia
  - which connects the vagina to the white line on the lateral pelvic wall through arcus tendinous

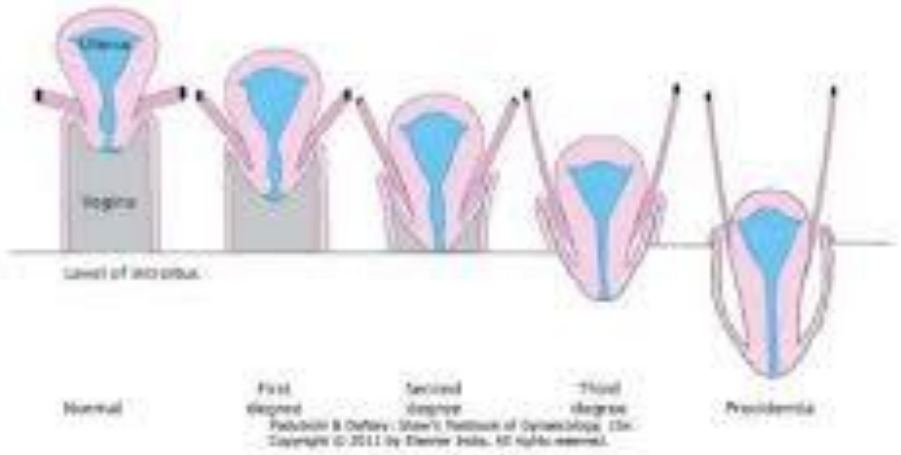
Level 3 (fusion axis)

- Level III-**Levator ani muscle**
  - supports the lower one-third of vagina.
  - Anteriorly
    - Urethra
    - Urogenital diaphragm
    - Pubis
  - laterally
    - Levator ani fascia
  - Posteriorly
    - Perineal body

GRADING OF UROGENITAL PROLAPSE

- *First degree:* The lowest part of the prolapse descends halfway down the vaginal axis to the introitus.
- *Second degree:* The lowest part of the prolapse extends to the level of the introitus and through the introitus on straining.
- *Third degree:* The lowest part of the prolapse extends through the introitus and lies outside the vagina. Procidentia describes a third-degree uterine prolapse.

- *Uterine descent*
  - - Descent of the cervix into the vagina
  - - Descent of the cervix up to the introitus
  - - Descent of the cervix outside the introitus
  - -*Procidentia*-All of the uterus outside the introitus



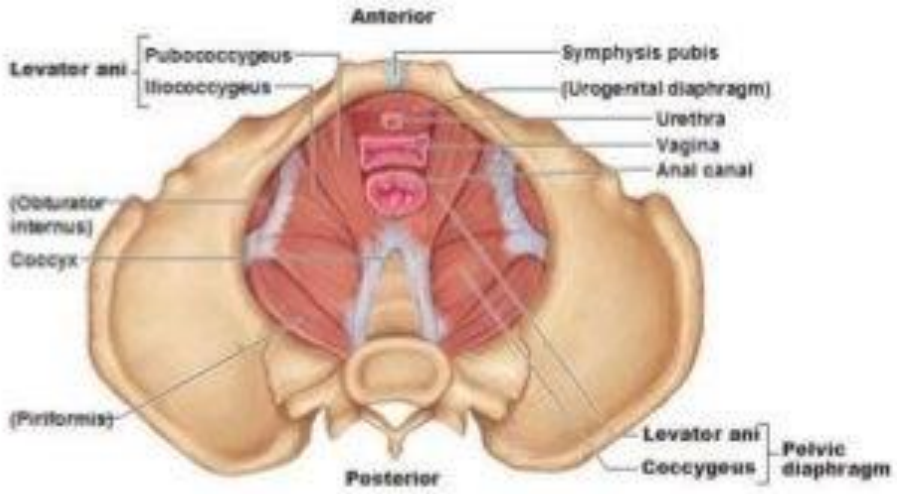
- # PROLAPSE SCORING SYSTEM

  Recently, the International Continence Society produced a standardisation document in order to assess urogenital prolapse more objectively.[2] The ICS Prolapse Scoring System (POPQ) allows the measurement of fixed points on the anterior and posterior vaginal walls, cervix and perineal body against a fixed reference point, the genital hiatus
  Measurements are performed in the left lateral position at rest and at maximal valsalva, thus providing an accurate and reproducible method of quantifying urogenital prolapse.

ANATOMY OF THE PELVIC FLOOR

- The pelvic floor provides support to the pelvic viscera and consists of the levator ani muscles, urogenital diaphragm, endopelvic fascia and perineal body. The levator ani, when considered with its associated fascia, is termed the ‘pelvic diaphragm’
- The muscle fibres of the pelvic diaphragm are arranged to form a broad U-shaped layer of muscle with a defect anteriorly. This physiological defect is the urogenital hiatus and allows the passage of the urethra, vagina and rectum through the pelvic floor

Levator ani


Anterior
Levator ani
Pubococcygeus
Iliococcygeus
Symphysis pubis
(Urogenital diaphragm)
Urethra
Vagina
Anal canal
(Obturator internus)
Coccyx
(Piriformis)
Levator ani
Coccygeus
Pelvic diaphragm
Posterior

- there are three components that are responsible for supporting
  the position of the uterus and vagina:
  - ligaments and fascia, by suspension from the pelvic side walls;
  - levator ani muscles, by constricting and thereby

  maintaining organ position; posterior angulation of the vagina, which is enhanced by
  rises in abdominal pressure causing closure of the ‘flap valve’ Damage to any of these mechanisms will contribute to prolapse

AETIOLOGY

- ## Pregnancy and childbirth

The increased incidence of prolapse in multiparous women would suggest that pregnancy and childbirth have an important impact on the supporting function of the pelvic floor. Damage to the muscular and fascial supports of the pelvic floor and changes in innervation contribute to the development of prolapse Mechanical changes within the pelvic fascia have also been implicated in the causation of urogenital prolapse. During
pregnancy, the fascia becomes more elastic and thus more likely to fail. This may explain the increased incidence of stress incontinence observed in pregnancy and the increased incidence of prolapse with multiparity.
Denervation of the pelvic musculature has been shown
to occur following childbirth, although gradual denervation
has also been demonstrated in nulliparous women with
increasing age t would appear that partial denervation of the pelvic floor is part of the normal ageing process, although pregnancy and childbirth accelerate these

Hormonal factors

- The effects of ageing and those of oestrogen withdrawal at the time of the menopause are often difficult to separate. Rectus muscle fascia has been shown to become less elastic with increasing age, and less energy is required to produce irreversible damag

- ## Smoking
  Chronic chest disease resulting in a chronic cough leads to an increase in the intra-abdominal pressure and thus exposes
  the pelvic floor to greater strain. Over a period of time this will exacerbate any defects in the pelvic floor musculature and fascia, leading to prolapse
- ## Constipation
  Chronically increased intra-abdominal pressure caused by repetitive straining will exacerbate any potential weaknesses in the pelvic floor and is also associated with an increased risk of prolapse.

Obesity

Although obesity has been linked to urogenital prolapse due to a potential increase in intra-abdominal pressure, there has been no good evidence to support this theory

Exercise

Increased stress placed on the musculature of the pelvic floor
will exacerbate pelvic floor defects and weakness, thus increasing the incidence of prolapse

Surgery

Pelvic surgery may also have an effect on the occurrence of urogenital prolapse. Continence procedures, while elevating the bladder neck, may lead to defects in other pelvic compartments.

- # CLINICAL SYMPTOMS

  Most women complain of a feeling of discomfort or heaviness within the pelvis in addition to a ‘lump coming down’.
  Symptoms tend to become worse with prolonged standing and towards the end of the day. Women may also complain of dyspareunia, difficulty in inserting tampons and chronic
  lower backache. In cases of third-degree prolapse, there may be mucosal ulceration and lichenification, which results in a symptomatic vaginal discharge or bleeding
  A cystocele may be associated with LUTS of urgency and frequency of micturition in addition to a sensation of incomplete emptying, which may be relieved by digitally
  reducing the prolapse. Recurrent UTIs may also be associated with a chronic urinary residual. While less than 2 per cent of mild cystoceles are associated with ureteric obstruction, severe prolapse may lead to hydronephrosis and chronic
  renal damage. Between 33 and 92 per cent of cases of complete procidentia are associated with some degree of ureteric obstruction.
  A rectocele may be associated with difficulty in opening the
  bowels, some women complaining of tenesmus and having to
  digitate to defaecate

- # CLINICAL SIGNS

  Women are generally examined in the left lateral position using a Simms' speculum, although digital examination when standing allows more accurate assessment of the degree of urogenital prolapse and, in particular, vaginal vault support. An abdominal examination should also be performed to exclude the presence of an abdominal or pelvic tumour that may be responsible for the vaginal findings.

  Differential diagnosis includes:

  - vaginal cysts;
  - pendunculated fibroid polyp;
  - urethral diverticulum;
  - chronic uterine inversion

- INVESTIGATION

  In women who also complain of concomitant LUTS, urodynamic studies or a post-micturition bladder ultrasound should be performed in order to exclude a chronic residual due to associated voiding difficulties. In such cases, a midstream specimen of urine should be sent for culture and sensitivity.

- Subtracted cystometry, with or without videocystourethrography, will allow the identification of underlying detrusor overactivity, which is important to exclude prior to surgical repair. In cases of significant cystocele, stress testing should be carried out by asking the patient to cough when standing. Since occult urodynamic stress incontinence may be unmasked by straightening the urethra following anterior colporrhaphy, this should be simulated by the insertion of a ring pessary or tampon to reduce the cystocele. If stress incontinence is demonstrated, a continence procedure such as colposuspension or insertion of tension-free vaginal tape may be a more appropriate procedur

- In cases of severe prolapse in which there may be a degree of ureteric obstruction, it is important to evaluate the upper urinary tract with either a renal tract ultrasound or an intravenous urogram. Although a cystocele itself may be responsible for irritative urinary symptoms, if these are unusually severe cystoscopy
  should be performed to exclude a chronic follicular or interstitial cystitis

Prevention •

In general, any factor that leads to chronic increases in intra-abdominal pressure should be avoided. Consequently, care should be taken to avoid constipation, which has been implicated as a major contributing factor to urogenital prolapse in Western society. In addition, the risk of prolapse in patients with chronic chest pathology, such as obstructive airways disease and asthma, should be reduced by effective management of these conditions. Hormone replacement therapy may also decrease the incidence of prolapse, although to date there are no studies that have tested this effect.

Maintaining an ideal BMI during pregnancy, smaller family size and improvements in antenatal and intrapartum care have also been implicated in the primary prevention of urogenital prolapse.

Physiotherapy •

Pelvic floor exercises may have a role in the treatment of women with symptomatic prolapse, although there are no objective evidence-based studies to support this. Education about pelvic floor exercises may be supplemented with the use of a perineometer and biofeedback, allowing quantificatio of pelvic floor contractions. In addition, vaginal cones and electrical stimulation may also be used, although again, while they have been shown to be effective in the treatment of urodynamic stress incontinence, there are no data to support their use in the management of urogenital prolapse

4 Must-Know Facts about Kegel Exercises

1 Commonly prescribed to improve many conditions.

How to

2 Lift pelvic floor and contract muscles.

3 They can be done at any location: at home, office, or in the car.

4 They have been proven effective in reducing urinary incontinence.

Intravaginal devices

- they may be used in younger women
  who have not yet completed their family, during pregnancy and the puerperium, and also for those women who may be unfit for surgery. Clearly, this last group of women may include the elderly, although age alone should not be seen as a contraindication to surgery. In addition, a pessary may offer
  symptomatic relief while awaiting surgery


Different pessary types

- Ring pessaries made of silicone or polythene are currently most frequently used. They are available in a number of different sizes (52–120 mm) and are designed to lie horizontally in the pelvis with one side in the posterior fornix and the other just behind the pubis, hence providing support to the uterus and upper vagina. Pessaries should be changed every six months; long-term use may be complicated by vaginal ulceration and therefore a low-dose topical oestrogen may be helpful in post-menopausal women.
- Ring pessaries may be useful in the management of minor degrees of urogenital prolapse, although in severe cases, and for vaginal vault prolapse, a shelf pessary may be more appropriate. These may be difficult to insert and remove and their use is becoming less common, especially as they preclude coitus.

Surgery

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The aim of surgical repair is to restore anatomy and function. There are vaginal and abdominal operations designed to correct prolapse, and choice often depends on a woman's desire to preserve coital function

Cystourethrocele

Anterior repair (colporrhaphy) is the most commonly performed surgical procedure but should be avoided if there is concurrent stress incontinence. An anterior vaginal wall incision is made and the fascial defect allowing the bladder to herniate through is identified and closed. With the bladder position restored, any redundant vaginal epithelium is excised and the incision closed.

Rectocele

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Posterior repair (colporrhaphy) is the most commonly performed procedure. A posterior vaginal wall incision is made and the fascial defect allowing the rectum to herniate through is identified and closed
With the rectal position restored, any redundant vaginal epithelium is excised and the incision closed

Enterocele

- The surgical principles are similar to those of anterior and posterior repair, but the peritoneal sac containing the small bowel should be excised. In addition, the pouch of Douglas is closed by approximating the peritoneum and/or the uterosacral ligaments

Uterine preserving surgery

Uterovaginal prolapse •

Uterine preserving surgery is used largely when a woman still wants to have further children and therefore the uterus has to be preserved. Occasionally, a woman wishes to preserve her uterus and then may choose this option:

- **Hysterosacropexy:** This may be performed by an open route or a laparoscopic route and a mesh is attached to the isthmus of the cervix and the uterus is suspended by attaching the other part of the mesh to the anterior longitudinal ligament on the sacrum

- **The Manchester repair:** This involves accessing the uterus vaginally amputating the cervix and using the uterosacral cardinal ligament complex to support the uterus. The operation is rarely used now because of problems with complications to the cervix resulting in either cervical stenosis or cervical incompetence and a risk of miscarriage.

- **Le Fort colpocleisis:** This operation is used in very frail patients who are unfit for major surgery and are not sexually active. It involves partial closure of the vagina while preserving the uterus.

Procedures involving hysterectomy

These procedures involve removal of the uterus:

- **Vaginal hysterectomy:** This is one of the oldest major operations with references dating from the time of Hypocrates in the fifth century BC. operation involves making an incision around the cervix and entering the peritoneal cavity from the vaginal side ligating all the major blood vessels and delivering the uterus through the vagina and suturing the vault of the vagina. Obviously, there is lack of support of the vault and to try and improve support, the standard procedure is to shorten the stretched uterosacral cardinal ligament complex and then resuture into the vault of the vagina. Some authors have used variations of this to try and attach the vault even higher in the vagina with a higher uterosacral ligament fixation. A number of modifications have been suggested to try and improve the support of the vagina.

- **Total abdominal hysterectomy and sacrocolpopexy:** This involves complete removal of the uterus through an abdominal incision,followed by repair of the vault of the vagina and then attaching a mesh to the vault of the vagina and suspending it to the anterior longitudinal ligament on the sacrum

- **Subtotal abdominal hysterectomy and sacrocervicopexy:** This operation is becoming more popular. It involves either an abdominal or laparoscopic approach. Most surgeons use the abdominal route. A subtotal hysterectomy is performed leaving the cervix intact. This means the vagina is not entered and there is no vaginal scarring. The cervix is then used as an attachment point for the mesh where there is negligible

- If there is concomitant anterior prolapse at the time of vaginal hysterectomy an anterior repair may be performed. If there is concomitant anterior prolaps at the time of an abdominal procedure a paravaginal repair can be performed, again avoiding the need for

Vault prolapse

- Sacrocolpopexy is similar to sacrohysteropexy but the inverted vaginal vault is attached to the sacrum using a mesh and the pouch of Douglas is closed.
  Sacrospinous ligament fixation is a vaginal procedure in which the vault is sutured to one or other sacrospinous ligament