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THE MANAGEMENT OF POST HYSTERECTOMY VAGINAL VAULT PROLAPSE

This is the first edition of this guideline.

1. Purpose and scope

This guideline has been developed by the Royal College of Obstetricians and Gynaecologists and the British Society of Urogynaecology to provide guidance on the management of post-hysterectomy vaginal vault prolapse.

2. Introduction and background

The International Continence Society defines post-hysterectomy (apical) vaginal prolapse as descent of the vaginal cuff scar below a point that is 2 cm less than the total vaginal length above the plane of the hymen.[1] The vaginal cuff scar corresponds to point C on the Pelvic Organ Prolapse Quantification (POPQ) grid.[2] A number of definitions have been used in studies carried out prior to the introduction of standard terminology by the International Continence Society.[1] A retrospective follow up of 448 women undergoing hysterectomy, using the definition described by Baden *et al.*,[3] showed the condition to follow 11.6% of hysterectomies performed for prolapse and 1.8% of those performed for other indications.[4]

Although several surgical procedures have been described, randomised controlled studies specifically addressing post-hysterectomy vaginal vault prolapse are limited and most reports are based on case series. Considerable variation can be seen both in grading prolapse and assessing the outcome of its management. Complications and recurrence are often described in the short term. The effect of surgery on bladder, bowel and sexual function is seldom addressed. Long-term results and QoL data are sparse and there are no established criteria to help selecting the appropriate procedure for individual women. It is difficult, therefore, to counsel women and the choice is often based on the clinician's personal preference.

The aim of this guideline is to outline available evidence for different approaches to the condition.

3. Identification and assessment of evidence

This Guideline is based on the recommendations formulated by the third International Consultation on Incontinence, 2005, which involved a worldwide panel of experts. In addition, the Cochrane Library and Cochrane Register of Controlled Trials were searched for relevant randomised controlled trials, systematic reviews and meta-analyses. A search of Medline and PubMed electronic databases from 1966–2006 was also carried out. The date of the last search was February 2006. In addition, conference proceedings and abstracts of relevant obstetrics and gynaecology articles were searched.

The databases were searched using the relevant MeSH terms including all subheadings. This was combined with a keyword search using 'human', 'female', vault prolapse', 'apical prolapse', 'hysterectomy', 'culdoplasty', 'pessary', 'pelvic floor exercises', 'colpopexy', 'sacrocolpopexy', 'sacropexy', 'sacral colpopexy', 'sacrospinous fixation', 'uterosacral suspension', 'posterior intravaginal slingoplasty', 'vault suspension', 'colpocleisis', 'vaginectomy', 'laparoscopic', 'randomised controlled trials' and 'meta-analyses'. Only material in the English language was included.

The definitions of the types of evidence used in this guideline originate from the US Agency for Health Care Policy and Research. Where possible, recommendations are based on, and explicitly linked to, the evidence that supports them. Areas lacking evidence are highlighted and annotated as 'good practice points'.

4. Prevention at the time of hysterectomy

Can vaginal vault prolapse be prevented at the time of hysterectomy?

McCall culdoplasty at the time of vaginal hysterectomy is a recommended measure to prevent enterocele formation. **A**

A small randomised trial compared vaginal Moschowitz-type operation, McCall's culdoplasty and peritoneal closure of the cul-de-sac as preventive measures against the development of enterocele. It included 100 women and showed that McCall's culdoplasty was more effective than vaginal Moschowitz or simple closure of the peritoneum in preventing enterocele at 3 years' follow-up.[5] The technique involves approximating the uterosacral ligaments using continuous sutures, so as to obliterate the peritoneum of the posterior cul-de-sac as high as possible.[6] A similar approach has been described for abdominal hysterectomy.[7,8] No comparative studies are available to assess the value of such step at the time of abdominal hysterectomy, which is often carried out for indications other than prolapse.

Evidence level Ib

Suturing the cardinal and uterosacral ligaments to the vaginal cuff at the time of hysterectomy is a recommended measure to avoid vault prolapse. **B**

Attaching the uterosacral and cardinal ligaments to the vaginal cuff and high circumferential obliteration of the pouch of Douglas has been suggested to prevent vault prolapse and enterocele formation.[9] No cases of vault prolapse or enterocele were recorded among 112 patients over a follow-up period extending from 7 to 42 months.

Evidence level III

Sacrospinous fixation at the time of vaginal hysterectomy is recommended when the vault descends to the introitus during closure. **B**

Prophylactic sacrospinous fixation has been suggested at the time of vaginal hysterectomy for marked uterovaginal prolapse,[10] when the vault (point C on the POPQ system)[2] could be pulled to the introitus at the end of anterior vaginal wall closure, which is a selected subgroup of those undergoing vaginal hysterectomy. A retrospective study reported the outcome in 48 patients at a mean follow-up of 2 years.[10] There was one vault prolapse. Twenty women complained of right-buttock pain, which resolved spontaneously by 6 weeks' follow-up. Five women, who did not have anterior repair at the time, subsequently developed anterior vaginal wall prolapse. No information was provided about sexual dysfunction in this study.

Evidence level III

One retrospective study of 124 women found no significant difference in the incidence of vaginal vault prolapse between those who had sacrospinous fixation and those who had McCall's culdoplasty at a minimum follow-up of 4 years.[11] However, the sacrospinous fixation took

significantly longer to perform and was associated with significantly more blood loss. In addition, significantly more women developed Grade 2 or 3 anterior vaginal wall prolapse in the sacrospinous fixation group than the McCall's culdoplasty group. There was no significant difference in sexual function or the development of stress incontinence in those women who were continent prior to vaginal hysterectomy.

Evidence level III

5. Assessment

How should the woman be assessed?

Assessment of the woman should be comprehensive and objective, addressing quality of life, looking for all pelvic floor defects and should be based on standard tools. **C**

Assessment of the woman should include QoL evaluation, using disease-specific validated quality of life questionnaires. This helps patient-centred assessment of symptoms and condition impact on and facilitate subsequent audit and research. Examination should be made according to standard quantifying tools, such as POPQ.[2] The use of such tools enables assessing outcome for individual women, as well as in audit and research. It will require time and is facilitated by the use of sheets with preprinted tables and diagrams.

Evidence level IV

Assessing occult stress incontinence of urine may be made with a full bladder after reducing the prolapse with a pessary or sponge holder, although this is not currently validated by evidence and is not a substitute for adequate patient counselling about this complication.The role of prophylactic surgery for occult stress incontinence is unclear.[12]

All pelvic floor defects should be identified, to enable surgical repair of significant and potential defects.[13–15] Women with post-hysterectomy vaginal vault prolapse often have associated anterior or posterior vaginal wall prolapse.[16,17] Failure to address such defects at the same time will lead to women presenting with recurrent prolapse from those defects left without support (indirect recurrence).[18,19] There are, however, no studies comparing performing repair of all defects at the same time as vault prolapse surgery with repairing such defects in a separate setting at a later stage.

Evidence level III

6. Conservative management

Is there a role for conservative management?

The role of conservative measures for post-hysterectomy vaginal vault prolapse is unclear. **C**

Conservative measures include pelvic-floor exercises and different types of pessaries, of which ring and shelf are the most commonly used. These measures have been assessed for prolapse in general, rather than post-hysterectomy vaginal vault prolapse. There is no evidence to suggest whether pelvic-floor exercises are helpful in vault prolapse.[20] Pessaries, especially shelf ones, preclude sexual intercourse and are therefore more suitable for women who are not sexually active. They also require changing every 6–8 months to prevent ulceration of the vaginal vault. If left for a long period, there is a risk of calcium deposition, as well as of erosion and fistula formation. They are therefore reserved for physically frail women, those considered unfit for surgery or when surgery is declined. Ring pessaries tend to fail in women with deficient perineum, who may require shelf pessaries instead. Local estrogen can be used to improve atrophic changes, though there is no evidence to judge their value in relation to the frequency of pessary change.[21]

7. Surgical procedures

How can post-hysterectomy vaginal vault prolapse be repaired surgically?

7.1 Vaginal wall repair

Anterior and posterior repair along with obliteration of the enterocele sac are inadequate for post-hysterectomy vaginal vault prolapse. **C**

The standard repair operation does not support the vaginal vault and risks vaginal narrowing and shortening, and thus dyspareunia, especially when posterior repair is carried out.[22] There is insufficient evidence to judge the value of levator myorraphy during vaginal repair.[23]

Evidence level IV

7.2 Abdominal sacrocolpopexy, sacrospinous fixation and related procedures

Abdominal sacrocolpopexy and sacrospinous fixation should be considered in terms of their relative benefits and risks. ✓

Abdominal sacrocolpopexy is an effective operation for post-hysterectomy vaginal vault prolapse. In comparison, sacrospinous fixation may have a higher failure rate but has lower postoperative morbidity. **A**

Only one prospective randomised controlled study compared abdominal sacrocolpopexy and unilateral sacrospinous fixation for post-hysterectomy vaginal vault prolapse.[24] This study was relatively small, including 89 women, and the follow-up duration ranged from 6 to 60 months. Additional prolapse and continence surgery was performed as required. Abdominal sacrocolpopexy was associated with significantly longer operating time, slower return to normal activity and higher cost. There was no significant difference in terms of objective and subjective success, urinary, bowel or sexual dysfunction or quality of life. Complications were rare but included:[24] sacrocolpopexy: blood transfusion (1), bladder injury (1), incisional hernia (2), mesh rejection (1), wound infection (1) sacrospinous fixation: blood transfusion (1), bladder injury (1), rectovaginal haematoma (1), vaginal pain (1).

Evidence level Ib

The worldwide panel of experts involved in producing the third International Consultation on Incontinence noted that, although this trial appeared to show equal effectiveness, the combined rate of apical and anterior vaginal wall prolapse was significantly higher following vaginal sacrospinous fixation.[24,25] This was offset by an increased number of posterior vaginal wall prolapse following abdominal sacrocolpopexy.

In addition, two prospective randomised controlled studies compared the two procedures but included cases with uterovaginal prolapse, for which a hysterectomy was carried out at the same time. This point needs to be borne in mind when applying the results of these studies to post-hysterectomy vaginal vault prolapse. ✓

In one randomised controlled study, abdominal sacrocolpopexy was compared with bilateral sacrospinous fixation.[26] A total of 88 women were included and follow-up ranged from 1 year to 5.5 years (mean 2.5 years). The reoperation rate was 26% following sacrospinous fixation, compared with 13% after abdominal sacrocolpopexy; this difference did not reach significance. Moreover, unsatisfactory outcome was significantly sooner after vaginal sacrospinous fixation than following abdominal sacrocolpopexy. In addition, the vaginal group had longer catheter use, more urinary tract infection and more urinary incontinence. On the other hand, operating time and hospital stay were shorter with vaginal sacrospinous fixation.

Evidence level Ib

In a randomised controlled trial of 138 women, optimum objective outcome was significantly more common after abdominal sacrocolpopexy. In addition, sacrospinous fixation was associated with

significantly more intraoperative blood loss, longer catheterisation and hospital stay and more sexual dysfunction. Of the 138 women included in the study, 118 were available for follow up that ranged from 1 to 5.2 years, with an average of 2.1 years.[27]

Evidence level Ib

Two studies, one a small randomised controlled trial, showed that abdominal sacrocolpopexy maintains a more physiological vaginal axis than sacrospinous fixation, on the basis of magnetic resonance imaging studies (MRI).[28,29]

There were three retrospective studies that compared the two techniques. The first study showed no significant difference in the incidence of recurrent vault prolapse, vaginal length or the incidence of sexual dysfunction after both procedures.[1] Intraoperative blood loss was significantly higher with abdominal sacrocolpopexy. The study included 80 women in sacrocolpopexy group and 130 women in the sacrospinous fixation group and follow up ranged from 6 months to 5 years.

The second study compared those having abdominal sacrocolpopexy alongside Burch colposuspension with those having unilateral sacrospinous fixation alongside needle suspension for vaginal vault prolapse and coexisting stress incontinence.[31] The study included 56 women in the abdominal group and 61 women in the vaginal group. The follow up duration ranged from 4 to 51 months in the abdominal group and from 7 to 72 months in the vaginal group. There was no significant difference in the incidence of complications. However, hospital stay was significantly longer in the vaginal group, mainly because of delay in resumption of spontaneous voiding. The authors described a significantly higher incidence of recurrent vault prolapse and recurrent stress incontinence in the vaginal group.

Evidence level III

The third study included 22 women, which is a small number to show any difference.[32] However, the vaginal sacrospinous fixation required less operating time, was associated with less bleeding and shorter postoperative stay and was therefore more economic. The study was too small to identify significant differences in complication or effectiveness.

Given the available evidence, it is difficult to recommend one procedure over the other. A recent Cochrane review examined surgical interventions for prolapse in general and reviewed a number of studies of surgery for vault prolapse.[33] The review relied on three of the randomised studies outlined above[25-27] and suggested less dyspareunia and a lower rate of recurrence with abdominal sacrocolpopexy, which in turn was associated with a longer operating time, slower return to regular activity and increased cost.

What criteria can be used to determine which procedure to use?

The following criteria should be considered when helping women choose between the two procedures. **C**

For a choice to be made, it is important that the surgeon is experienced in both procedures and able to choose between them before surgery.

Vaginal sacrospinous fixation requires adequate vaginal length and vault width to enable reaching the sacrospinous ligament.[34]

Co-existent anterior and/or posterior vaginal wall prolapse can easily be managed by anterior and/or posterior repair while performing vaginal sacrospinous fixation. A separate vaginal procedure will be required for abdominal sacrocolpopexy, bearing in mind that the sacrocolpopexy mesh can be extended in front of and/or behind the vagina to effect anterior and/or posterior vaginal repair.[35] Moreover, posterior repair can also be performed laparoscopically.[15]

Abdominal sacrocolpopexy can be carried out if women require laparotomy for other indication(s).[32]

Vaginal sacrospinous fixation is more suitable for physically frail women, because of the morbidity associated with abdominal surgery.[36] However, there was no difference in pain in one of the randomised trials that compared abdominal sacrocolpopexy and vaginal sacrospinous fixation.[26] Besides, the operative morbidity associated with sacrocolpopexy is reduced when the procedure is done laparoscopically.[15]

Abdominal sacrocolpopexy is more suitable for sexually active women, as sacrospinous fixation is associated with exaggerated retroversion of the vagina, leading to a less physiological axis than following sacrocolpopexy.[28,29]

Vaginal length is also well maintained after sacrocolpopexy[37] whereas sacrospinous fixation can cause vaginal narrowing and/or shortening, especially when carried out alongside repair of anterior and/or posterior vaginal wall defects, leading to dyspareunia.[38]

Evidence level IV

7.3 Operative details of sacrocolpopexy and sacrospinous fixation

A number of randomised controlled studies have addressed specific steps of abdominal sacrocolpopexy and sacrospinous fixation.

Should prophylactic continence surgery be performed at the time of sacrocolpopexy?

It is not clear whether prophylactic continence surgery is beneficial in women who are urodynamically continent and it should not be routinely recommended.

A

A randomised controlled trial compared abdominal sacrocolpopexy with and without prophylactic Burch colposuspension.[39] The trial aimed at recruiting 480 women but was stopped after including 322 women, when an interim analysis showed a significant difference in the incidence of stress incontinence at 3 months' follow-up. All women underwent urodynamic assessment after prolapse reduction. Women who were continent as well as those with occult urodynamic stress incontinence were enrolled and the trial also included women having a hysterectomy. At 3 months' follow-up, the incidence of stress incontinence was 23.8% in the sacrocolpopexy with Burch colposuspension group compared with 44.1% in the sacrocolpopexy only group ($P < 0.001$). When analysis was limited to those who were continent on urodynamic assessment with prolapse reduction; the incidence was 20.8% in the sacrocolpopexy with Burch colposuspension group and 38.2% in the sacrocolpopexy only group ($P = 0.007$). The majority of women were diagnosed to have stress incontinence on the basis of their symptoms. There was no significant difference in operative or postoperative complications, including voiding dysfunction, between the two groups. As tension-free vaginal tape (TVT) sling and similar slings are increasingly used as the first line in continence surgery, it is difficult to recommend prophylactic continence surgery when performing sacrocolpopexy on the basis of this trial alone.

Evidence level Ib

What is the role of unilateral or bilateral sacrospinous fixation?

There is no evidence to recommend bilateral or unilateral sacrospinous fixation.

C

A retrospective study looked at 22 attempts to perform bilateral sacropsinous fixation in women with post-hysterectomy vaginal vault prolapse.[40] The procedure was only possible in 16 women (73%) and evaluation of the resulting tension from bilateral approach was the only criterion that could predict the feasibility of bilateral fixation. The bilateral approach takes 20–30 minutes more and is associated with an additional blood loss of 25–50 ml. Follow-up ranged from 6 to 40 months and showed no recurrence of vault prolapse but 3 women (18.8%) had anterior vaginal wall prolapse. No randomised studies are available.

Evidence level IV

What is the role of iliococcygeus fixation?

Iliococcygeus fixation does not reduce the incidence of anterior vaginal wall prolapse associated with vaginal sacrospinous fixation and should not be routinely recommended. **B**

Iliococcygeus fixation was introduced in the hope of reducing the exaggerated retroversion of the vagina, and thus the subsequent increase in anterior vaginal wall prolapse, and avoiding the risk of injury to pudendal and sacral nerves and vessels associated with sacrospinous fixation.[41] It involves bilateral fixation of the vaginal vault to the iliococcygeus fascia.[42] A prospective non-randomised matched case–control study, however, showed no significant difference in postoperative complications or subsequent development of anterior vaginal wall prolapse from vaginal sacrospinous fixation.[43] Patient satisfaction was better following sacrospinous fixation (91% versus 78%, $P = 0.01$).The study included 128 women with a mean follow-up duration of 19 months in the sacrospinous fixation group and 21 months in the iliococcygeus group.

Evidence level IIb

7.4 Is vaginal uterosacral ligament suspension recommended for post-hysterectomy vaginal vault prolapse?

Caution is advised with vaginal uterosacral ligament suspension, although it is effective for post-hysterectomy vaginal vault prolapse, there is a risk of ureteric injury. **B**

Bilateral suspension of the vaginal vault to the uterosacral ligaments through a vaginal approach has been described. All reports are retrospective case series and there are no comparative studies. Most published studies included women having hysterectomy for uterovaginal prolapse,[44–47] although some reported those having the procedure for post-hysterectomy vaginal vault prolapse separately.[48,49]

Evidence level III

Complications included ureteric injury, which can be as high as 10.9%, bladder injury, urinary tract infection, blood transfusion and small bowel injury.[44,45,49] Taking the suture into the deep dorsal aspect of the ligament is reported to reduce the incidence of ureteric injury.[50] Suture erosion was noted with permanent sutures. One study reported a reoperation rate of 4.5% and patient dissatisfaction rate of 11%.[46] In another study,[44] the direct prolapse recurrence rate was 5% and the indirect prolapse recurrence rate was 23%.

7.5 Are laparoscopic procedures recommended?

Clinicians should be aware that laparoscopic procedures involve a high level of expertise and longer operation times. Laparoscopic sacrocolpopexy appears to be as effective as open sacrocolpopexy. **B**

The ureters are particularly at risk during laparoscopic uterosacral ligament suspension. **B**

There is insufficient evidence to judge the value of other laparoscopic techniques. **C**

Laparoscopic techniques used to treat this condition are sacrocolpopexy, uterosacral ligament suspension and sacrospinous fixation.[51] There are no studies comparing any of the three techniques to any other procedure for post-hysterectomy vaginal vault prolapse and all evidence comes from retrospective series.

The advantages of a laparoscopic approach include an enhanced view of the pelvis, which facilitates a more anatomical repair and less scarring, as well as reduced postoperative morbidity and shorter stay in hospital.[15,51-55] The approach requires skill, training and longer operating time, although operating time shortens with greater experience.[56,57]

Laparoscopic sacrocolpopexy follows the same technique as for abdominal sacrocolpopexy and the mesh can be extended anteriorly and posteriorly as in the open procedure.[58] The laparoscopic approach seems to be as effective as the open approach, although randomised studies are

Evidence level III

awaited.[15,55,59] Available literature is limited and the largest series included 103 women, of whom only 66 were physically examined 37–124 months after surgery.[55] Complications include injury to bladder and bowel, which can be repaired laparoscopically, wound haematoma and urinary tract infection.[55] Conversion to laparotomy can be as high as 8% but drops with experience to less than 1%.[55,60]

Laparoscopic uterosacral ligament suspension entails reattachment of the uterosacral ligaments to the vaginal vault. There are only a few publications on this technique. Success rates over 90% up to 2 years of follow-up have been reported.[61] There is a risk of ureteric injury, such that cystoscopy is advised after suture placement to detect such injury.[61] Sutures can be cut and replaced if the ureters are kinked or obstructed.

Evidence level III

A study of 20 women described suspension of the vaginal vault to the external oblique aponeurosis above the iliac crest.[62] Two meshes were attached to the anterior and posterior walls of the vagina and their lateral ends are pulled through a retroperitoneal tunnel before they were fixed. Operating time was long (180–360 minutes) and 20% of women had moderate posterior vaginal wall prolapse.

Another study described laparoscopic sacrospinous fixation.[63] An extraperitoneal approach is used to reach the cave of Retzius and then the sacrospinous ligament. The vault is fixed to the sacrospinous ligament with a permanent suture. No major operative complications were encountered in all of the 12 women examined and the recurrence rate was 8.3% at a mean follow up duration of 2.2 years.

7.6 When should colpocleisis be used?

Colpocleisis is a safe and effective procedure that can be considered for those women who do not wish to retain sexual function. **B**

Colpocleisis entails closure of the vagina, which is suitable for frail women who do not want to retain sexual function. Different techniques have been described, including vaginectomy,[64] purse-string closure of the vagina,[65] colpocleisis after performing standard anterior and posterior vaginal wall repair,[66] purse-string closure of enterocele followed by approximation of pervesical and rectovaginal fascia and high levator plication[67] and LeFort colpocleisis,[68] where a bridge of tissue is created between the anterior and posterior vaginal wall, to stop vault prolapse from protruding. No comparative work has been carried out to compare these techniques but it has been suggested that addressing all defects by performing anterior and posterior vaginal wall repair first prevents recurrence.[69] The technique has been described alone or in conjunction with hysterectomy,[67] as well as continence procedures.[70] It has a short operating time and low incidence of complications.[65,67] A study included 33 women and a second included 92 women. Success rates of 97% and above have been reported.[65,69] The procedure can also be performed under local anaesthesia, which suits frail women who may be difficult to anaesthetise, as demonstrated in a study that included 30 women having TVT sling insertion also carried out under local anaesthetic.[70]

Evidence level III

7.7 Sling procedures

Sling procedures should not be used without adequate patient counselling and special provisions for audit and research. **B**

Only one small randomised controlled trial compared posterior intravaginal slingoplasty with vaginal sacrospinous fixation.[71] The study involved 66 women and included women with uterine prolapse, a factor that has to be borne in mind when considering this evidence in relation to post-hysterectomy vaginal vault prolapse. It showed significantly longer operating times and more blood loss with sacrospinous fixation.

Evidence level Ib

A prospective series of 75 women reported a direct recurrence rate of 6% at 2 years following infracoccygeal sacropexy.[72] Anterior vaginal wall prolapse was more common (12%) than posterior vaginal wall prolapse (8%). Symptomatic relief was reported in excess of 85% in a prospective observational study.[73] The technique has a short operating time and can be done in those considered unfit for major surgery.[74] The vaginal axis after posterior intravaginal slingoplasty was found to be close to that following abdominal sacrocolpopexy on magnetic resonance imaging.[75] Mesh erosion and infection are real risks as the technique uses a multifilament tape.[76] The other complication is rectal perforation.[72,73] The National Institute for Health and Clinical Excellence advised special arrangements for consent, audit and research when using the technique.[77]

Evidence level III

7.8 Is there a role for total mesh reconstruction?

There is insufficient evidence to judge the safety and effectiveness of total mesh reconstruction. ✓

A number of techniques are being introduced, whereby a sheet of synthetic mesh material is fixed at a number of points to act as a new pelvic floor ('total mesh').[78] Complications, including mesh erosion and infection, as well as long-term effectiveness are specific areas of concern with these new techniques. Similar techniques have recently been introduced relying on the use of needles, in a similar way to the TVT sling. There is insufficient evidence to judge the value of such techniques at present.

7.9 Vault suspension to the anterior abdominal wall

Vault suspension to the anterior abdominal wall can be a simple measure. However, there are not enough studies assessing this technique to judge its value. **B**

A number of case series described suspension of the vaginal vault to the anterior abdominal wall. The techniques included suspending the vaginal vault to anterior rectus sheath,[79] pectineal (Cooper's) ligament[80,81] and the use of a rectus sheath fascial sling, using a transverse[82] or a midline incision,[83] or an abdominovaginal approach.[84] Operative complications were minimal[80,82] bearing in mind that wound complications can occur, as with other abdominal procedures.[83] Only one retrospective series compared the technique with sacrocolpopexy and showed a higher direct recurrence rate with rectus sheath suspension.[85] Another series reported a direct failure rate of 10%.[79] Although the main concern with this approach is the unphysiological axis of the vagina,[86] posterior angulation of the vagina has been reported on vaginography.[79]

Evidence level III

8. Auditable standards

Units should monitor the standards of prevention and management of post-hysterectomy vaginal vault prolapse. It is difficult to set standards given the paucity of evidence. It is impossible, for example, to set a specified rate for the percentage of abdominal versus vaginal or laparoscopic surgery, which will also depend on the skill and experience of the surgical team. However, it is prudent to follow trends to establish patterns and ensure that complications are picked up. A web-based audit tool for stress incontinence and prolapse surgery is available from the British Society of Urogynaecology.

1 Rate of culdoplasty at the time of vaginal or abdominal hysterectomy and sacrospinous fixation at the time of vaginal hysterectomy.
2 Time interval between abdominal or vaginal hysterectomy and vault prolapse.
3 Patient information, QoL assessment, objective quantification of the degree of prolapse and checking for stress incontinence of urine after prolapse reduction.
4 Rate of pessary insertion, failure rate and complications following pessary insertion and compliance with timely pessary replacement.
5 Evidence of special clinical governance procedures for sling operations and total vaginal mesh.

6 Training of those performing laparoscopic procedures.
7 Addressing all vaginal wall defects.
8 Rate of complications following various surgical procedures, including direct and indirect recurrence following post-hysterectomy vault prolapse surgery, time to recurrence and the development of stress incontinence of urine following surgery for post-hysterectomy vaginal vault prolapse.

9. Future research

The prevention and management of post-hysterectomy vaginal vault prolapse requires large robust studies that include disease-specific QoL assessment as well as evaluation of objective and subjective outcomes, using standardised tools. Randomised controlled trials are needed to assess various approaches, including newly introduced surgical techniques.

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APPENDIX

Clinical guidelines are: 'systematically developed statements which assist clinicians and patients in making decisions about appropriate treatment for specific conditions'. Each guideline is systematically developed using a standardised methodology. Exact details of this process can be found in Clinical Governance Advice No. 1: *Guidance for the Development of RCOG Green-top Guidelines* (available on the RCOG website at www.rcog.org.uk/clingov1). These recommendations are not intended to dictate an exclusive course of management or treatment. They must be evaluated with reference to individual patient needs, resources and limitations unique to the institution and variations in local populations. It is hoped that this process of local ownership will help to incorporate these guidelines into routine practice. Attention is drawn to areas of clinical uncertainty where further research may be indicated.

The evidence used in this guideline was graded using the scheme below and the recommendations formulated in a similar fashion with a standardised grading scheme.

Classification of evidence levels

Ia	Evidence obtained from meta-analysis of randomised controlled trials.
Ib	Evidence obtained from at least one randomised controlled trial.
IIa	Evidence obtained from at least one well-designed controlled study without randomisation.
IIb	Evidence obtained from at least one other type of well-designed quasi-experimental study.
III	Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.
IV	Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities.

Grades of recommendations

A	Requires at least one randomised controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation. (Evidence levels Ia, Ib)
B	Requires the availability of well controlled clinical studies but no randomised clinical trials on the topic of recommendations. (Evidence levels IIa, IIb, III)
C	Requires evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities. Indicates an absence of directly applicable clinical studies of good quality. (Evidence level IV)

Good practice point

✓	Recommended best practice based on the clinical experience of the guideline development group.

The Guidelines review process will commence in October 2010
unless otherwise indicated