

Hysterectomy for benign gynaecological disease

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Abstract

Of all the treatments available for the management of abnormal uterine bleeding, hysterectomy scores highest in satisfaction rates. It should therefore not surprise that despite the advent of newer, and in some instances less invasive, interventions hysterectomy remains the most commonly performed major gynaecological operation. It is therefore imperative that all aspects of this operation are reviewed on a regular basis, as there are aspects that raise concern. For example, all evidence suggests that the vaginal route is the safest, most cost-effective approach to hysterectomy, affording rapid recovery, yet the majority of hysterectomies are still performed by the abdominal route. Newer approaches such as robotic surgery have captured the imagination of the enthusiasts, yet this approach is hugely expensive, and there are few data justifying its use over the laparoscopic or indeed the conventional approach. Quality of life should remain the principal outcome measure for hysterectomy for benign disease, and therefore the impact of the various approaches to hysterectomy should address this outcome, but often fail to do so. Complications of any new technique should be addressed, and the question that continues to elude an answer, namely why there are such widely and wildly varying rates of hysterectomy between surgeons in one hospital, between hospitals in one region, between the regions and between countries, should be the subject of rigorous and definitive research.

Keywords complications; hysterectomy; laparoscopic; menorrhagia; ovarian conservation; quality of life; robotic; vaginal

Introduction

It is estimated that about 600,000 hysterectomies are carried out in the US and 40,000 in England per year, and rates in other countries such as India are phenomenally high, rendering hysterectomy the most common major gynaecological operation performed worldwide. Forty percent of women all over the world will have a hysterectomy by the age of 64, and the indication for

the majority will be to relieve symptoms due to benign pathology, and thereby improve quality of life. Since the early twentieth century, hysterectomy has been the definitive treatment for pelvic pathology, the commonest indication being fibroid disease. The majority of hysterectomies are carried out abdominally except when utero-vaginal prolapse is the pathology at hand. Despite the advent of endometrial ablative procedures, and the introduction of the levonorgestrel intrauterine system (LN-IUS) for menorrhagia, the hysterectomy rate has not declined worldwide except in the Scandinavian countries and recently in the UK. Although hysterectomy rates highest in satisfaction scores compared with other modalities of treatment, particularly in the treatment of dysfunctional uterine bleeding, the advantages must be weighed against the risks of surgery and the potential benefits/advantages of other alternative treatments. There is no evidence to suggest that hysterectomy increases long-term mortality, except when concomitant oophorectomy is undertaken. However, few operations raise greater passions than hysterectomy and the current topics of debate and controversy include the best approach for doing the operation, the widely varying rates of hysterectomy, whether or not to conserve the ovaries at the time of hysterectomy, the impact of hysterectomy on quality of life, and whether more conservative treatments such as endometrial ablation, the LN-IUS and uterine artery embolization could be more effective and therefore replace hysterectomy in the long run. Resolutions to these controversies can only come through robust research which are currently lacking. This article will discuss some of these issues and also touch upon recent developments in the techniques of hysterectomy, including outpatient vaginal hysterectomy, single port laparoscopic hysterectomy, hysterectomy via transvaginal natural orifice transluminal endoscopic surgery (NOTES) and robotically assisted hysterectomy.

Various routes of hysterectomy: outcomes and cost-effectiveness

The three popular approaches to hysterectomy for benign diseases are abdominal hysterectomy, vaginal hysterectomy (VH) and laparoscopic hysterectomy. Laparoscopic hysterectomy has three further subdivisions: laparoscopic assisted vaginal hysterectomy (LAVH) in which a vaginal hysterectomy is assisted by laparoscopic procedures that do not include uterine artery ligation, laparoscopic subtotal hysterectomy, and total laparoscopic hysterectomy (TLH), where there is no vaginal component, and the vault is sutured laparoscopically from inside the pelvic cavity. It is now widely believed that vaginal hysterectomy should be a standard default operation for all hysterectomies. In 2010, the American Association of Gynaecologic Laparoscopists outlined a position statement stating that most hysterectomies for benign disease should be performed either vaginally or laparoscopically, and that continued efforts should be taken to facilitate these approaches. Vaginal and laparoscopic hysterectomies are associated with low surgical risks and involve shorter hospital stay. In comparison, abdominal hysterectomy requires a relatively large abdominal incision and is associated with increased incidence of wound infections, longer hospital stay and delayed return to normal activity. In a review of 10 years' experience of morbidity and mortality for hysterectomies, an

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overall complication rate of 44% for abdominal and 27.3% for vaginal hysterectomy has been reported. A Cochrane review concluded that both vaginal and laparoscopic hysterectomies were associated with fewer infections and episodes of raised temperature, shorter hospital stay, and women resumed normal activity more quickly compared to when the procedure was performed by the abdominal route. Despite this, 66% of hysterectomies are abdominal, 22% vaginal and only 12% laparoscopic. There are a number of factors responsible for this including the skill and experience of the surgeon, the size of the uterus and whether the patient has had any previous abdominal surgery. In a recent survey of US gynaecologists, respondents were asked what kind of hysterectomy they would choose for themselves or their spouse. Only 8% preferred an abdominal approach while most opted for either a vaginal or laparoscopic approach. Thus, although the gynaecologists recognized the benefits of a minimally invasive or vaginal approach, they do not, in practice, offer to their patients what they would choose for themselves. This is likely to be at least in part due to lack of technical expertise and/or confidence in performing the vaginal or laparoscopic procedure.

What should the gynaecologist choose between the vaginal (VH), total laparoscopic (TLH) or laparoscopic assisted vaginal hysterectomy (LAVH)? In a recent prospective randomised controlled trial comparing total laparoscopic to vaginal hysterectomy, it was reported that laparoscopic hysterectomy was associated with 7% haemorrhage, 2.5% ureteric injuries and 86 minutes operating time, whereas the respective figures for vaginal hysterectomy were 2.5% haemorrhage, no ureteric injuries and 46 minutes operating time. A Cochrane review found no added benefit for laparoscopic over vaginal hysterectomy.

In appropriately selected patients, evidence suggests that VH should be the preferred approach over LAVH. In a report on severe complications associated with hysterectomy, studies suggest that LAVH was associated with the most risk of severe complications both operatively and postoperatively as well as longer operating time with comparable outcomes. Clearly more good quality data are needed.

The EVALUATE hysterectomy trial with regard to cost-effectiveness, comparing abdominal, vaginal and laparoscopic methods of hysterectomy concluded that laparoscopic hysterectomy was not cost effective relative to vaginal hysterectomy. Vaginal hysterectomy requires no specific additional equipment compared with laparoscopic hysterectomy, depending on the type of disposable equipment used. Hence the cost of laparoscopic hysterectomy is significantly higher than vaginal hysterectomy.

Supracervical/subtotal hysterectomy

Although the debate on whether subtotal hysterectomy preserves sexual, bowel and bladder function when compared to total hysterectomy has been largely resolved, gynaecologists are still to be found providing inaccurate information to women and therefore limiting their choice. The evidence will therefore be briefly presented again.

Sexual satisfaction was reported with similar frequency before surgery and 1 year after surgery by women in a Danish study, irrespective of the type of hysterectomy. In a UK study, the

frequency of intercourse, orgasm, and the rating of sexual relationship with a partner measured before and after surgery were similar for both groups. Similar findings were obtained in a US study for sexual function, health related quality of life, including sexual desire, frequency and quality of orgasm, and body image, measured 2 years after surgery. A large multi-centre, double-blind trial concluded that neither procedure adversely affected bladder or bowel function.

With the preservation of the cervix, the patient may experience a very small amount of mid-cycle blood loss. This can be significantly reduced or prevented altogether by coring out the endocervix using diathermy.

When comparing laparoscopic total versus subtotal hysterectomy, the former is associated with more short-term complications whereas the latter is associated with more long-term complications. The short term complications are blood loss, urinary tract infection, vaginal vault haematoma, ureteric injuries and febrile illness. The long-term complications are vaginal bleeding, abdominal wall problems, dyspareunia, post-operative pelvic pain, pelvic organ prolapse, and cervical stump problems. Laparoscopic supra-cervical hysterectomy also seems to be superior to laparoscopic assisted vaginal hysterectomy in terms of hospital stay, blood loss and complications.

Robotically assisted hysterectomies

The robotic surgical platform allows a surgeon to perform the procedure from a remote console. Potential benefits of robotic surgery include increased range of motion with instrumentation, three-dimensional stereoscopic visualisation and improved ergonomics for the surgeon. However, while the robotic approach confers major advantages for procedures such as prostatectomy, for which alternative minimal access approaches are limited, both the laparoscopic and vaginal approaches are already widely available and used for removal of the uterus. Despite the rapidly growing enthusiasm for robotic hysterectomy, the majority of available data comes from small observational studies reported from single institutions, with the procedures performed by highly experienced surgeons. Thus at present the results from robotic surgery for hysterectomy are not generalizable and therefore not applicable to the broader practice of gynaecology. A 2012 Cochrane review of randomised controlled trials concluded that robotic surgery was not associated with improved effectiveness or safety. It is associated with significantly increased cost, with some estimates suggesting that robotic surgery is approximately £3000 more expensive than laparoscopic hysterectomy. The robotic surgery enthusiasts would vigorously dispute this and time, experience and, more importantly, well-designed and executed research will resolve these controversies.

Alternatives to hysterectomy and current stand in the United Kingdom

The total number of procedures performed for menorrhagia has significantly increased between 2000 and 2008. This may reflect an increasing awareness among women of the availability of therapies to treat menorrhagia, but it has also been argued that the introduction of endometrial ablation procedures has lowered the threshold for surgery. It has also been suggested that the

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