Management of vault prolapse

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Key content

- Vaginal wall prolapse is increasing in incidence with improvement in life expectancy.
- Conservative and surgical treatments exist.
- Treatment should be tailored to individual needs depending on prolapse symptoms, sexual function and co-existing medical conditions.
- Indications, expertise required and complications of different procedures should be explored with available evidence.

Learning objectives

- Understand the limitations and complications of different procedures and counsel patients appropriately.

Ethical issues

- Should procedures that improve quality of life be performed in elderly patients with comorbid conditions?
- Should simpler surgical treatments such as colpocleisis or vaginal surgery be performed to be more cost-effective compared with laparoscopic or robotic procedures?
- How safe is it to use mesh in vault prolapse by the abdominal or vaginal route?

Keywords: prolapse surgery / recurrent prolapse / vault prolapse

Introduction

Definition

Vaginal vault prolapse is defined as descent of the vaginal cuff below a point that is 2 cm less than the total vaginal length above the plane of the hymen.1 Or simply, the uppermost part of the vagina descends from its normal position, sometimes out through the vaginal opening.

Uterovaginal prolapse has been described as an entity as early as 1550 BC in ancient Egyptian literature and is a very common condition. The incidence of vault prolapse is expected to be on the increase as life expectancy increases. It is difficult to ascertain the prevalence of the condition due to inherent under-reporting as some patients often delay or do not seek care for vaginal prolapse. Vaginal vault prolapse can have a significant impact on quality of life due to discomfort and associated bowel, bladder and sexual dysfunction.

There is an increasing prevalence of bothersome prolapse. The US Census Bureau estimates that it would increase from 3.3 million in 2010 to 4.9 million in 2050.2 Population studies by Swedish and Dutch clinicians have found the prevalence to be between 8% and 12% for pelvic organ prolapse by self reported questionnaires and pelvic organ prolapse quantification (POP-Q) assessment.3,4

Aetiology

Age, menopause and childbirth have all been cited as aetiological factors. Samuelsson revealed independent statistical associations with age, parity, maximal birth weight, and pelvic floor muscle strength by multi-variate analysis in a Swedish population study.5 Racial differences have also been reported. It is reported to be more common in Asian women (67%) compared to Caucasian (26%) or African (28%) women.6 It is unclear if it is due to inherent genetic or lifestyle factors.

Diagnosis

A good history from the patient and a detailed examination is required to establish diagnosis. It is also essential to establish the need to preserve coital function. The overall treatment objective should be confirmed by the patient and the clinician at diagnosis; i.e. symptom relief from prolapse sensation, improvement of arepareunia or dyspareunia, urinary or bowel symptom improvement.

The most common symptom of presentation is a bulge or protrusion through the vagina. Varying degrees of bladder dysfunction may co-exist, such as, frequency, urgency, voiding difficulty, the need to reduce the prolapse for micturition, stress incontinence and urge incontinence.
Sexual dysfunction may be a feature in sexually active couples and may affect one or both partners. Either obstruction to intercourse and/or laxity is common. Obstructed defaecation may also occur presenting with incomplete bowel emptying and pocketing with splinting. These patients present with an inability to open their bowels on straining and a need to splint the perineum for defaecation. These patients would have had a prior hysterectomy by either the abdominal or vaginal route for varying indications.

The need to investigate all patients presenting with vault prolapse with uroflow or cystometrogram is open to debate if stress incontinence or voiding difficulty is suspected. Twin channel cystometry can be helpful. If urodynamic stress incontinence (USI) is a major issue, treatment often incorporates an incontinence procedure such as a mid urethral tape. Some clinicians would routinely combine it with an incontinence procedure. However, Maher’s review in 2009 and then again in 2011 confirmed that there is no evidence to promote this practice. The management of vaginal prolapse depends on the age at presentation, co-existent medical disorders that may impact on the type and duration of anaesthesia, desire to preserve sexual function and the preference of route and expertise of the surgeon.

Conservative management

Physiotherapy

No specific guidance or evidence exists to assess the role of pelvic floor physiotherapy in the management of vault prolapse. A review of three randomised trials failed to find sufficient evidence for judging the value of conservative management of pelvic organ prolapse. More recently, the POPPY trial has examined the role of pelvic floor muscle training in a multicentre RCT and concluded that there is now sufficient evidence to conclude that physiotherapy is effective and cost-effective in reducing prolapse symptoms and should be recommended as first-line management for prolapse.

Pessary

A systematic review on the use of pessaries in all types of prolapse concluded that improvement in bulge sensation, bladder symptoms and sexual behaviour occurred with a reported satisfaction rate in 70–92%. It had similar outcomes to surgery at 1 year follow-up. However, it could not be fitted in 15% of patients at presentation. The common side effects reported are bleeding, vaginal discharge, pain, constipation and odour in 56% of patients.

Pessary is a popular option especially in patients who do not wish to consider surgery due to comorbid conditions or prior surgery. However, complications such as vaginal erosion and rare cases of migration into bladder, rectum or soft tissue are reported. Various types of pessary have been described. The ring and the shelf pessaries are the most commonly used. Newer forms such as the cube pessary, self-introducing pessaries with handles and Gellhorn pessaries are other options.

Surgical management

The aim of surgical repair must address the need to preserve or improve function and should restore normal anatomy. The route of surgical management is rife with controversy. There are different procedures that can be performed by the vaginal, abdominal and the laparoscopic or robotic laparoscopic approach.

Vaginal route

Proponents of the vaginal approach claim that the presence of good pelvic floor tone and the presence of good endopelvic fascia are prerequisites for a vaginal procedure. However, the argument against this would be that it would seldom be the case in patients with existing vault prolapse.

Sacropinous fixation

A longitudinal incision is made over the posterior vaginal wall and extended to the apex of the vaginal wall. The vaginal mucosa is dissected away from the rectovaginalis fascia until the puborectalis muscle is identified. The sacropinous ligament that runs from the ischial spine to the sacrum is then identified by sharp and blunt dissection. Two sutures are inserted through the sacropinous ligament and secured to the apex of the vagina. This has been made technically easier by the introduction of newer devices to capture the suture during insertion into the sacropinous ligament. A long-term follow-up of 55 patients reported a high rate of sexual dysfunction. Good vault suspension was reported. However, more than a third of the patients had prolapse of the other compartments.

A review of articles on sacropinous fixation between 1996 and 2010 concluded that sacropinous fixation achieves good long-term objective and subjective outcomes and improves quality of life in women with pelvic organ prolapse. The complication rates were stated to be comparable to those of abdominal sacrocolpopexy and lesser than those of transvaginal mesh procedures. Surgeons who approve of this procedure argue that it is cost effective and time tested.

Maher et al. reviewed three trials and reported no significant difference in prolapse outcomes with abdominal or vaginal sacropinous colpopexy. However, subjective failure of the procedure was twice as much in the vaginal arm compared with abdominal sacrocolpopexy.

Iliococcygeal fixation

An incision is made in the posterior vaginal wall along with an incision in each gluteal region. A tunnelling device is used.
to insert the mesh through one buttock and with a finger in the vaginal incision, it is passed around the rectum. The mesh is then guided through the vagina and retrieved through the contralateral gluteal incision. This is then sutured to the top of the vagina as a tension free mesh.

A prospective study of 21 patients reported that, in the short term, there was both subjective and objective improvement in prolapse symptoms. The studies analysed by the NICE guidance for iliooccygeal fixation concluded that failure occurred in 10% and 2–30% had further surgery. Mesh erosion occurred in 7–21%, infection in 5% and rectal perforation in 1%. The main criticism of this procedure by surgeons preferring the abdominal route is a high incidence of mesh erosion with the attendant complications of bleeding, pain and dyspareunia.

Hence, NICE recommended that, due to inadequate data on efficacy and safety of this procedure, it ‘should only be used with special arrangements for clinical governance, consent and audit or research’.

**Colpocleisis**

This was first described by Le Fort in the late 18th century. There has been renewed interest in the procedure in recent years. A short series of cases has reported good patient satisfaction, objective improvement in prolapse outcomes and improved quality of life measures. Various modifications have been suggested including perineocleisis, partial and near total vaginectomy and colpocleisis in combination with incontinence procedures. This is often the procedure of choice in older patients over 80 years of age, with comorbid conditions. It restores quality of life, especially in patients with limited mobility, complications with the use of pessary such as ulceration and bleeding or to aid care of such patients by carers in homes. Success rates as high as 97% have been reported in a short-term follow-up study.

**Vaginal mesh kits**

There has been a recent increase in the availability of trocar-based vaginal devices for surgical treatment of vaginal prolapse. The FDA has reviewed the evidence and concluded that ‘surgical mesh in the transvaginal repair of pelvic organ prolapse does not improve symptoms or quality of life more than non-mesh repair’. The commonly reported complications were mesh erosion into the vagina needing further surgery, mesh contraction with vaginal shortening, tightening and pain. Better quality meshes and more robust evidence is required before widespread use of this procedure. There is a need for these new procedures to be research-driven rather than be industry-driven.

A recent review by the Canadian Urogynaecology Committee concluded that the vaginal mesh kits must be considered novel until further evidence is available. It also stressed the need for specialist training before undertaking these complex surgical procedures.

The use of vaginal mesh is a rapidly advancing and evolving science. Well constructed trials should establish patient selection criteria and the required surgical techniques to minimise complication rates.

**Abdominal route**

The proponents of this route for the treatment of vaginal vault prolapse argue that it preserves vaginal length, prevents scarring and thereby improves sexual function by avoiding shortening and dyspareunia. Inherent to this approach, however, is longer recovery and hospital stay compared with the vaginal route.

**Abdominal sacrocolpopexy**

A long-term follow-up of 21 patients with a median of 55 months concluded that abdominal sacrocolpopexy provided long-term symptom relief as well as anatomical stability.

A review by Maher concluded on the basis of three randomised trials that abdominal sacrocolpopexy had lesser recurrence of vault prolapse and dyspareunia when compared with sacrospinous fixation. However, an abdominal procedure involves longer surgical and recovery time and is less cost-effective. A more recent update of the topic has confirmed that there are no ongoing randomised controlled trials currently. NICE guidance recommends that the current evidence on the safety and efficacy of sacrocolpopexy using mesh for vaginal vault prolapse repair appears adequate to support the use of this procedure.

**Laparoscopic sacrocolpopexy**

This is becoming increasingly popular with the added benefits of minimal access surgery such as shorter hospital stay, lesser analgesia and quicker recovery which are often criticisms when the open sacrocolpopexy is compared with and the vaginal procedures such as sacrospinous ligament fixation. It does take a longer surgical time in comparison to other procedures. A recent randomised trial between the total vaginal mesh and the laparoscopic sacrocolpopexy concluded that the laparoscopic sacrocolpopexy group had a longer operating time, reduced inpatient days, and quicker return to activities of daily living compared with the total vaginal mesh group. The follow-up review after 2 years concluded that both total objective prolapse rates for all compartments as well as reoperation rates were considerably higher in the vaginal mesh group.

The 1 year follow-up from the laparoscopic sacrocolpopexy trial in the UK concludes that the laparoscopic sacrocolpopexy with mesh is equivalent to open sacrocolpopexy with regard to vaginal vault correction with...
McAssey, T., Valls, D., & Parson, A. (2011). The capital cost of setting up the service is very high.

**Conclusion**

Safer surgical procedures that are economical, with low complication rates and high subjective and objective rates are always desirable. Good randomised controlled trials comparing the different routes and techniques are the way forward. Also, vaginal kits will improve with time, when the ideal mesh that does not contract or cause erosion or pain can be found. Meanwhile, long-term follow-up data on abdominal and laparoscopic procedures should be ongoing.

**Disclosure of interests**

None to declare

**References**


