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اسم المحاضرة الثانية والثلاثون باللغة الإنكليزية: Genital Prolapse

محتوى المحاضرة الثانية والثلاثون

**Genital prolapse**

Pelvic organ prolapse (POP) is defined as the downward displacement of pelvic organs from their original position into or beyond the vagina.

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.

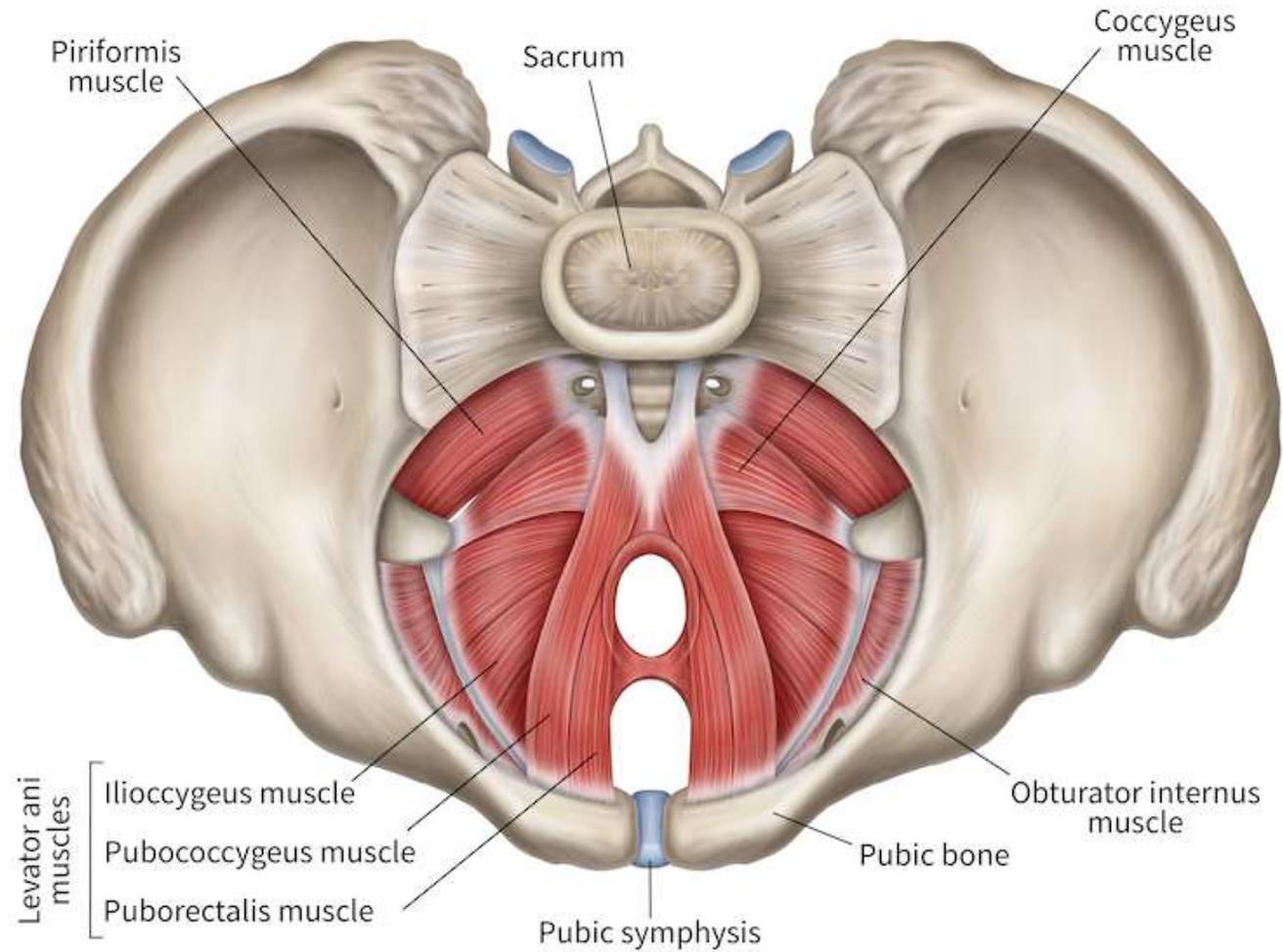
POP will affect a substantial number of women. Skillful assessment and management is required to ensure appropriate treatment and improved outcome. Inappropriate treatment can leave women worse off than when they started.

Increased life expectancy and an expanding elderly population mean that prolapse remains an important condition, especially since the majority of women may now spend a third of their lives in the post-menopausal state. Surgery for urogenital prolapse accounts for approximately 20 per cent of elective major gynaecological surgery and this increases to 59 per cent in elderly women. The lifetime risk of having surgery for prolapse is 11 per cent; a third of these procedures are operations for recurrent prolapse.

# Relevant anatomy

Uterovaginal prolapse is caused by failure of the interaction between the levator ani muscles and the ligaments and fascia that support the pelvic organs. The levator ani muscles are puborectalis, pubococcygeus and iliococcygeus. They are attached on each side of the pelvic side wall from the pubic ramus anteriorly (pubococcygeus), over the obturator internus fascia to the ischial spine to form a bowl-shaped muscle filling the pelvic outlet and supporting the pelvic organs. There is a gap between the fibers of the puborectalis on each side to allow passage of the urethra, vagina and rectum, called the urogenital hiatus. The levator muscles support the pelvic organs and prevent excessive loading of the ligaments and fascia.

# The levator ani muscles



# Incidence

The lifetime risk of surgery for POP is 12–19%, with more than 300 000 women undergoing surgery a year in the USA. Approximately 8% of women in the UK report symptoms of prolapse.

On routine examination, loss of vaginal or uterine support will be seen in up to 30–70% of women who present for routine gynecological care. However, only a small proportion of these will report symptoms. Of this cohort, only about 3–6% will have descent beyond the hymenal margin and it is this group that will tend to be symptomatic.

# 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. In a study of women with severe vaginal vault prolapse following hysterectomy, 60 per cent were over the age of 60 years.

## 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. Only 2 per cent of nulliparous women are reported to have prolapse.

## Race:

Prolapse is generally thought to be more common in Caucasian women and less common in women of Afro-Caribbean origin. However, a study examining racial differences in North America has shown that this may not be the case, as there was little racial variation noted, although this may simply reflect cultural differences in reporting.

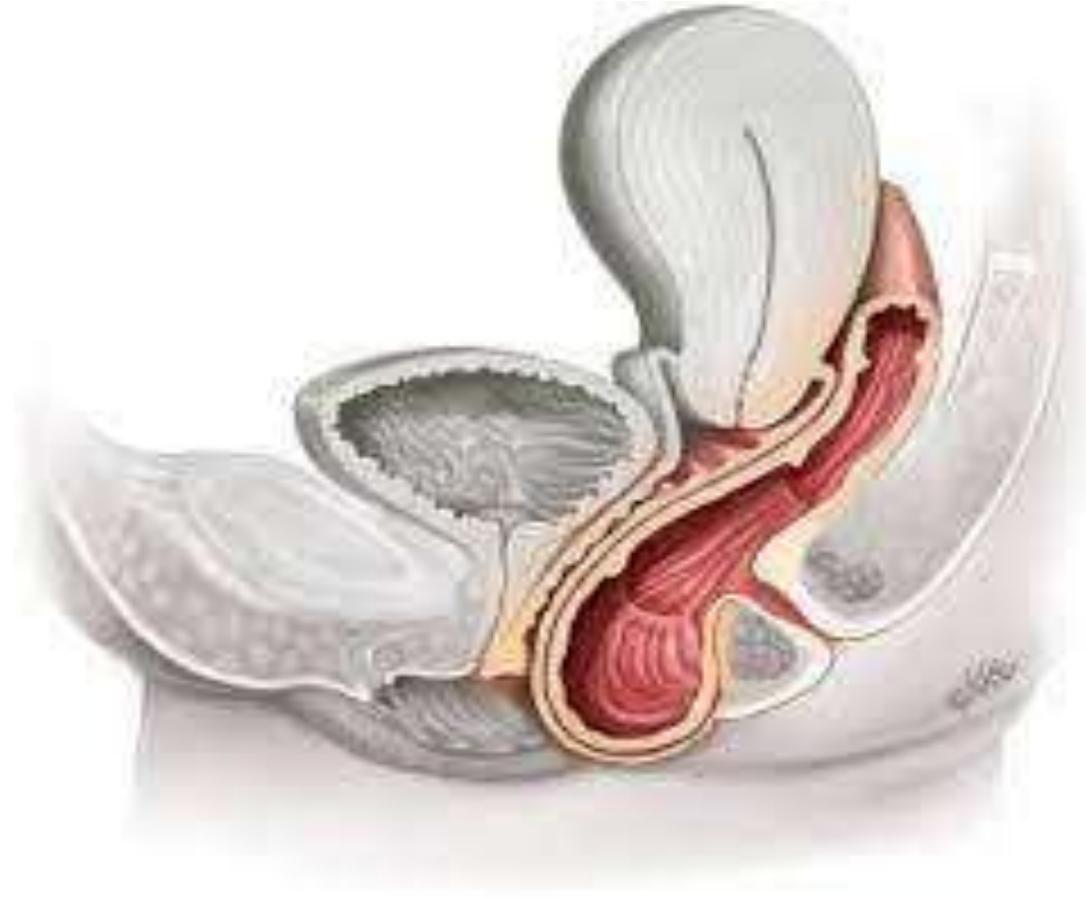
The most common form of prolapse is that of the anterior wall of the vagina (cystocele). Prolapse of the posterior wall (rectocele) is far less frequent and apical prolapse (descent of the uterus or vaginal vault if the patient has had a hysterectomy) the least common.

Patients can present with one or more of the forms and in any combination.

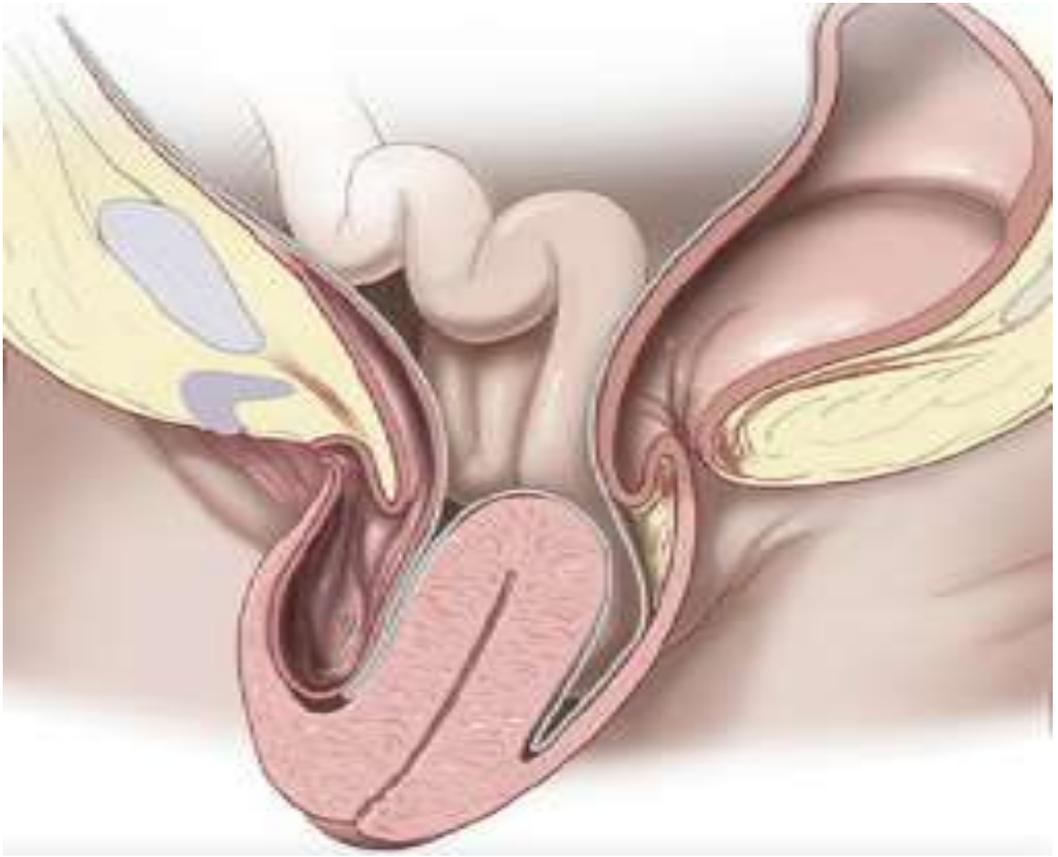
# Anterior vaginal(compartment) wall prolapse (cystocele)



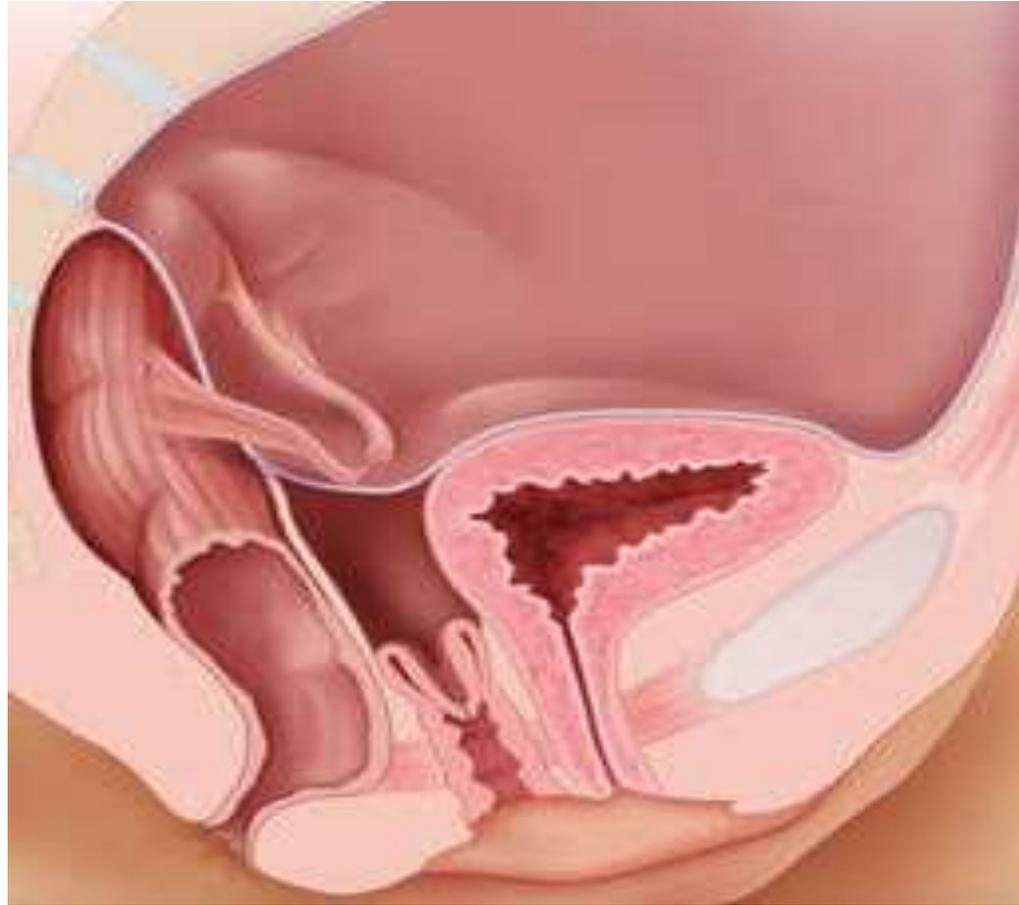
# Posterior vaginal(compartment) wall prolapse(rectocele)



Apical compartment prolapse (descent of the uterus, procidentia)



Apical compartment prolapse(vaginal vault prolapse)



# Classification and grading of urogenital system

There are a range of methods that have been described to classify prolapse. Of these, the POP-Q method is the internationally accepted standard. It has proven inter-observer and intra-observer reliability and is the most commonly cited system in the medical literature.

Alternatively, the Baden–Walker Halfway Scoring System, which has five degrees/grades, is another commonly used POP staging system. The degree, or grade, of each prolapsed structure is described individually (e.g. grade 1 anterior vaginal wall prolapse or grade 3 uterine prolapse). The grade/degree is defined as the extent of prolapse for each structure noted on examination while the patient is straining.

# 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. The pelvic floor may be damaged during childbirth, causing the axis of the levator muscles to become more oblique and creating a funnel that allows the uterus, vagina and rectum to fall through the urogenital hiatus. In addition, the proportion of fascia to muscle within the pelvic floor tends to increase with increasing age, and thus once damaged by childbirth, muscle may never regain its full strength.

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. However, the effects were greatest in those women who had documented stress incontinence or prolapse.

## **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 damage. Furthermore, there is also a reduction in skin collagen content following the menopause. Both of these factors lead to a reduction in the strength of the pelvic connective tissue.

## **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. Consequently, heavy lifting and exercise, as well as sports such as weight lifting, high-impact aerobics and long-distance running, increase the risk of urogenital 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. At Burch colposuspension, the fixing of the lateral vaginal fornices to the ipsilateral ileopectineal ligaments leaves a potential defect in the posterior vaginal wall that predisposes to rectocele and enterocele formation.

Prolapse of the vaginal vault may present following either vaginal or abdominal hysterectomy, although the incidence is low, with only 0.5 per cent of women who have had a hysterectomy requiring further surgical intervention for vaginal vault prolapse.

# Clinical presentation

## **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 defecation, some women complaining of tenesmus and having to digitate to defaecate. Bowel symptoms include the sensation of incomplete emptying and the need to manually assist defecation.

# Differential diagnosis

Differential diagnosis includes:

1. vaginal cysts.
2. pedunculated fibroid polyp.
3. urethral diverticulum.
4. 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 while 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 procedure. 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, cystoscopy should be performed to exclude a chronic follicular or interstitial cystitis.

# Evaluation

Patients presenting with a complaint of POP need to have a comprehensive history taken. This should include a full urinary, bowel and sexual history. It is also essential to establish which are the most worrisome symptoms and to clarify which symptoms the patient hopes will be corrected.

Because of the high incidence of asymptomatic POP, patients presenting to their practitioner with primary bladder or bowel dysfunction are often then referred on for management of the prolapse due to the mistaken belief that their bladder or bowel symptoms are the result of the prolapse noticed during the routine physical examination. Treatment of the prolapse in isolation will very often lead to disappointment with the outcomes achieved. Other symptoms misappropriated to POP are backache and pelvic pain syndrome.

All women presenting with symptoms of POP should have a thorough examination. This should begin with palpation of the abdomen before proceeding to the pelvic examination to exclude an abdominal mass or ascites. For the pelvic examination the women should ideally be examined in the dorsal lithotomy position with Valsalva.

This has been shown to be as effective as an examination in the standing position. In cases where the symptoms do not correlate with the physical findings it may be worthwhile bringing the patient back for a late afternoon clinic and to perform the examination in the standing position.

Women are generally examined in the left lateral position using a Sims' speculum, although digital examination when standing allows more accurate assessment of the degree of urogenital prolapse and, in particular, vaginal vault support. A Sim's speculum is used to systematically identify each component of the prolapse. To assess for anterior prolapse the blade is used to retract the posterior wall while inspecting the degree of prolapse of the anterior wall. Conversely, for the posterior wall the blade is used to retract the anterior wall while assessing the degree of prolapse of the posterior wall. During this examination the position of the cervix, or in a post-hysterectomy patient the vault, is determined. The final part of the assessment is a bimanual pelvic examination. 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.

# Management

## 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

Infant birthweight and current BMI were implicated as risk factors for prolapse after vaginal delivery. Equally, antenatal and postnatal pelvic floor exercises have not yet been shown conclusively to reduce the incidence of prolapse, although they may be protective.

## 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 quantification 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.

In summary, physiotherapy probably has a role in cases of mild prolapse in younger women who find an intravaginal device unacceptable and are not yet willing to consider definitive surgical treatment, especially if they have not yet completed their family.

## Intravaginal devices:

The use of intravaginal devices offers a further conservative line of therapy for those women who are not candidates for surgery. Consequently, 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. 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.

# Types of vaginal pessary



## Surgery:

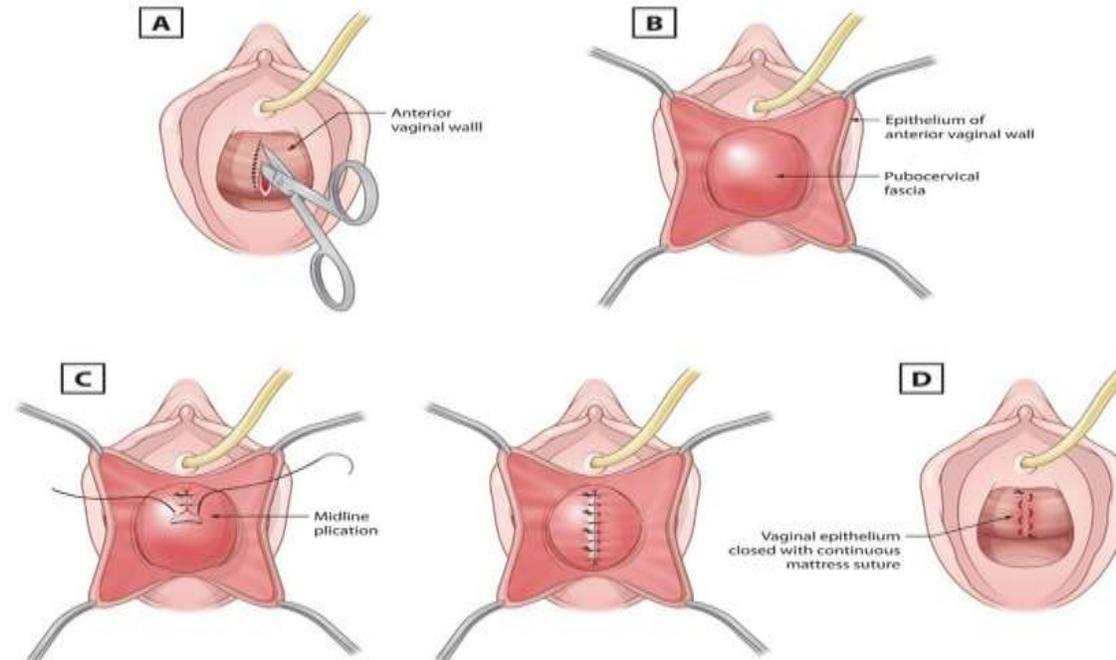
Surgery offers definitive treatment of urogenital prolapse. As in other forms of pelvic surgery, patients should receive prophylactic antibiotics to cover both Gram-negative and Gram positive organisms, as well as thromboembolic prophylaxis in the form of low-dose heparin, and thromboembolic deterrent (TED) stockings. All patients should also have a urethral catheter inserted at the time of the procedure unless there is a particular history of voiding dysfunction, in which case a suprapubic catheter may be more appropriate. This allows the residual urine volume to be checked following a void without the need for recatheterisation. Patients having pelvic surgery are positioned in lithotomy with the hips abducted and flexed. To minimise blood loss, local infiltration of the vaginal epithelium is performed using 0.5 per cent xylocaine and 1/200,000 adrenaline, although care should be taken in patients with coexistent cardiac disease. A vaginal pack may be inserted at the end of the procedure, and removed on the first postoperative day.

# Anterior compartment defects

## Anterior colporrhaphy Indication:

Anterior colporrhaphy is indicated for the correction of cystourethrocele.

## Procedure:

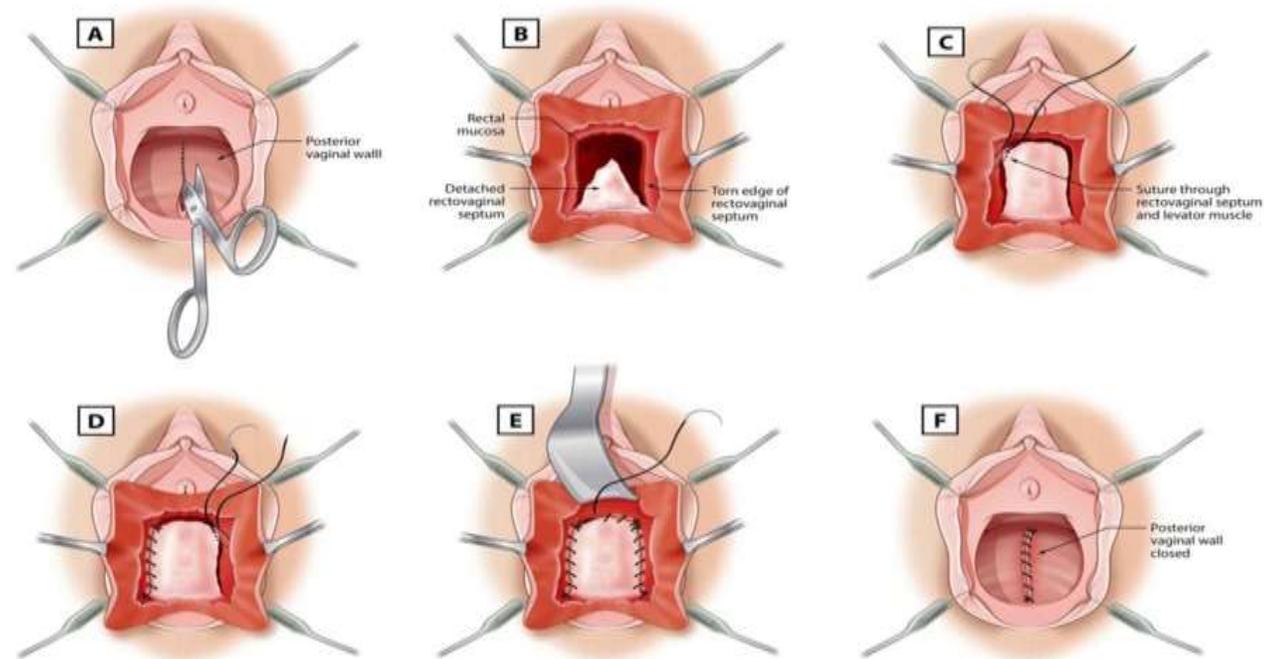


# Posterior compartment defects:

## Posterior colporrhaphy Indication:

Posterior colporrhaphy is indicated for the correction of rectocele and deficient perineum.

## Procedure:



Enterocoele repair

**Enterocoele repair Indication:**

Enterocoele repair is indicated for the correction of enterocoele.

Uterovaginal prolapse:

**Vaginal hysterectomy Indication:**

Vaginal hysterectomy is indicated for uterovaginal prolapse.

This procedure may be combined with anterior and posterior colporrhaphy.

**Contraindications (relative).**

1. Uterine size >14 weeks' gestation, although morcellation or uterine bisection may be used.
2. Two or more caesarean sections.
3. Endometriosis.
4. PID.
5. Suspected malignancy (uterine or ovarian).

# Uterine preserving surgery

Uterine prolapse can also be treated with 'uterus sparing' procedures where an attempt is made to suspend the uterus rather than remove it through a hysterectomy.

The indications to preserve the uterus may be as follows:

1. Preservation of fertility.
2. Lack of uterine pathology.

## ***Routes:***

Abdominal: Sacrospinous hysteropexy, pectineal ligament suspension.

Vaginal: sacrospinous hysteropexy and uterosacral ligament plication have been described.

Laparoscopic: Round ligament plication, sacrohysteropexy, uterosacral plication.

# Vaginal vault prolapse

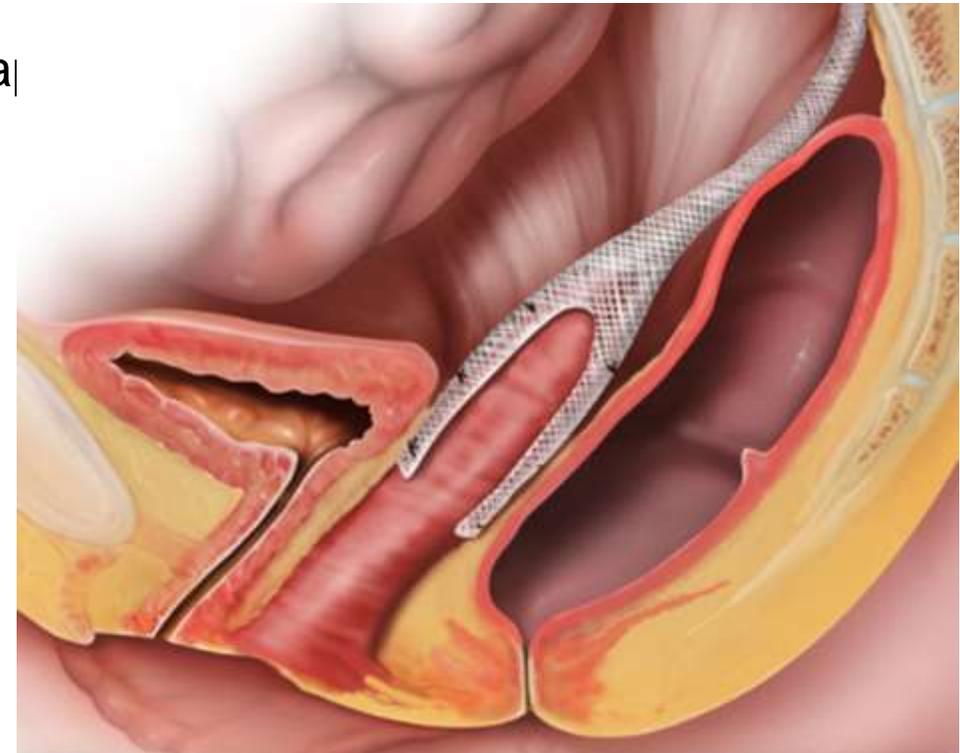
Vaginal vault prolapse occurs equally commonly following vaginal or abdominal hysterectomy, with an incidence of approximately 5 per cent, although only 0.5 per cent of women require further surgery.

## Abdominal sacrocolpopexy

### Indication:

Abdominal sacrocolpopexy is indicated for vaginal vault prolapse

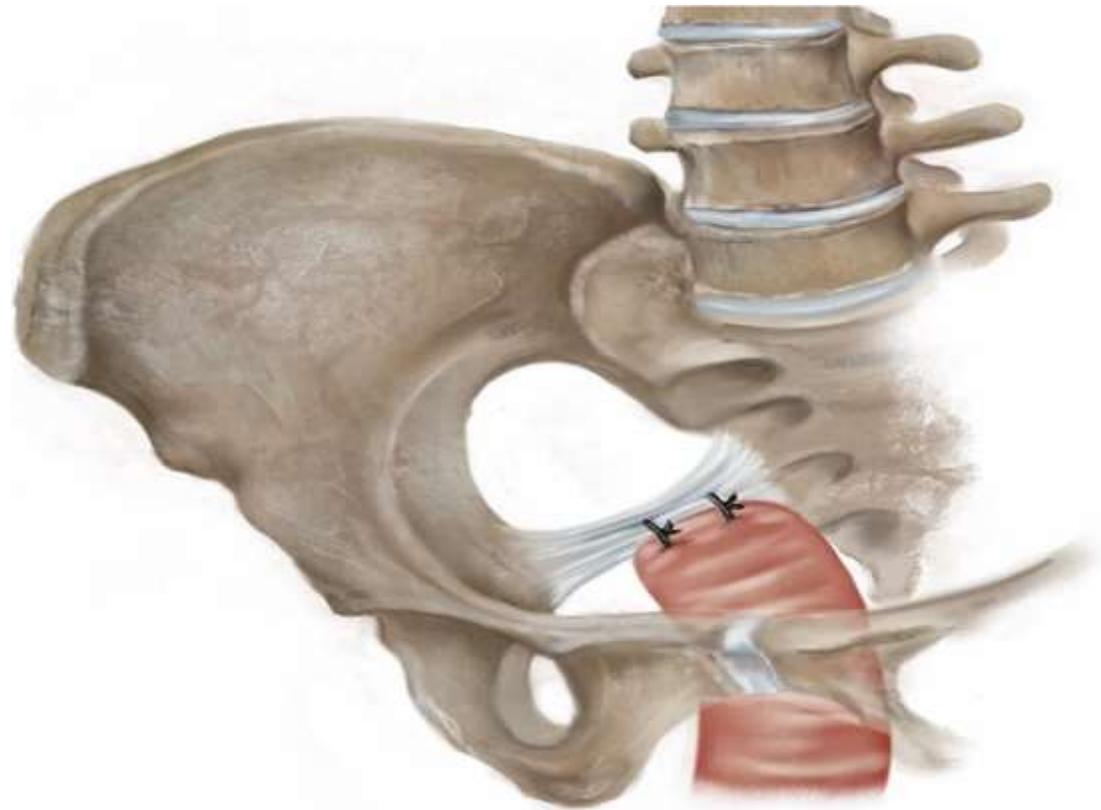
### Procedure:



# Sacrospinous ligament fixation

**Indication:** Sacrospinous ligament fixation is indicated for vaginal vault prolapse.

**Procedure:**

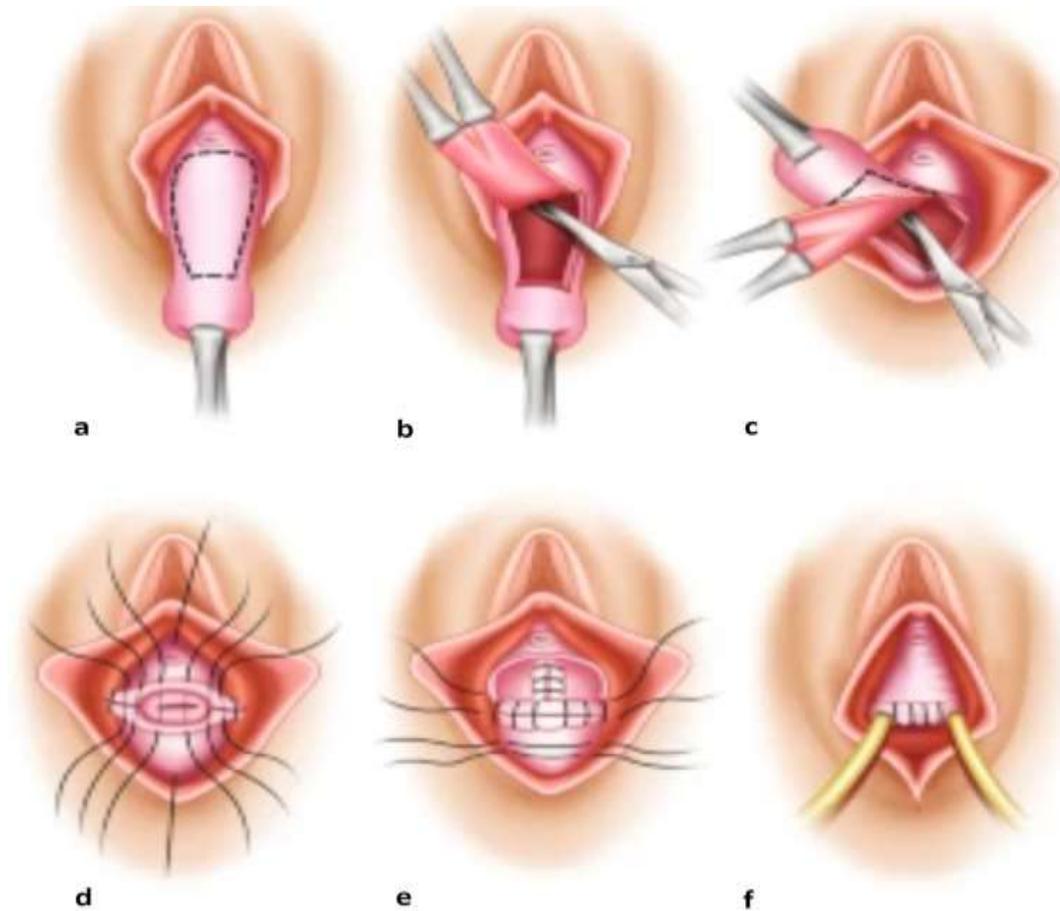


# Obliterative surgical procedures

Obliterative procedures are reserved for women who have failed conservative therapy but who have significant comorbidities and are therefore not candidates for extensive surgery. The most common procedure is a colpocleisis.

This can be done in women who have had a hysterectomy and those who have not. The procedure involves removal of strips of vagina from the anterior and posterior vaginal epithelium, leaving a small strip of lateral epithelium on each side. The anterior and posterior walls are then sutured together. The main purpose of the side strips is to allow for vaginal or uterine secretions to be discharged. The procedure is associated with excellent results and very low complications.

# LeFort Colpocleisis



**THANK YOU**