Original Article

Hysterectomy: An Analysis of 162 cases in Dhaka National Medical Institute Hospital

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Abstract

Objective: To find out the indications, operative and post operative complications of Hysterectomy in women with benign pelvic diseases, with an aim to improve management at our unit.

Place and duration of the study: This study was conducted in the department of Obstetrics and Gynaecology, Dhaka National Medical Institute Hospital during the period from July 2012 to June 2013.

Materials and Methods: A hospital based prospective study was conducted in all patients undergoing hysterectomy for benign diseases who were followed up from the time of admission to the time of discharge and two weeks thereafter. Indications, routes of hysterectomy, intra & post operative morbidities during hospital stay, and two weeks after discharge were noted. We also compared the complications of total abdominal versus vaginal hysterectomy. A total of 162 patients who had hysterectomy were available for analysis. Among them 110 had total abdominal hysterectomy (N=110) and 52 patients underwent vaginal hysterectomy (N=52).

Results: Total numbers of Hysterectomies performed were 162. Out of them 110 were total abdominal and 52 were vaginal hysterectomies. The principal indication for the vaginal hysterectomy was uterine prolapse (84.7%), while the most common indication for the total abdominal hysterectomy was uterine fibroid (53.6%). The overall complications rates were (39.04%) and (28.84%), in women who underwent total abdominal and vaginal hysterectomies respectively. Intraoperative complications were (12.96%).. Febrile morbidity was the most common post operative complications in (8.64%). Urinary tract infections remained the most common febrile morbidity. There were two cases of reactionary haemorrhage in abdominal hysterectomy and one case of secondary haemorrhage in vaginal hysterectomy. Wound infection was found in 19 (17.3%) cases of abdominal hysterectomy.

Conclusion: Vaginal hysterectomy is associated with less intraoperative and postoperative complication rates than total abdominal hysterectomy.

Key words: *Hysterectomy, abdominal hysterectomy, vaginal hysterectomy, Indications, complications*

Introduction

Hysterectomy is the surgical removal of the uterus, usually performed by a Gynaecologist. The three routes of hysterectomy are abdominal (TAH), vaginal and laparoscopically assisted, with the first being the most common and the last has the potential for short hospital stay.[1] The rate of hysterectomy varies between 6.1-8.6 per thousand women of all ages.[2] In the 1970s one in 3 women in the United States of America, and one in 5 women in the United Kingdom, had a hysterectomy before the age of 60.[3,4] In 2003, over 600,000 hysterectomies were performed in the United States alone, of which over 90% were performed for benign conditions In the United Kingdom about 100,000 hysterectomies are performed annually.[1] Removal of the uterus renders the patient unable to bear children and has surgical risks as well as long term side effects. So the surgery is normally recommended when other treatment options fail to give satisfactory results. It is expected that the frequency of hysterectomies for non-malignant indications will fall as there are good alternatives in many cases.[5] Wood et al,[6] noted a 30% decline between 1976 and 1986 in hysterectomies. This decline was due to greater use of medical control of menorrhagia and dysfunctional uterine bleeding, myomectomy and the increase in the use of the endometrial ablation. Oophorectomy is frequently done together with hysterectomy to decrease the risk of ovarian cancer. However, recent studies have shown that prophylactic oophorectomy without an urgent medical

indication decreases a woman's long-term survival rates substantially and has other serious adverse effects,[7] particularly in terms of inducing early-onset-osteoporosis and this effect is not limited to pre-menopausal women; even women who have already entered menopause were shown to have experienced a decrease in long-term survivability post-oophorectomy.[8]

The majority of potential post operative complication associated with gynaecological surgery is common to other surgical procedure and represents the complicated response of the body to the stresses imposed by the surgery. Injury to the ureters is one of the most serious complications of hysterectomy because of subsequent renal impairment. Because of close anatomical relationship of the bladder with uterus and upper vagina, the bladder is the segment of the lower urinary tract that is most vulnerable to injury.[9] The incidence of bladder injury is 1-2%.[10] Small bowels are the most common intestinal injuries in gynaecological surgery. Bowel injuries often are associated with performance of posterior colpoperineorrhaphy and are usually confined to the rectum. It occurs in around 0.3% of vaginal and abdominal hysterectomy.[11] Hysterectomy is associated with a risk of postoperative haemorrhage. This is less with abdominal rather than vaginal procedures. Complications of vaginal hysterectomy may range from cuff cellulites to infected vaginal haematoma or cuff abscess, post operative ovarian abscess, septic pelvic thrombophlebitis to osteomyelitis pubis and wound infection. Wound infection may be early or late. Early wound infections are characterized by temperature elevation within first 48 hours and cellulitis. Late onset infection are characterized by persistent low grade temperature and purulent drainage from the incision .[12] Primary haemorrhage may be due to bleeding from the vaginal cuff or pedicles or may be due to retroperitoneal haemorrhage. Secondary haemorrhage which presents after 24 hours is usually due to infection.

Materials and Methods

This hospital based prospective study was carried out in the department of Obstetrics and Gynaecology, Dhaka National Medical Institute Hospital from July 2012 to June 2013.

A total 162 patients who had hysterectomy for benign diseases were available for analysis. Group one consisted of patients who had total abdominal hysterectomy (N=110), and group two consisted of patients who had vaginal hysterectomy (N=52). Subjects with morbid obesity (BMI>30), pelvic malignancy, cardiac diseases or those whose route of hysterectomy was converted to abdominal (AH) from vaginal (VH) were excluded from the study. All the patients were followed from the time of admission to time of discharge and two weeks post operatively. Pre existing medical illnesses like diabetes and hypertension were treated pre operatively. Prophylactic antibiotics were given to all patients. At the time of surgery following were noted- age, parity, indication, route of hysterectomy, time taken for surgery, any complications if occur during surgery in detail.

The length of operation time in minutes was recorded from the first surgical incision to the time at which all wounds were closed and dressed. Every patient had haemoglobin estimation pre-operatively and on the third post-operative day. Post operative temperatures were recorded 4 hourly and any patient having temperature more than 37.5^0C were investigated. Postoperative outcome was measured in terms of wound infection, urinary tract infection, and pyrexia, hospital stay in days, secondary haemorrhage, readmission, reopening and mortality. The length of the time (days) from the morning of the first post-operative day upto and including the day of the discharge was recorded. Apyrexial, fully ambulated patient requiring no further analgesia were considered fit for discharge. Data was recorded and entered in SPSS version 16 for analysis. Mean and SDs were calculated for age, parity, operating time (minutes), drop in haemoglobin (mg/dl), length of hospital stay (days).Frequency (%) was calculated for peri- and post-operative complications. 'Chi -square' test was used for comparing descriptive variables. A p value of < 0.05 was taken as statistically significant.

Results

A total of 162 women who met the inclusion criteria were available for analysis. Group one (N=110), consisted of women who had TAH, and group 2 (N=52), consisted of women who had VH.

Table I-Characteristics of patients who had hysterectomy by abdominal (TAH) and vaginal (VH) approach.

Characteristics	Vaginal (N=52) Mean±SD	Abdominal (N=110) Mean±SD
Age (years	44.33±7.41	55.88±13.64
Parity	3.58±4.25	5.81±2.93
Weight (kg)	60.74±6.08	58±3.42
Height (cm)	157±2.05	156±2.08
BMI (kg/m^2)	24.68±2.23	23.04±1.65

Preoperative haemoglobin(g/dl)	11.01±.75	10.85±.48
Duration of operation (min)	86.59± 8.83	92.31±8.25
Post operative haemoglobin (g/dl)	10.04±.92	9.79±.41
Drop in haemoglobin	1.02±.59	1.06±.31
Hospital stay (days)	9.10±3.82	8.00±1.47

No significant differences were found between both groups in patients' operative time, hospital stay and post operative drop in haemoglobin **(Table 1)**. There was a significant increase of age ($p<0.01$), parity ($p<0.05$), in the VH group compared to the TAH group **(Table 1)**. There was a significant reduction of body mass index (BMI), ($p<0.05$), in the VH group **(Table 1)**.

Table II-Associated medical problems of the patients who had hysterectomy

Indications	Abdominal N=110 N (%)	Vaginal N=52 N (%)
Diabetes mellitus	27 (24.5)	09 (17.3)
Hypertension	07 (6.4)	06 (11.5)
Diabetes & hypertension	07 (6.4)	07 (13.5)
Hypothyroid	01 (0.9)	01 (1.9)
Anaemia	02 (1.8)	
Bronchial asthma	-	04 (7.7)
Ni	66 (60)	25 (48.1)
Total	**110 (100)**	**52 (100)**

Table -II shows that, 27 (24.5%) cases of TAH and 09 (17.3%) cases of VH had diabetes mellitus. Both hypertension and diabetes mellitus was present in 6.4% and 13.5% in TAH and VH group respectively. These pre existing medical illnesses including hypothyroidism, anaemia and bronchial asthma were treated pre operatively.

Table III-Indications of hysterectomy

Indications	Abdominal N=110 N (%)	Vaginal N=52 N (%)
Fibroid uterus	59 (53.6)	03 (5.8)
Dysfunctional uterine bleeding	16 (14.5)	02 (3.8)
Adenomyosis	11 (10.0)	03 (5.8)
Endometriosis	03 (2.7)	-
Benign ovarian tumour	06 (5.5)	-
Chronic cervicitis	02 (1.8)	-
CIN	03 (2.7)	-
Postmenopausal bleeding	06 (5.5)	-
PID	04 (3.6)	-
Uterine prolapse	-	44 (84.7)
Total	**110 (100)**	**52 (100)**

Table- III. The principal indication for the vaginal hysterectomy was uterine prolapse (84.7%), while the most common indication for the total abdominal hysterectomy was uterine fibroid (53.6%). Other indications of abdominal hysterectomy were DUB adenomyosis, endometriosis, postmenopausal bleeding etc.

Table IV Concurrent procedures during hysterectomy

Concurrent procedure	Abdominal N=110 N (%)	Vaginal N=52 N (%)
Bilateral salpingo-oophorectomy	20 (18.2	-
Unilateral salpingo-oophorectomy	10 (9.1)	01 (1.9)
Tota	**30 (27.3)**	**01(1.9)**

Concurrent procedures done along with hysterectomy are shown in **Table -IV.** Here 20 (18.2%) cases of TAH group had bilateral salpingo-oophorectomy and 10 (9.1%) had unilateral salpingo-oophorectomy. One case (1.9%) of vaginal hysterectomy had unilateral salpingo-oophorectomy.

Table V-Intraoperative complications during hysterectomy

Complications	Abdominal N=110 N (%)	Vaginal N=52 N (%)
Anaesthetic complication	-	-
Haemorrhage so as to require blood transfusion >500ml	14 (12.7)	05 (9.6)
Injury to viscera:		
Bladder	01 (.91)	01 (1.9)
Ureter	-	-
Bowel	-	-
Total	**15 (13.6)**	**06 (11.5)**

Intraoperative complications are shown in **Table- V.**

Here 14 (12.7%) cases of TAH and 05(9.6%) of VH cases had excessive haemorrhage requiring blood transfusion of >500 ml. Overall intraoperative complications during abdominal and vaginal hysterectomy were 15(13.6%) and 06 (11.5%) respectively. There were two cases of bladder injury; one was during abdominal hysterectomy and another one during vaginal hysterectomy.

Table VI- Postoperative complications

Complications Abdominal	Abdominal N=110 N (%)	Vaginal N=52 N (%)
Haemorrhage:		
i. Reactionary (requiring relaparotomy)	02 (1.8)	-
ii. Secondary	-	01 (1.9)
Paralytic Ileus	01 (.91)	-
Febrile morbidity	09 (8.2)	05(9.6)
i. UTI	07 (6.4)	04 (7.7)
ii. Unexplained fever	02 (1.8)	01 (1.9)
Wound complications:	19(17.3%)	-
i. Sanguinous discharge	12(10.9%)	-
ii. Frank pus with wound dehiscence requiring secondary suture	07(6.3%)	-
Total	**28 (25.45)**	**09 (17.3)**

Table-VI. Shows that overall postoperative complication was 28(25.45%) and 09(17.31%) in abdominal and vaginal hysterectomy respectively.

Febrile morbidity was noted in14 (8.64%) cases. Urinary tract infections remained the most common febrile morbidity. There were two cases of reactionary haemorrhage in abdominal hysterectomy and one case of secondary haemorrhage in vaginal hysterectomy. Secondary haemorrhage was managed conservatively and other two required laparotomy. There were 19 (17.3%) cases of wound infection in abdominal hysterectomy of which 12 (10.9%) were sanguinous discharge or frank pus and 6 (5.5%) cases required secondary suture due to wound dehiscence.

Discussion

Hysterectomy is one of the most common major elective surgical procedures performed after caesarean delivery. This study indicates that most common indication for abdominal hysterectomy was fibroid uterus followed by DUB and Endometriosis/adenomyosis. Majority of patients in this study were more than 35 years old, had completed family and preferred this operation due to their long lasting symptoms, poverty and recurrence of fibroid after myomectomy. The hysterectomy has high rate of satisfaction and is the definitive treatment but now the ablative method are preferred due to shorter hospital stay, quick return to full activities and less complication rate.

To reduce the number of hysterectomies and associated complications, less invasive alternate treatment method can be tried. There are now an increasing number of non surgical alternatives to hysterectomy for fibroid uterus like uterine artery embolisation (UAE). It is less invasive option for those who want to conserve uterus but in our setup these facilities are not available. GnRH agonist significantly reduces the size of fibroid and blood flow but it is not favoured because of high cost, postmenopausal symptoms and need for add back therapy .[13-15]

In our study, intra-operative haemorrhage requiring blood transfusion of >500 ml was noted in 14(12.7%) cases of abdominal and 5(9.6%) cases of vaginal hysterectomy. The incidence of haemorrhage was 2.8% in the study by Cosson M et.al[18]. The amount of blood loss is more in our study because of extensive adhesion due to previous surgeries, endometriosis and unsatisfactory assistance in some of the cases. The bladder injury occurred in one case (0.9%) of TAH having extensive adhesions due to previous surgeries and one case ((1.9%) of VH having long standing neglected utero-vaginal prolapse had bladder injury. Cosson M et al[16] reported 0.9% of bladder injuries in their analysis which is similar to our study. Draca -P has reported 2 bladder injuries in a series of 817 vaginal hysterectomies[17].

Postoperative complications included infections like urinary tract infection, chest infection, wound infections and pyrexia. Febrile morbidity was noted in 14 (8.64%) cases. The most common cause of febrile morbidity was due to urinary tract infection (6.4% in TAH and 7.7% in VH) and occurred in those patients where catheter was retained for longer period of time. Ahmed F and Wasti S had noted 16% urinary tract infection in their study of abdominal hysterectomy[18].

In our study two cases of Total abdominal hysterectomy (1.8%) required relaparotomy due to reactionary haemorrhage and secondary haemorrhage occurred in one case of vaginal hysterectomy (1.9%) which was managed conservatively. Two cases of secondary haemorrhage, one in abdominal (3.2%) and another one in vaginal hysterectomy (5.2%) was noted in the study of Saha R et. El[19].

There were 19 (17.3%) cases of wound infection in our study. Twelve cases (10.9%) had serosanguinous discharge and were managed conservatively and seven cases (6.3%) had frank pus and required secondary suture. Less infection (6%) was observed by Saha R et. El19. The reasons for more wound infection in our study could be due to poor resistance, long lasting anaemia due to heavy menstrual bleeding, poverty in our population and obesity

Conclusion

Hysterectomy is one of the most common major elective surgical procedures performed after caesarean delivery. Intraoperative and postoperative complications after hysterectomy are not rare events. Risk and complications of hysterectomy depends on several factors including women's health and surgeon's experience and expertise. To reduce the hysterectomy related complications and to decrease the morbidity, other less invasive methods such as uterine artery embolisation, endometrial ablation or hormonal methods such as use of GnRH agonist should be tried. As these procedures are expensive and not available in most of the centers of our country, abdominal hysterectomy should be done only in strongly indicated cases. In our study, vaginal hysterectomy is associated with less intraoperative and postoperative complication rates than TAH. So, all patients requiring a hysterectomy for benign conditions with a moderate - sized uterus can be offered VH because of its obvious advantages.

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