Original Article

An Audit of Post Operative Complications of Elective Abdominal Hysterectomies

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ABSTRACT

Objective: To record common post operative complications their risk factors.
Place and Duration of Study: Obstetrics and Gynaecology unit of DHQ hospital Timergara lower Dir, from 1/01/2006 till 30/12/2006.
Method: The complications were recorded on a pre constructed Performa showing demographic data of patient, history, general health, indication for operation and surgeon rank. The Patients were divided in to three groups: A, B & C.
Group – A: Complications occurring after operation with in the first 72 hours.
Group – B: Complications occurring after and 72 hours but with in hospital stay
Group – C: And complications recorded at follow up visit after 6 weeks.
Results: Our study showed the over all complications rate of 48.7% which is a significant rate, mortality were 4 out of 478 cases (8.36/1000).
Conclusion: The rate of complications was high in those women who had other associated medical problems, which can be reduced or avoided by Proper Pre-operative assessment, management and Technical factors under surgeon's control.

keywords:

INTRODUCTION

Clinical audit is a process by which patient care is improved; various aspects of patient care are compared against agreed standards, keeping track of personal out come data and contribution to a clinical data base, ensuring that a surgeon's own performance is monitored continuously. The audit is the systematic critical analysis of the quality of medical care including the procedures used for diagnosis and treatment, the use of resources and the resulting out come for the patients. A simple way of defining audit is to look at it as a set of questions like, what do we think we are doing? What we are really doing? How can we improve what we are doing [(1)].

The term "abdominal hysterectomy "means the removal of uterine body and the entire cervix with or with out its appendages through an abdominal route [(2, 3)]. This hysterectomy done by skilful gynaecologist, where the indication for hysterectomy is present, has been proved to be a health benefit for women in need [(4, 5, 6)]. Although, nowadays hysterectomy is generally considered safe, still several possible complications are associated with the procedure. These complications can result in mild to severe morbidity and even (although rare) mortality [(7)]. Post operative complication of any kind can occur at any time after the operation. It is important to be aware of the immediate & long term complications that can result from hysterectomy [(8, 9)]. There is no universally accepted standard of morbidity or definition of "major" or "serious" complication of hysterectomy. There is a need for a standard morbidity in surgical procedure is of utmost importance in order to find out post operative complication following hysterectomy. In our study patients were classified in to three groups.

1. Complications occurred with in the first 72 hours.
2. After first 72 hours but during the hospital stay.
3. Latter at 6 weeks post operative follow up visit.

Operative sequel was not included in our list of complications.

PATIENTS AND METHODS

This one year study was conducted in the obstetric and gynaecology unit of D.H.Q hospital Timergara Distt. Dir during 1st Jan 2006 till 31st December 2006. All patients who had elective hysterectomy with or with out salpingoopherectomy for various indications were included. All clinical details of patients including relevant information about past medical history, past Gynaecological management, base line investigations, blood grouping, full blood count, random blood sugar,

urine X-ray chest, serum urea, creatinine, abdomenopelvic, ultrasound etc. were recorded on a pre constructed Performa. Any associated disease e. g. diabetes, hypertension, respiratory problems were treated in collaboration with medical team, operator rank & post operative complications were recorded and patients were discharged between 5^{th} -7^{th} Post Operative day after receiving histopathology report . Out patient follow up were done after 6 weeks.

Post operative complications & its relation with age, parity, indication for operation, general health, expertise and rank of surgeon were analysed. Intra operative complications were not included in our list of complications. Antibiotic cover was given to all patients (100%).

RESULTS

During 1^{st} Jan 2006 to 31^{st} December 2006, 478 women had elective total abdominal Hysterectomy: 455 (95%) were operated for benign indications & 23(4.8%) were operated for various malignant indications. These operations were performed by consultant Gynaecologist (case=346) or medical officer (case=132) who were always assisted & supervised by senior colleague.

Table No.1: Indications of operation.

S.No	Indications	NO. of Patients	% Age
1	Fibroid	152	31.79%
2	Menorrhgia	119	24%
3	D.U.B	77	16.10%
4	End, hyperplasia (H/P based)	39	8.15%
5	Malignancies	23	4.81%
6	Polyps(end,cervical,placental)	15	3.13%
7	Benign ov,cysts	15	3.13%
8	Endometriosis of POD & ovaries	14	29%
9	Chronic pelvic pain	11	2.301%
10	Ca. endometrium	10	-
11	Ovarian malignancy	09	-
12	Bilateral ov cysts	04	0.83%
13	Hydatidiform mole	03	0.62%
14	End,hyperplasia&vag, decent	03	0.623%
15	Ca. Cervix	02	-
16	Intrauterine pregnancy with advanced ca ovary	01	-
17	Choreocarcenoma	01	-
18	Pyometera	01	0.2%
19	Primary amenorrhoea(cx agenesis)	01	0.2%
20	Mental retardation with end hyperplasia	01	29%

Complications rate were high among the cases operated by medical officers, the reason was probably long duration of operation, more tissue handling, more blood loss, poor quality of operative instruments, poor aseptic technique etc. Indications for Hystectomies were summarized in table-I. Majority of the women were of 40-59 years old as shown in table-2 (A). One hundred forty four cases were weighting up to 50 Kg, 188 patients were of 51-60kg-weight, as revealed in table (2-B). Many patients had associated medical problems like hypertension in 179 cases (table-3). Complications with in 72 hours are shown in table-4, after 72 hours to discharge from hospital in table-5 and late complications in table-6. Cases of mortality are given in table-7. Almost all patients complained of pain.

Table No. 2: Distribution of patients according to age & weight.

S. No	Age Groups	Cases	Wt of pt in Kilograms	Cases
1	Teenage	2	Up to 50 kg	144 (36)
2	20-29yr	19	51-60 kg	188(39)
3	30-39 yr	42	61-70 kg	120(25)
4	40-49 yr	258	>70 kg	26(5)
5	50-59 yr	143		
6	>60 yr	14		

Table No. 3: Distribution of patients according to associated medical problems.

PROBLEMS	NO OF PATIENTS	%AGE
Diabetes	18	3.76%
Hypertension	179	37.44%
Chronic chest infection	14	2.92%
Asthma	03	0.62%
Tuberculoses	02	0.41%
Peptic ulcer	03	0.62%
Steroid induced peptic ulcer	01	0.2%
Previous gynaecology surgeries	23	4.81%
{Sterilization=8 myomectomy=4 Caesarean section=6 Appendectomy=5}		

DISCUSSION

Hysterectomy has developed & evolved in the past 150 years from an extremely dangerous operation to a major therapeutic modality that can save life & improve health, assuming proper patient selection, preparation & skilful performance [6, 10]. Nowadays hysterectomy is one of the most frequently performed major operations for women of reproductive age. The vast majority of all hysterectomies are done abdominally even in countries with surgeon well trained in vaginal approach.

Table No. 4: Complications within the first 72 hours.

Complications	No. of Patients	%Age
1) primary haemorrhage(shock) re-operated for slipped ligature(o4) vaginal vault exploration with application of haemostatic stitches (02) thoracic out let syndrome (false perception of shock-01)	4 2 1 Total: 7	1.46%
2) evacuation of wound haematoma	01	0.2%
3)delayed recovery from anaesthesia	08	1.67%
4)delayed recovery needing intensive care &ventilators	02	0.41%
5) blood transfusion reaction	09	1.88%
{febrile reaction=7 allergic reaction=2}	-	-
6) Dyspnoea	13	2.71%
7) Vomiting	143	29.9%
8) Pain	300	62.76%
9) Febrile morbidity	108	22.5%
{source un identified=42 UTI =39 Abdominal incision infection=10 Upper respiratory tract infection=15 Pneumonia=01 Others=01}	-	-
10) life threatening events {pulmonary embolus/infarct=01 cardiopulmonary arrest=01}	02	0.47%
11)urinary retention	02	0.4%
12)illus	05	1.04%
13)gaseous distension	77	16.10%
14) hematemesis	03	0.627%
15) wound infection	111	23.22%
16)atelectasis	03	0.62%
17) pyodine skin burn	01	0.2%
18) pain/insomnia	307	64.62%

The chances of a women having hysterectomy by the age of 55 years is 20% &out of these 35- 64% will need hysterectomy because of menstrual abnormalities [4, 11, 12]. In our study most common age group was between 40- 50 years. Post operative complications were related to age of patients to some extent [13]. As the incidence of complication increases with increasing age, weight, poor general health, anaemia, diabetes, hypertension, chronic chest infection and malignancy etc.

Table No.5

Complications after 72 hours& during hospital stay
Febrile morbidity=233 (48.74%) {source unidentified=68 UTI=62 Abdominal skin infection=59 Vault haematoma=18 Pelvic cellulites=02 Upper respiratory tract infection=18 Pneumonia=02 Sepsis=03 Others=01}

Table No. 6: Complication at 6 week post operative follow up visit

Septic focus in skin incision	48	(10.04%)
No complaints	10	(2.09%)
Weakness	07	(1.46%)
Constipation	05	(1.04%)
Diarrhoea	03	(0.627%)
Fever	18	(3.76%)
Granulation tissue formation in vaginal vault	36	(7.53%)
Bleeding per vaginum (secondary haemorrhage)	15	(3.13%)
Vault haematoma	05	(1.04%)
Vault infection	02	(0.4%)
Readmission	21	(4.39%)
{for care of septic wound, abdominal distension, other GIT or urinary problems} lost for follow up	379	(79.27%)

Table No. 7: Causes of mortality:

Irreversible shock, primary haemorrhage
Pulmonary embolism
Septicaemia ,myocardial infarction
{Advanced carcinoma ovary with pulmonary embolism} total mortality=04 (0.83%) 08 per 1000 operations.

Among various indications for hysterectomies, uterine fibroid is the most frequently occurring uterine tumours and is the most common indication for hysterectomy [4, 5, 14, 15]. The large size and greater number of fibroid is associated with an increased risk of operative and post operative complications [16]. In this study n=152 (31.79%) of cases had fibroids. Menorrhogia affect approximately 22% of healthy women, the second most common indication for hysterectomy, in our study n=119 (24.8%) of cases had menstrual problems.

There is no universally accepted standard of morbidity [17]. Many investigators have used fever as an index of morbidity associated with gynaecological surgery, but their measure of fever has been varied,

similarly they have used different tests of non febrile complications usually with out any explanation.

We did this study to asses the risk of morbidity among all women under going elective hysterectomy in our unit although hysterectomy is relatively safe operation with a low mortality rate of only 0.6 per 1000 operations for benign indications [18]. But operative morbidity can be as high as 42.8%, when abdominal route is used [17]. In our study the over all complication rate was 48.7%.the complication rate is defined as the number of women with one or more complication per 100 women who underwent hysterectomy [8].

Infection is common post operative complication associated with hysterectomy, 6-25% of patients having abdominal hysterectomy develop infection post operatively [19, 20]. In all regardless of the careful precautions taken. Approximately one third of the women develop post op febrile infection [19].use of prophylactic antibiotics pre, intra or post operatively can greatly reduce infection occurring with hysterectomy. In our study the febrile morbidity was 22.59%, accounted for overall morbidity [21].

The most serious post operative complication of hysterectomy is haemorrhage which occur in 1- 3% of patients [13, 22, 23]. Although all patients are at risk, those having hysterectomy for gynaecological cancer, PID, or pelvic abscess, large fibroid, are at greater risk of developing post operative bleeding complications [15, 20].

In our analysis 0-83 % of women needed re-operation within the first 24 hours post operatively for slipped ligature, haemorrhage requiring transfusion was 1.46% .if post operative vaginal cuff bleeding occurs and is found to occur below the cuff, out patient suturing of the site will generally stop the bleeding. If the bleeding is above the vaginal cuff, further examination in operation theatre is warranted. If the patient when stabilised with intra-venous fluids, packed cell transfusion 2-4 units, the bleeding will generally stop and haematoma was formed, that will eventually be resolved in to the body [2, 13, 20].

In our study the rate of life threatening events i.e. post operative cardiac or respiratory arrest ,myocardial infarction, pulmonary infarction, embolism ,anaphylactic shock, disseminated intra vascular coagulation were not significant.

In this study most of the patients (n=400) were discharged from hospital on 5th post operative day after removal of stitches, while few (n=78) who were running temperature needed prolonged stay for further investigation and treatment, among women who had concurrent vaginal procedure developed urinary retention (0.41%).overall urinary tract infection occurred in 12.7% of all women.

Three of the patients had accidental urinary bladder injury during operation which were identified and repaired during surgery, as they had indwelling catheter for 2-3 weeks, were discharged after getting negative dye test.

Out of those who developed illus. (n=05) one was re operated for suspected forgotten surgical gauze, she latter developed severe wound sepsis and remained hospitalised for 31 days, while other patients with wound sepsis and wound dehiscence stayed for 18 days in hospital.

Other non categorised in-hospital complications atelectasis, fallopian tubes prolepses, thromboembolism, myocardial infarction, stroke, and renal failure can also occur [2, 13].

Long term complications i.e. early menopause is the result of hormone changes secondary to hysterectomy, early menopause can be associated with hysterectomy even when ovaries are retained [24]. Our study found that menopause occurred 4 years earlier in pre-menopausal women who underwent hysterectomy where both ovaries were retained as compared with similar women with out hysterectomy. One theory for this is decreased blood supply to ovaries, which disrupts their function resulting in improper production of sex hormone [25, 26].

Psychological effects that may manifest following hysterectomy vary from individual to individual. Some studies have found that women experience new feeling of depression, anxiety, decreased libido or social disruption due to lengthy post operative recovery. Other studies have concluded that women undergoing hysterectomy have improved quality of life because their previous unpleasant symptoms have been relieved.

The mortality rate associated with hysterectomy is low 0.6-1.6 per 1000 [10, 23]. Our recorded value was 04 cases out of 478 (8.3per 1000). It would have been zero or much reduced if the study would not have included the women with malignancies and other serious medical conditions like patient with cirrhosis of liver

The high complications rate of our study could be explained by the pre-existing condition, indication for hysterectomy, poor aseptic technique, and poor quality of our nursing care. This high complication rate and mortality was disappointing while the rate of readmission was 4.39% .and it was closer to 02-04% as reported by others following abdominal and vaginal hysterectomy.

Our analysis was also limited because the incidence of post operative morbidity and mortality is projected several years into the future, while our analysis was done mostly during the hospital stay. Therefore we can assume that the actual morbidity and mortality may be higher then the recorded values.

It is important for the patient and their physician to communicate regularly after Hysterectomy. Patients who experience on going depression after surgery should speak to health care provider to determine the need for counselling and or use of antidepressants.

CONCLUSION

Women who are at greater risk of post operative complication are those who are obese, older age group, anaemic, diabetic, hypertensive, from low socioeconomic status, with additional history of malignancy, experience or lack of experience of surgeon, excessive blood loss during surgery and long duration of surgery.

We could avoid complication like pyodine skin burn, sticking plaster allergies, wound infections, sepsis and weight related risk factors. Technical factors under surgeon control can significantly contribute to altered wound healing and wound problems. Although multiple complications may result from this procedure, it is important to keep in mind that most women are quite satisfied with the results of surgery and with significant relief from symptoms.

There is now increasing numbers of non surgical alternative to hysterectomy particularly for abnormal uterine bleeding and since this is the indication for hysterectomy in at least one third of cases. Recent treatment advances could bring the Hysterectomy rate down still further.

REFERENCES

1) Gambone JC, Reiter RC, Lench JB. Quality assurance indicators at short term out come of Hysterectomy. Obstet Gynecol 1990; 76:841.
2) Center for disease control & prevention. Women reproductive health. Hysterectomy fact sheet www.cde.gov/reproductive health./women RH/00-04-FS Hysterectomy.html. Accessed June 22, 2008
3) Dicker R C, Greenspan JR, Strauss L.T. Complication of abdominal & Vaginal Hysterectomy among women of reproductive age in United States. Am J Obstet Gynecol, 1982; 144: 841-845.
4) Black N; Clarkia, RoweP. A prospective cohort study of the clinical management of total abdominal hysterectomy for benign disease. J Obstet Gynecol 1995; 15:394.
5) Carleson KJ, Nichols D, Schiff 1. Indications for Hysterectomy N.Engl J.Med 1993; 328 - 856.
6) Farquhar CM, Sadler, Harvey SA, Stewart AW. The association of Hysterectomy & menopause. A prospective cohort study. Br J Obstet Gynecol, 2005; 112: 956-962.
7) Kovea SR, Hysterectomy out come in patient with similar indications Obstet Gynecol 2000; 45: 18-23.
8) Al-Kadre H.M, Al-Turki H-A, Saleh A Short &long term complications of abdominal and vaginal hysterectomy for disease. Saudi Med J.2002; 23(7): 806-15.
9) Carlson KJ Miller B A, Flower F J. The Maine women health study; 2 out come of Hysterectomy Obstet Gynecol 1994; 83:556-565.
10) John A, Rock-Howard W; Jones 3.telinde, s Operative Gynaecology (9thedition) Lippincott William &Wilkins 2003, (2) pp: 799-824.
11) Davies A; Hart; Magos A. Hysterectomy surgical route & complications. Eur J Obstet Gynecol 2002;104 : 1485 (104:148-151)
12) Dao AH, Cartwright PS. Fallopian tube prolapse following abdominal Hysterectomy J. Tenn Med Assoc. 1987; 80:141.
13) Falcon T, Cogan-Levy SC. Overview of Hysterectomy up to date on line 16.2.hpt; 11 utdol.com/on line/contact/topic key=gyn-surg/11669& selected title=1N 150 &source=search-result. Accessed June 22, 2008.
14) Bernstein S, Mc GlynnE, Sia A. For health maintenance organization, Quality of care consortium. The appropriation of Hysterectomy, a comparison of care in seven health plans JAMA 1993:269; 2398.
15) Cynthia M; Farequhr, M D. Frenzcog. Hysterectomy rate in the United States 1990-1997. Obstet Gynecol 2002, 99; 229-34.
16) Coulter A, Mc Phersonk, Vesey M British women under goes to many or too few Hysterectomy s o c sci Med 1988, 27, 987-94.
17) Dandade D; Malink LR wheeler. JM Therapeutic Gynaecological procedures. In; Decherney AH, Nathan L, Goodwin TM Laufer N, ed. Current diagnosis & treatment, Obstet Gynecol 10th ed. New York NY; Mc Graw-Hill Medical 2007.
18) Gimbal H, Zobbev, Anderson BM, Randomised control trial of total compared with subtotal Hysterectomy with one year follow up results.Br J Obstet Gynecol, 2003:110:1088.
19) Griffith-Jones MD, Jarvis GJ, MC Namare HM. Adverse urinary symptoms after total abdominal hysterectomy. Fact or fiction. BJU 1991; 67; 295.
20) Hillis S, March banks P, Peterson H, uterine size and risks of complications among women under going abdominal Hysterectomy for Leiomyomas. Obstet
21) Haris W. Early complications of abdominal & Vaginal Hysterectomy. Obstet Gynecol surv 1995; 50 : 795.
22) Chongosmchaic: Lumbigonon P. Placebo controlled double-blind randomised study of prohylacticantibiotics in elective abdominal Hysterectomy. J Hosp infact 2002:52(4):302-6.

23) Drife J. conserving the cervix at hysterectomy Br. J Obstet Gynecol 1994; 101:563.
24) KJerulf KH, Guzinski, GM; Langenberg PW, Hysterectomy & race. Obstet Gynecol 1993; 82:757-764.
25) Clarke A, Black N Rowe P; Indication for and out come of total abdominal Hysterectomy for benign disease. A prospective cohort study Br. J Obstet Gynecol 1995:102; 611.
26) Helstrom L, Lundberg PO, Sorbom D. Sexuality after Hysterectomy; a factor analysis of women's sexual lives before and after subtotal Hysterectomy. Obstet Gynecol 1993; 81:357.
27) Drife J. conserving the cervix at hysterectomy Br. J. Obstet Gynecol 1994; 101:563.

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