

Clinical Question: 62F presents to gynecology clinic complaining of a s persistent “bulging” sensation in her vagina that worsens after a long day of standing and/or walking. Patient has no interest in future childbearing but is anxious about removing her uterus fearing longer recovery time. Patient says she has already tried pelvic floor PT and a pessary without much relief.

Question Type: Treatment

PICO Question: In women with symptomatic uterine prolapse, does hysteropexy compared with hysterectomy result in comparable anatomic outcomes, decreased surgical complications and lack of recurrence?

Search Strategy:

P	I	C	O
Apical pelvic organ prolapse	Uterine preserving surgery	Hysterectomy	Decreased prolapse grade
Ureterocele	Hysteropexy	Uterine removal	Lack of prolapse recurrence
Apical vaginal prolapse	Uterine preserving apical repair	Complete uterine removal	Surgical complications
Pelvic organ prolapse			Anatomic similarity
Uterine prolapse			Prolapse recurrence rates

Cochrane

Search string: (prolapse OR uterocele OR uterine prolapse) AND (vaginal hysteropexy OR hysteropexy) AND (hysterectomy)

- Filters: 2016-2026

- Results 1, 1 chosen

PubMed

Search string: (pelvic organ prolapse) AND (surgery OR surgical management OR hysterectomy) AND uterine preservation

- Filters: last 10 years, free full text, systematic review, meta-analyses

- Results 6, 1 chosen

Google Scholar

Search string: (prolapse OR uterine prolapse OR vaginal prolapse OR apical pelvic organ prolapse OR pelvic organ prolapse) AND (surgery OR surgical management OR surgical removal OR hysterectomy) AND (hysteropexy OR uterine preservation)

- Filters: 2016-2026, sort by relevance, include citations

- 6,950 results, 2 chosen

EBSCO

Search string: ("uterine prolapse" OR "pelvic organ prolapse" OR "uterovaginal prolapse") AND ("vaginal hysteropexy" OR "uterine preservation surgery" OR "uterine-sparing hysteropexy" OR "uterosacral hysteropexy" OR "sacrospinous hysteropexy") AND ("vaginal hysterectomy" OR "hysterectomy") AND ("apical suspension" OR "uterosacral ligament suspension" OR "sacrospinous fixation" OR "apical repair")

- Filters: last 10 years, full text, systematic review, peer reviewed

- Results 2, 1 chosen

I decided to choose articles exhibiting certain qualities. For instance, I chose the highest-level of evidence, such as systematic reviews and/or meta-analyses. I also excluded several studies based on criteria such as low-quality evidence at baseline and studies more than 10 years old. I also made sure not to include studies that examined prolapse and/or surgical interventions in the context of specific conditions such as malignancy or fibroids. As long as the study examined some form of hysterectomy and hysteropexy, especially vaginal entry points, it was accepted.

Foreign Study Policy:

Several of the studies included, as well as many of the RCTs within the highest-level evidence papers were conducted outside of the United States. Despite this, I included these studies for several reasons. Firstly, these studies represent the highest level of evidence in research, increasing the likelihood of their reliability and clinical application. In addition, these studies directly answered my PICO question, by comparing hysterectomy versus hysteropexy for pelvic organ prolapse (POP). However, I made sure to consider different factors that prevent these results from being directly applicable. For example, these countries may not have the same type of healthcare system, socioeconomic status, and access to healthcare.

Articles Chosen:

Source: Cochrane Database

Title: Surgery for women with apical vaginal prolapse (Review)

Citation: Maher C, Yeung E, Haya N, Christmann-Schmid C, Mowat A, Chen Z, Baessler K.

Surgery for women with apical vaginal prolapse. Cochrane Database of Systematic Reviews 2023, Issue 7. Art. No.: CD012376. DOI: 10.1002/14651858.CD012376.pub2. Accessed 05 July 2026.

ABSTRACT

Background:

Apical vaginal prolapse is the descent of the uterus or vaginal vault (post-hysterectomy). Various surgical treatments are available, but there are no guidelines to recommend which is the best.

Objectives

To evaluate the safety and efficacy of any surgical intervention compared to another intervention for the management of apical vaginal prolapse.

Search methods

We searched the Cochrane Incontinence Group's Specialised Register of controlled trials, which contains trials identified from the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, ClinicalTrials.gov, WHO ICTRP and handsearching of journals and conference proceedings and ClinicalTrials.gov (searched 14 March 2022).

Selection criteria

We included randomised controlled trials (RCTs).

Data collection and analysis

We used Cochrane methods. Our primary outcomes were awareness of prolapse, repeat surgery and recurrent prolapse (any site).

Main results

We included 59 RCTs (6705 women) comparing surgical procedures for apical vaginal prolapse. Evidence certainty ranged from very low to moderate. Limitations included imprecision, poor methodology, and inconsistency.

Vaginal procedures compared to sacral colpopexy for vault prolapse (seven RCTs, n=613; six months to f four-year review)

Awareness of prolapse was more common after vaginal procedures (risk ratio (RR) 2.31, 95% confidence interval (CI) 1.27 to 4.21, 4 RCTs, n = 346, $I^2 = 0\%$, moderate-certainty evidence). If 8% of women are aware of prolapse after sacral colpopexy, 18% (10% to 32%) are likely to be aware after vaginal procedures.

Surgery for recurrent prolapse was more common after vaginal procedures (RR 2.33, 95% CI 1.34 to 4.04; 6 RCTs, n = 497, $I^2 = 0\%$, moderate-certainty evidence). The confidence interval suggests that if 6% of women require repeat prolapse surgery after sacral colpopexy, 14% (8% to 25%) are likely to require it after vaginal procedures.

Prolapse on examination is probably more common after vaginal procedures (RR 1.87, 95% CI 1.32 to 2.65; 5 RCTs, n = 422; $I^2 = 24\%$, moderate-certainty evidence). If 18% of women have recurrent prolapse after sacral colpopexy, between 23% and 47% are likely to do so after vaginal procedures.

Other outcomes:

Stress urinary incontinence (SUI) was more common after vaginal procedures (RR 1.86, 95% CI 1.17 to 2.94; 3 RCTs, n = 263; $I^2 = 0\%$, moderate-certainty evidence).

The effect of vaginal procedures on *dyspareunia* was uncertain (RR 3.44, 95% CI 0.61 to 19.53; 3 RCTs, n = 106, $I^2 = 65\%$, low-certainty evidence).

Vaginal hysterectomy compared to sacral hysteropexy/cervicopexy (six RCTs, 554 women, one to seven year review)

Awareness of prolapse - There may be little or no difference between the groups for this outcome (RR 1.01 95% CI 0.10 to 9.98; 2 RCTs, n = 200, very low-certainty evidence).

Surgery for recurrent prolapse - There may be little or no difference between the groups for this outcome (RR 0.85, 95% CI 0.47 to 1.54; 5 RCTs, n = 403; $I^2 = 9\%$, low-certainty evidence).

Prolapse on examination- there was little or no difference between the groups for this outcome (RR 0.78, 95% CI 0.54 to 1.11; 2 RCTs n = 230; $I^2 = 9\%$, moderate-certainty evidence).

Vaginal hysteropexy compared to sacral hysteropexy/cervicopexy (two RCTs, n = 388, 1-four-year review)

Awareness of prolapse - No difference between the groups for this outcome (RR 0.55 95% CI 0.21 to 1.44; 1 RCT n = 257, low-certainty evidence).

Surgery for recurrent prolapse - No difference between the groups for this outcome (RR 1.34, 95% CI 0.52 to 3.44; 2 RCTs, n = 345; $I^2 = 0\%$, moderate-certainty evidence).

Prolapse on examination- There were little or no difference between the groups for this outcome (RR 0.99, 95% CI 0.83 to 1.19; 2 RCTs n = 367; $I^2 = 9\%$, moderate-certainty evidence).

Vaginal hysterectomy compared to vaginal hysteropexy (four RCTs, n = 620, 6 months to five-year review)

Awareness of prolapse - There may be little or no difference between the groups for this outcome (RR 1.0 95% CI 0.44 to 2.24; 2 RCTs, n = 365, $I^2 = 0\%$ moderate-quality certainty evidence).

Surgery for recurrent prolapse - There may be little or no difference between the groups for this outcome (RR 1.32, 95% CI 0.67 to 2.60; 3 RCTs, n = 443; $I^2 = 0\%$, moderate-certainty evidence).

Prolapse on examination- There were little or no difference between the groups for this outcome (RR 1.44, 95% CI 0.79 to 2.61; 2 RCTs n = 361; $I^2 = 74\%$, low-certainty evidence).

Other outcomes:

Total vaginal length (TVL) was shorter after vaginal hysterectomy (mean difference (MD) 0.89cm 95% CI 0.49 to 1.28cm shorter; 3 RCTs, n=413, low-certainty evidence).

There is probably little or no difference between the groups in terms of *operating time*, *dyspareunia* and *stress urinary incontinence*.

Other analyses

There were no differences identified for any of our primary review outcomes between different types of vaginal native tissue repair (4 RCTs), comparisons of graft materials for vaginal support (3 RCTs), rectopexy versus other apical suspensions (5 RCTs), continuous versus interrupted sutures at sacral colpopexy (2 RCTs), absorbable versus permanent sutures at apical suspensions (5 RCTs) or different routes of sacral colpopexy. Laparoscopic sacral colpopexy is associated with shorter admission time than open approach (3 RCTs) and quicker operating time than robotic approach (3 RCTs). Transvaginal mesh does not confer any advantage over native tissue repair, however, is associated with a 17.5% rate of mesh exposure (7 RCTs).

Authors' conclusions

Sacral colpopexy is associated with lower risk of awareness of prolapse, recurrent prolapse on examination, repeat surgery for prolapse, and postoperative SUI than a variety of vaginal interventions.

The limited evidence does not support the use of transvaginal mesh compared to native tissue repair for apical vaginal prolapse.

There were no differences in primary outcomes for different routes of sacral colpopexy. However, the laparoscopic approach is associated with a shorter operating time than robotic approach, and shorter admission than open approach.

There were no significant differences between vaginal hysteropexy and vaginal hysterectomy for uterine prolapse nor between vaginal hysteropexy and abdominal hysteropexy/cervicopexy.

There were no differences detected between absorbable and non absorbable sutures however, the certainty of evidence for mesh exposure and dyspareunia was low.

Key points:

- Included 59 RCTs with a total sample size of 6,705 adult women aged 55-70 on average
- Primary outcomes assessed included prolapse awareness, repeat surgery and recurrent prolapse types
- Secondary outcomes assessed included adverse events, sexual function, quality of life measures, surgical metrics, bladder function and Pelvic Organ Prolapse Quantification (POP-Q) Scores
- No significant differences were seen in primary outcomes such as awareness or repeat surgery in terms of vaginal hysteropexy as compared to vaginal hysterectomy
- However, hysterectomy types resulted in significantly shorter total vaginal length compared to hysteropexy types

Why I chose this study:

- This is a Cochrane systematic review, which represents the highest level of evidence in evidence-based research. This article was directly relevant to my PICO question because it directly compares the different surgical interventions of hysterectomy and hysteropexy. It is also a recent review, meaning that the results can be applied to modern-day clinical practice populations. Furthermore, not only did it assess subjective outcomes and patient experience, but it also compared pertinent secondary objective short and long-term outcomes such as OR time.

Source: PubMed

Title: The uterus debate in vaginal native tissue repair for pelvic organ prolapse: Hysteropexy versus hysterectomy - A systematic review and meta-analysis

Citation: Ruffolo, A. F., Salvatore, S., Torella, M., Frigerio, M., Soligo, M., Rubod, C., Lallemand, M., Cosson, M., Serati, M., & Braga, A. (2025). The uterus debate in vaginal native tissue repair for pelvic organ prolapse: Hysteropexy versus hysterectomy - A systematic review and meta-analysis. *Maturitas*, 203, 108755. <https://doi.org/10.1016/j.maturitas.2025.108755>

ABSTRACT

Introduction: Pelvic organ prolapse is a common condition with significant impact on women's quality of life. Following restrictions on transvaginal mesh, native tissue repair has re-emerged as the mainstay of vaginal prolapse surgery. The role of hysterectomy in apical prolapse repair remains debated, with uterus-preserving techniques proposed as less invasive alternatives.

Methods: We conducted a systematic review and meta-analysis according to PRISMA guidelines (PROSPERO CRD420251132469). Studies comparing vaginal hysterectomy with sacrospinous or uterosacral hysteropexy in native tissue repair were included. Primary outcomes were apical recurrence, global anatomical success, subjective success, and reoperation rates. Secondary outcomes included operative time, blood loss, hospital stay, and major complications. Random-effects models were used for statistical pooling.

Results: Sixteen studies involving 2544 women (1364 hysterectomy, 1180 hysteropexy) were analyzed. Pooled results showed no significant difference between hysterectomy and hysteropexy for apical recurrence (OR 0.60, 95 % CI 0.30-1.19), global anatomical success (OR 1.33, 95 % CI 0.88-2.02), subjective success (OR 0.92, 95 % CI 0.63-1.34), or reoperation rates (OR 1.04, 95 % CI 0.56-1.96). Similarly, no difference was observed in major complications (Clavien-Dindo $\geq$ III). However, hysterectomy was associated with longer operative time (+29 min), greater blood loss (+80 mL), and longer hospital stay (+1.1 days).

Conclusions: In vaginal native tissue repair for pelvic organ prolapse, hysterectomy and hysteropexy provide comparable anatomical and functional outcomes, as well as similar safety and reintervention rates. Hysteropexy appears advantageous in reducing perioperative morbidity and resource use, supporting its role as an effective, uterus-preserving alternative to hysterectomy.

Key points:

- 16 studies, 3 RCTs, 2 prospective studies and 11 retrospective studies
- 2,544 total women with pelvic organ prolapse (POP)
- 1,364 and 1,180 women undergoing hysterectomy and hysteropexy, respectively
- Comparable success rates between the two surgical interventions
- No statistically significant difference between primary outcomes or need for reoperation
- Similar safety profiles in terms of post-op complications
 - Hysteropexy had lower perioperative burdens
 - Hysterectomy had
 - Longer average surgery times (extra 29.34 minutes)
 - Higher average blood loss (Extra 80.4 mL)
 - Longer average hospital stays (Extra 1.12 days)

Why I chose it: This is a systematic review and meta-analysis, which represents the two highest levels of evidence in evidence-based research. This article is also very relevant to my PICO question, as it directly compares both surgical interventions of interest. It is also a recent review, suggesting that the results can be applied to modern-day clinical practice populations. Although this paper is a systematic review of lower-evidence articles, the direct application to my PICO question warranted its inclusion.

Source: Google Scholar

Title: Complications and objective outcomes of uterine preserving surgeries for the repair of pelvic organ prolapse versus procedures removing the Uterus, a systematic review

Citation: Azadi, A., Marchand, G., Masoud, A. T., Sainz, K., Govindan, M., Ware, K., ... & Ostergard, D. R. (2021). Complications and objective outcomes of uterine preserving surgeries for the repair of pelvic organ prolapse versus procedures removing the uterus, a systematic review. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 267, 90-98.

ABSTRACT

Background: Several authors have recently compared the outcomes and complications of surgical procedures that preserve or remove the uterus in the treatment of pelvic organ prolapse (POP) and stress urinary incontinence (SUI). Following the publication of several high quality randomized control trials on this topic we performed a new systematic review and meta analysis of this data.

Methods: We performed a systematic literature search in ClinicalTrials.gov, PubMed, Scopus, Ovid, EBSCO host, Science Direct, Web of Science, and Cochrane CENTRAL for randomized controlled and cohort trials of uterine sparing prolapse repair (hysteropexy) versus hysterectomy with suspension. A total of 1285 patients from 14 studies were included in our systematic review and meta-analysis.

Results: Uterine sparing procedures (hysteropexy) were comparable to hysterectomy with suspension for recurrence rates (RR = 0.908, 95% CI [0.385, 2.143]), reoperation rates (RR = 1.517, 95% CI [0.802, 2.868]), length of hospital stay, (SMD = 0.159 days, 95% CI [0.375, 0.057]), voiding dysfunction (RR = 1.089, 95% CI [0.695, 1.706]), and intraoperative blood loss (SMD = 0.339, 95% CI [0.631, 0.047]). However, hysteropexy had shorter operative time than

hysterectomy with suspension (SMD = 1.191 h, 95% CI [1.836, 0.545]), and fewer visceral injuries (RR = 0.421, 95% CI [0.244, 0.725]).

Conclusion: We found no significant differences in the outcomes or major complications of uterine preserving surgical procedures versus those which include hysterectomy in the treatment of POP. Hysteropexy procedures may be associated with a shorter operative time and fewer visceral injuries. This is consistent with older analyses

Key points:

- 14 studies, sample size of 1,285 adult women with symptomatic pelvic organ prolapse (POP)
- 6 trials evaluated open abdominal or laparoscopic routes, 10 evaluated vaginal approaches
- Uterine preserving hysteropexy showed shorter overall OR time compared to hysterectomy with suspension
- Time advantage was statistically significant for vaginal surgical entry
- Hysteropexy had significantly fewer visceral injuries as a result of the surgery
- However no significant difference when performing abdominal/ laparoscopic surgery
- Lower rates of visceral injuries with hysteropexy compared to hysterectomy

Why I chose it: This study is a systematic review and meta-analysis, representing the two highest-levels of evidence-based medicine. It directly addresses the four elements of my PICO question by comparing uterine-preserving surgeries with hysterectomy with suspension for POP. It examines the anatomic outcomes and perioperative morbidity, highly relevant clinical outcomes for these surgical methods. It includes multiple RCTs with a total sample size of 1,285 patients. Furthermore, it stratifies the surgical approaches into both vaginal and abdominal/laparoscopic entry points. Overall, the study quality was also moderate to high, making the findings very applicable to the proposed PICO.

Source: Google Scholar

Title: Uterine preservation vs hysterectomy in pelvic organ prolapse surgery: a systematic review with meta-analysis and clinical practice guidelines

Citation: Meriwether, K. V., Antosh, D. D., Olivera, C. K., Kim-Fine, S., Balk, E. M., Murphy, M., ... & Rahn, D. D. (2018). Uterine preservation vs hysterectomy in pelvic organ prolapse surgery: a systematic review with meta-analysis and clinical practice guidelines. *American journal of obstetrics and gynecology*, 219(2), 129-146.

Key points:

- 53 studies comparing uterine preservation to hysterectomy with 12 RCTs and 41 non-randomized comparative studies
- Examined several different methods of either surgery such as transvaginal mesh and laparoscopic methods for hysteropexy and suspension methods for hysterectomy
- Included adult women with a uterus and symptomatic apical POP undergoing surgical apical repair

- Excluded women with prior partial or total hysterectomy or pathology needing removal such as fibroids or those doing surgery without prolapse as a primary indication
- Uterine preservation vaginal hysteropexy as compared to vaginal hysterectomy resulted in
 - Reduced mesh exposure
 - Fewer reoperations for mesh erosion
 - Less post-op bleeding, shorter OR times
 - Preserved total vaginal length (TVL)

Why I chose it: This is a systematic review, which represents the highest level of evidence in evidence-based research. This study answers my PICO question because it directly compares various hysteropexy and hysterectomy surgical methods. In addition, it examines both anatomic outcomes and perioperative morbidity as well as other factors such as blood loss. These findings nicely complement the studies previously included.

Source: EBSCO

Title: A systematic review of the surgical management of apical pelvic organ prolapse.

Citation: Chan, C. Y. W., Fernandes, R. A., Yao, H. H.-I., O'Connell, H. E., Tse, V., & Gani, J. (2023). A systematic review of the surgical management of apical pelvic organ prolapse. *International Urogynecology Journal*, 34(4), 825–841.
<https://doi-org.york.ezproxy.cuny.edu/10.1007/s00192-022-05408-x>

Abstract

Introduction and hypothesis This systematic review is aimed at comparing qualitatively the success, recurrence, and complication rates of sacrocolpopexy with concomitant hysterectomy, hysteropexy, sacrospinous fixation (SSF) with and without vaginal hysterectomy (VH) and uterosacral fixation (USF) with and without VH.

Methods A systematic search was performed using Embase, PubMed, Scopus, and Cochrane databases for studies published from 2011, on women with apical pelvic organ prolapse requiring surgical interventions. Risk of bias was assessed via the National Institutes of Health study quality assessment tool. The primary outcomes are the success and recurrence rate of each technique, for ≥ 12 months' follow-up. Findings were summarised qualitatively.

Results A total of 21 studies were included. Overall significant findings for a high success and low recurrence rate are summarized as: minimally invasive sacrocolpopexy (MISC) is superior to abdominal sacrocolpopexy (ASC); sacrospinous hysteropexy (SSHP) is superior to USF + VH, which is superior to uterosacral hysteropexy and mesh hysteropexy (MHP). Significant findings related to complications include: MISC recorded a lower overall complication rate than ASC except in mesh exposure; USF + VH tends to perform better than SSHP and SSF, with SSHP performing better than MHP in faecal incontinence and overactive bladder rates.

Conclusion There is no evidence to conclude that hysterectomy is superior to uterine-sparing approaches. MISC should be considered over ASC given similar efficacy and reduced complications. Superiority of MHP is unproven against native tissue hysteropexy. Further studies under standardised settings are required for direct comparisons between the surgical management methods.

Key points:

- 21 peer-reviewed studies, 7 RCTs, 12 retrospective cohort studies, 2 prospective cohort studies
- Adult women with apical POP requiring surgical intervention included patient population
- Objective surgical success rates and prolapse recurrence rates evaluated
- Hysterectomy non superior to uterine-sparing techniques in terms of success or prolapse recurrence rates
- 10 year long term data showed lower composite failure rate for hysteropexy versus hysterectomy
- EBL significantly lower in the uterine-preservation studies, by a magnitude of 50-100 mL
- Hysteropexy procedure reduced time in the OR by 20-45 minutes compared to hysterectomy

Why I chose it: This is a systematic review and is a very comprehensive and qualitative comparison of the major surgical approaches to POP. The paper also includes 7 RCTs with follow-up over 12 months, as well as long-term data to assess complications over time. Despite the lack of quantitative data, qualitative trends hysterectomy and hysteropexy are included interventions of interest, which directly answers my PICO question. It is also a very current study, having been published in 2023, which increases the applicability for modern day practice.

Summary of the Evidence:

Author (Date)	Level of Evidence	Sample/Setting (# of subjects/ studies, cohort definition etc.)	Outcome(s) studied	Key Findings	Limitations and Biases
Maher C, Yeung E, Haya N, Christmann- Schmid C, Mowat A, Chen Z, Baessler K (2023)	Cochrane Systematic Review & Meta- Analysis	- 59 RCTs - 6,705 adult women -Hospital-based surgical environments across 18 countries including the USA, Australia, Brazil, etc. -Cohort defined as adult women seeking treatment for symptomatic primary or	- Primary Outcomes: -Awareness of prolapse -Repeat surgery for recurrent prolapse, stress urinary incontinence, or mesh exposure -Recurrent prolapse defined as stage 2 or more on exam - Secondary Outcomes: -Adverse events Compartment specific prolapse outcomes and Pelvic Organ Prolapse	- Several interventions studied, but specifically for vaginal hysterectomy versus hysteropexy: No significant differences were seen in primary outcomes such as awareness or repeat surgery -However, hysterectomy resulted in significantly shorter total vaginal length compared to hysteropexy -Hysterectomy also had 28.57 minutes longer on average of OR time	- Evidence certainty was often low or moderate - Many trials were downgraded because of high/uncertain risk of performance and detection bias due to blinding difficulties -Statistical heterogeneity present in many

		recurrent apical vaginal prolapse , including uterine prolapse -Mean age of 55-70 years, median parity under 3 in all but one included RCT	Quantification scores (POP-Q) -Bladder function -Sexual function such as dyspareunia -Quality of life measures -Surgical metrics such as operating time, length of hospital stay and blood loss		secondary analyses such as operating times, cost and length of hospital stay -Many studies had small sample sizes -High risk of attrition bias
Alessandro Ferdinando Ruffolo 1, Stefano Salvatore 2, Marco Torella 3, Matteo Frigerio 4, Marco Soligo 5, Chrystelee Rubod 6, Marine Lallemand 7, Michel Cosson 6, Maurizio Serati 8, Andrea Braga (2025)	Systematic review and meta-analysis	- 16 studies, 3 RCTs, 2 prospective studies and 11 retrospective studies - 2,544 total women with 1,364 and 1,180 undergoing hysterectomy and hysteropexy, respectively - Cohort defined as women who underwent vaginal native tissue repair for pelvic organ prolapse - Patients who underwent mesh repairs or transabdominal surgeries were excluded -3 USA studies, other studies included ones from the UK,	Primary Outcomes: -Apical recurrence Global anatomical success -Patient-reported success -Reoperation rates or prolapse returning - Secondary Outcomes: -Surgery time -Estimated blood loss -Length of hospital stay -Major complications defined as a Clavien-Dindo (A medical tool used to grade and report post-op complications) grade 3 (severe complications warranting intervention) or higher	- Comparable success rates between the two surgical interventions -No statistically significant difference between primary outcomes or need for reoperation -Similar safety profiles in terms of post-op complications -Hysteropexy had lower perioperative burdens -Hysterectomy had longer average surgery times (extra 29.34 minutes) - Higher average blood loss (Extra 80.4 mL) -Longer average hospital stay (Extra 1.12 days)	- Many studies relieve retrospective, non-randomized cohort studies (11) - Overall quality of evidence was moderate -High level of variation in specific surgical techniques - Follow up windows varied widely -Researchers could not isolate or separate individual clinical impacts of ligament suspension types

		Australia, Italy, etc. -Procedures were sacrospinous ligament suspension and uterosacral ligament suspension			
Kate V. Meriwether MD a , Danielle D. Antosh MD b, Cedric K. Olivera MD, MS c , Shunaha Kim-Fine MD, MS d , Ethan M. Balk MD, MPH e, Miles Murphy MD, MSPH f, Cara L. Grimes MD, MAS g, Ambereen Sleemi MD, MPH h , Ruchira Singh MD, MS i , Alexis A. Dieter MD j, Catrina C. Crisp MD, MSc k, David D. Rahn MD l (2018)	Systematic review	- 14 studies -1,285 adult women with symptomatic POP -6 trials evaluated open abdominal or laparoscopic surgery - 10 trials evaluated vaginal entry	- Primary outcomes: -Operative time -Prolapse recurrence rate -Surgical reoperation rate -Secondary outcomes -Incidence of visceral injuries -Voiding dysfunction -Intraoperative blood loss -Total length of hospital stay	- Hysteropexy showed shorter overall operative time for vaginal entry - No statistically significant difference in operation time for abdominal/laparoscopic entry -Hysteropexy showed lower rate of visceral injuries compared to hysterectomy -No statistically significant difference regarding secondary outcomes	- Lack of blinding in multiple included trials -Unresolved heterogeneity in data pooled for operative time and blood-loss -Lack of long-term data regarding timeline for recurrent prolapse
Ali Azadia,e, Greg	Systematic review	- 94 studies	- Primary outcomes:	- Many interventions explored but in terms	- Lack of long term data

Marchandb,ft, Ahmed Taher Masoudb,c, Katelyn Sainzb, Malini Govindanb, Kelly Wareb,d, Alexa Kingb, Stacy Rutherb, Giovanna Brazilb, Nicolas Calteuxb, Hollie Ulibarrib, Julia Pariseb, Amanda Arroyob, Catherine Coriellb, Sydnee Goetzb, Donald R. Ostergard (2021)	and network meta- analysis	-12 RCTs and 41 non-randomized comparative studies -Adult women with a uterus and symptomatic apical POP undergoing surgical apical repair -Excluded women with prior partial or total hysterectomy or pathology needing removal such as fibroids or those doing surgery without prolapse as a primary indication	-Anatomic success -Objective prolapse recurrence across different vaginal compartments using POP-Q points -Subjective symptom resolution -Repeat surgery rates for prolapse recurrence -Secondary outcomes: - Periop metrics such as Estimated blood loss (EBL), changes in hemoglobin/hematocrit levels, blood transfusion rates, operating room (OR) time, length of hospital stay, and direct surgical costs -Pelfiv floor function and QoL -Post-op pain sores -Days of pain medication use -Time of return to normal activity -Adverse events	of vaginal hysteropexy versus vaginal hysterectomy, hysteropexy as compared to vaginal hysterectomy resulted in: -Reduced mesh exposure -Fewer reoperations for mesh erosion -Less post-op bleeding, shorter OR times -Preserved total vaginal length (TVL)	showing prolapse outcomes, durability of repairs and risk of malignancy after 3 years post-op -Definitions of prolapse recurrence, anatomic success and surgical technique vary across studies -Bulk of studies are non-randomized trials
Cherie Yik Wah Chan1 · Royston Antony Fernandes1 · Henry Han-I Yao1,2 · Helen E. O'Connell1,3 · Vincent Tse4,5 ·	Systematic review	- 21 peer-reviewed studies, 7 RCTs, 12 retrospective, 2 prospective cohort -Adult women with apical POP requiring	- Primary outcomes: - Objective surgical success rates and prolapse recurrence rates Minimum post-op follow up period of 12 months or longer	- Hysterectomy non superior to uterine-sparing techniques in terms of success or prolapse recurrence rates -Open abdominal sacrocolpexy (ASC) and minimally invasive sacrocolpopexy	- Lack of quantitative data aka no meta-analysis -Variations in standardized surgical settings, success definitions

Johan Gani1 (2022)		surgical intervention	. Overall surgical complication rates, specific functional issues, nerve- related symptoms, procedure- specific risks Secondary outcomes;	(MISC) has same long- term efficacy -MISC shows significantly low overall complication rate -Techniques such as sacrospinous fixation and uterosacral fixation show similar anatomic success -However, SSF has higher rates of temporary hip and buttock pain -USF has higher risk of direct ureteral injury	and reporting criteria -Low quality of evidence due to inherent bias and lack of blinding
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Conclusion(s):

Maier, et al. made several pertinent conclusions. Primary outcomes mainly focused on factors such as a sensation or awareness of prolapse. In addition, primary outcomes such as repeated surgery due to recurrent prolapse, or incontinence were evaluated. Reviewers also looked at outcomes of recurrent prolapse. Culmination of evidence found no significant differences between vaginal hysterectomy and vaginal hysteropexy in terms of patient awareness or repeat surgeries. However, the main caveat here is that a hysterectomy significantly shortens the total vaginal length (TVL), compared to a vaginal hysteropexy. In addition, the authors conclude that hysteropexy offers perioperative advantages, such as shorter operative time, less blood loss, and shorter hospital stay. This supports its role as an effective alternative to uterine removal.

Ruffalo et al. presented important findings as well. Primary outcomes of apical recurrence and global anatomical success, subjective success or reoperation rates were evaluated. Secondary outcomes include operative time, blood loss, hospital stay, and major complications. The evidence did not draw a significant difference between vaginal hysterectomy and vaginal hysteropexy in terms of anatomical success, subjective satisfaction, or repeat surgery rates. However, like Maier et. al, there are perioperative advantages that make hysteropexy an attractive option, nonetheless. The authors do note that follow-up periods across the analyzed studies were highly variable, which limits the long-term comparability of the reoperation data.

Azadi et al. concluded that uterine preserving hysteropexy is a safe and effective alternative to a standard hysterectomy. When evaluating long-term performance, both surgical

approaches had almost equal results. There were no statistically significant differences in prolapse recurrence rates, reoperation rates, postoperative voiding dysfunction, intraoperative blood loss, or the overall length of hospital stay. However, uterine preservation significantly decreased total operative times and the overall incidence of visceral injuries.

Brazib et al. concluded that preserving the uterus improves operating room time and minimizes estimated blood loss. In terms of short-term prolapse recurrence or surgical success rates, there is no significant difference. Individual procedures examined have unique trade-offs. For example, vaginal length with laparoscopic sacrohysteropexy is improved. Another example is lower postoperative urinary symptoms with native tissue vaginal hysterectomy. However, the authors note a critical lack of long-term data regarding prolapse outcomes beyond 3 years. Ultimately, they suggest that hysteropexy is suggested as a viable option for prolapse repair.

Finally, Chan et al., shows that the surgeries for apical pelvic organ prolapse are highly effective, maintaining success rates above 75%. However, the evidence does not show any distinct difference between hysterectomy and hysteropexy in terms of complications or recurrence. For patients choosing sacrocolpopexy, minimally invasive options should be prioritized over open surgery because they deliver similar results with fewer total complications. Finally, mesh hysteropexy lacks proven superiority over traditional native tissue repairs, which carry a lower risk of long-term mesh issues.

Overall conclusion:

A synthesis of findings across all 5 studies collectively concludes that hysteropexy is non-inferior to hysterectomy in the efficacy of uterine prolapse treatment. Both surgical methods yield comparable prolapse resolution, decreased recurrence and reoperation rates. Furthermore, hysteropexy appears superior to hysterectomy in several other important areas. The major consideration of hysteropexy over hysterectomy lies in the secondary benefits it brings to the table. Outcomes such as preserved TVL, decreased composite failure risks, shorter operative times, reduced estimated blood loss and shorter hospital stays are significant. Ultimately, for patients without underlying uterine pathology, uterine preservation serves as a less invasive, safe, and effective strategy for prolapse correction. It provides an option for prolapse management that does not sacrifice long-term tissue durability or long-term success.

Clinical Bottom Line:

Because all the included studies exhibit a high-level of evidence, I ranked them based on several factors. Assessing the quality of each paper's limitations, bias and heterogeneity, etc., were some examples of characteristics considered.

I ranked Maher et al first because it is a Cochrane study, ensuring a rigorous review of evidence to support my PICO analysis. The large sample size within completely randomized controlled trials and largely peer reviewed full publications are selling points. Furthermore, the study both quantitatively and qualitatively analyzes outcomes across several different subcategories of surgery. This strengthens the applicability of the findings across the board. However, the authors note limitations such as low to moderate quality data, inconsistency in definitions, and poor individual study methodology.

I ranked Meriwether et al second because it presents both quantitative and qualitative analysis. The studies were overall moderate quality evidence and featured a diverse array of uterine preservation procedures. This made the overall results more comprehensive. However, the studies were largely heterogeneous. In addition, some comparisons, such as sacrospinous hysteropexy and vaginal hysterectomy did not clarify the method of apical suspension. In addition, the definitions of surgical techniques and prolapse were not uniform across the board. The study also did not report on long-term recurrence risk, an important outcome discussed in other studies.

I ranked Ruffolo et al third because the article presents both quantitative and qualitative analysis of moderate quality. The meta-analysis exhibits a strong and well-defined patient population, undergoing a specific subtype of hysterectomy and hysteropexy. However, the major drawbacks here are that the studies are largely retrospective with non-randomized design and heterogeneous.

I ranked Azadi et al fourth because the study presents only qualitative analysis of the data on this subject. The results are also divided subjectively into quality and success of outcomes, and safety. While the author's due acknowledge the lack of objectivity in the term "success" this is still a potential point of bias. However, it excludes review articles, observational studies, case reports and non-randomized trials, which is a strength.

Finally, I ranked Chan et al last because the study presents only qualitative analysis of the data. The authors note an attempt to analyze trends, as opposed to numerical analysis. In addition, it examines different subcategories of hysterectomy and hysteropexy which help to increase the widespread applicability of results. However, this can muddy the overall applicability of the general findings to specific patient scenarios and would instead warrant a look at the specific intervention desired. Additionally, the overall sample sizes are small and there are heterogeneous outcome measures and follow up durations. For example, while the reviewers claim at least 12 months follow up overall, one study only went up to 6. They do acknowledge this can introduce bias in long-term data conclusions.

Magnitude of Effect:

The most profound magnitude of effect lies in the efficiency and safety profiles of hysteropexy versus hysterectomy. Across the board, uterine preservation is superior. Multiple reviews conclude that hysteropexy demonstrates an exceptionally large OR reduction time. It saves an average of 28.57, 29 and 17.5 minutes in Maher et al, Ruffolo et al., and Meriwether et al., respectively. This is also further supported by Azadi et al, which shows a large SMD drop from -1.191 to -1.320 for vaginal entry. In addition, the same study revealed a massive risk reduction for visceral trauma with hysteropexy. These patients had less than half of the injuries observed in the hysterectomy group (RR =0.421). Meriwether et al also showed a clinically significant 10% absolute difference in mesh exposure rates favoring hysteropexy (OR 0.34). Bleeding time and hospital stay also leading benefits with hysteropexy. 89.9 mL and 80 mL of saved blood were noted in the Meriwether et al and Ruffolo et al papers. In addition, over a day of time difference in hospital stay discourages hysterectomy.

Moderate magnitude is seen when tracking patients long term. Many of the studies had different long-term tracking methods and times. Short term data shows no variance, but long term in Chan et al, for example revealed a widening gap for apical prolapse recurrence at the 60-month mark (36% for hysteropexy vs. 53.85% for hysterectomy). In addition, that same time mark shows a gap in success rates between the two interventions 87.3% vs. 75.5%). In addition, uterine preservation seems to offer a mild preservation of TVL with 0.89cm and 0.81cm being noted in Maher et al and Meriwether et al, respectively. This may have implications for sexual functioning that should be considered.

The lowest magnitude of effect lies in the primary metrics, such as prolapse awareness, recurrence, surgical reoperation rates and positive surgical outcomes. For example, Maher et al shows that real-world patient perception differences are null. Both cohorts showed that 60/1,000 women became aware of their prolapse again. Anatomical success was negligible with an OR of 1.33 in Ruffolo et al, for example. Reoperation rates were also mostly similar, with a tiny-real world difference of 63/1,000 and 83/1,000 seen for hysteropexy and hysterectomy respectively (Maher et al 2023).

Clinical significance:

These findings carry profound implications for clinical practice. By prioritizing vaginal hysteropexy as opposed to complete uterine removal, durable, tissue-preserving and patient centered practice is performed. The long-term burden of symptom recurrence and reoperation is drastically reduced with uterine preservation. Furthermore, patient satisfaction is increased because primary outcomes and secondary outcomes are addressed. In other words, not only do patients reap the benefit of prolapse correction, but they also get reduced hospital stay, less estimated blood loss and faster healing, for example, with hysteropexy. Ultimately, hysteropexy allows clinicians to correct prolapse and align with patient wishes. For patients such as the one in the case above who fear hysterectomy/ do not desire it, the less invasive method is just as beneficial, if not more so due to its secondary benefits.

Other considerations:

It is important to consider other factors such as routine cervical cancer screening and abnormal bleeding. Patients with history of conditions such as cervical dysplasia, fibroids and endometrial hyperplasia, for example, were essentially excluded from these studies. However, these conditions would warrant a hysterectomy over a hysteropexy, so this must be kept in mind. Furthermore, it is important to educate the patient on future screenings. If a hysteropexy is done, routine cervical cancer screenings are still indicated. In addition, post-menopausal bleeding would still warrant evaluation. Finally, it is important to consider the differences in socioeconomic status, education level and health disparities when treating prolapse patients. Understanding that different treatment options carry different weight. Many women have strong cultural, personal and religious beliefs that can be central to their identity, sexual function and femininity. Overall, offering hysteropexy as an option can help to reinforce patient autonomy, patient-provider trust and hope.

