

Hysterectomy for benign gynaecological disease

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Abstract

Despite the advent of newer, and in some instances less invasive, interventions for the management of abnormal uterine bleeding, hysterectomy remains the most commonly performed major gynaecological operation. It continues to score highest in satisfaction rates. It is therefore imperative that all aspects of this operation are reviewed on a regular basis. For example, all evidence suggests that the vaginal route is the safest, most cost-effective approach 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 no 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. Complications of any new approach 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 continue to be addressed, and perhaps one day the definitive study that will answer the question will be undertaken.

Keywords abdominal hysterectomy; alternatives to hysterectomy; laparoscopic hysterectomy; myomectomy; ovarian conservation; pelvic organ function complications of hysterectomy; psychological sequelae of hysterectomy; quality of life; robotically assisted hysterectomy; vaginal hysterectomy

Introduction

Hysterectomy remains the most common major gynaecological operation performed worldwide. About 600,000 hysterectomies are carried out in the US and 40,000 in England per year. Forty percent of women all over the world will have hysterectomy by the age of 64 and indication for the majority will be to relieve symptoms and 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 embolisation 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. 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 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. In a recent

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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 recognised 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 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. Cochrane review found no added benefit for laparoscopic over vaginal hysterectomy.

In appropriately selected patients, evidence suggest 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 is 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 hysterectomy/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, orgasm, frequency and quality, 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.

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 generalisable 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 and experience will tell.

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 increased figures reflect a failure of the levonorgestrel intra-uterine system (Mirena) to control menorrhagia. Endometrial ablation, especially using the second generation devices, are regarded as simpler to perform with a short learning curve and reduced complication rates than hysterectomy.

At present, after failure of medical therapy that includes Tranexamic acid, guidance from the National Heavy Menstrual Bleeding Audit (from the Royal College of Obstetricians and Gynaecologists) and the National Institute for Health and Clinical Excellence (NICE) guidelines on Heavy Menstrual Bleeding is to offer the woman a levonorgestrel intra-uterine system or second generation ablative procedures. NICE has encouraged the use of ablation as a primary therapy, particularly if the menorrhagia has a severe impact on quality of life. If the above treatment modalities fail, then the woman qualifies to be counselled for hysterectomy. The RCOG and NICE recognise that at present most of these hysterectomies are carried out abdominally, with the concomitant longer hospital stay, increased post-operative

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