

Disparity between clinical and final diagnosis of patients undergoing hysterectomy

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ABSTRACT

Background: Hysterectomy is by far the commonest major gynaecological procedure done for several indications. A thorough history, careful physical examination and some simple investigations are all that is needed to establish the diagnosis justifying the need for hysterectomy in most of the cases. But even with the advent of modern technologies, a good proportion of patients are misdiagnosed preoperatively which is evident after histopathological confirmation. This study aimed to evaluate the clinical diagnoses which ultimately lead to hysterectomy and to find out to what extent they are consistent with the final diagnoses after confirmation by histopathological examination.

Methods: This observational study was carried out in the Department of Obstetrics and Gynaecology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh from January to June 2018. Total 100 patients, irrespective of age and parity, were included whose total abdominal hysterectomy was planned. History, clinical findings, investigation reports and histopathological reports were recorded. Then clinical and histopathological diagnoses were tabulated and expressed as proportion.

Results: The incidence of total abdominal hysterectomy was highest (49%) among the age group of 41-50 years. Average age of the study subjects was 45.3 years. Majority of the hysterectomies were done for fibroid uterus (48%) and abnormal uterine bleeding due to ovulatory dysfunction (AUB-O) (16%). Histopathology confirmed fibroid or leiomyoma in 39% cases versus clinical diagnosis of 48% and 18% of the specimens revealed no organic lesion on histopathology.

Conclusion: Though not remarkable, still a certain proportion of clinical diagnoses differ with histopathological findings in patients undergoing hysterectomy even in tertiary level.

Key words: clinical diagnosis, histopathological diagnosis, hysterectomy.

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INTRODUCTION

Hysterectomy is by far the commonest major gynaecological procedure worldwide.^{1,2} Total abdominal hysterectomy (TAH) is usually the most frequently used

method in centres all over the world, especially when concomitant salpingo-oophorectomy is intended.³ Hysterectomy can be performed by abdominal, vaginal or laparoscopic route and may or may not be accompanied by salpingo-oophorectomy of either one or both sides. Vaginal hysterectomy is performed predominantly for uterine prolapse, whereas abdominal hysterectomy is an indication for mostly menstrual disturbances and fibroids. At present, most of the hysterectomies performed worldwide are through the abdominal route.⁴ About 500,000-600,000 procedures are performed annually in the USA; the abdominal route for hysterectomy is the preferred route in 60%-80% of these operations.^{4,5} In recent years, hysterectomy with laparoscopic assistance is increasingly being performed in developed and developing nations all over the world.⁴ Women aged 30 to 54 most frequently undergo

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hysterectomy as compared to other age groups and contribute 74% of all hysterectomies.⁶

Hysterectomy is often thought as a last resort but it is a common operation done due to a number of indications. Even with the advent of remarkable improvement in conservative management of uterine lesions, hysterectomy remains the most preferred modality of treatment for pelvic pathologies like fibroid, adenomyosis, pelvic inflammatory disease and malignant disorders.^{7,8} High satisfaction rates and improved quality of life following hysterectomy are consistently reported.⁹ As demonstrated by Carlson and colleagues in the Maine Women Health Study, hysterectomy is highly effective for relief of symptoms associated with common non malignant gynaecologic conditions.¹⁰ With improved surgical skill and evidence based scientific practice, safe anaesthetic procedures and use of broad spectrum antibiotics, hysterectomy is now a days a safe procedure. According to Cameron¹¹, if cases associated with pregnancy and malignancy are excluded, the mortality rate is 6 per 10,000 procedures. Mortality from hysterectomy in most medical centres is one to two per 1000. It is possible to report no mortalities in a series of several thousand hysterectomies.¹⁰ However, morbidity continues to plague the procedure. Harris found an overall complication rate of up to 50% but serious complications requiring reoperation or long-term disability are relatively uncommon. Reoperation rates of 4% to 4.3% have been reported in some studies. The most common complications include infection, haemorrhage and injuries to adjacent organs.¹⁰

Hysterectomy is associated with a life time risk of 20-35% and this procedure would be unwarranted if not originally indicated.¹²⁻¹⁴ Because of significant rates of mortality and morbidity in all age and diagnostic groups, hysterectomy cannot be considered a low risk operation to be used for treating relatively minor gynaecologic symptoms or disease.¹⁰ Moreover with emergence of effective medical and conservative treatment for benign conditions, the indication of hysterectomy must be justified. According to Magon et al.¹⁵ hysterectomy is a surgery which has been used and misused, underused and abused at different times in gynaecology. The indication for hysterectomy in any case must therefore be clearly defined and should be one for which more conservative treatment is not likely to be efficacious.¹⁶

In this study, the common indications, presenting symptoms, clinical and diagnostic findings were evaluated and compared with per-operative morphological and postoperative histopathological findings of the resected uteri to find out the disparity between the clinical diagnosis and the final diagnosis.

METHODS

This observational study was conducted in the Department of Obstetrics & Gynaecology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh from January to June 2018. During the 6 months study period, a total of 144 total abdominal hysterectomies (TAH) were performed in BSMMU in patients admitted with benign gynaecological diseases. Among these, 100 cases were randomly selected using simple random sampling method through lottery without replacement. The objectives of the study were explained to the post-operative patients who met the selection criteria, those who gave the consent were interviewed and the data were collected in a preformed data collection sheet. Patients having hysterectomy due to obstetric causes like ruptured uterus, uncontrolled post partum haemorrhage and patients having radical hysterectomy for invasive cervical cancer were excluded. Prior to the study ethical clearance was taken from appropriate authority. All relevant demographic and clinical information were documented in a preformed questionnaire by interviewing the patients. Further information was obtained from hospital records, relevant investigations, per-operative findings and histopathological reports and were documented accordingly. Clinical diagnoses taken as primary indication for which hysterectomy was undertaken. Finally, the clinical diagnoses, per-operative findings and the histopathological findings were compared and were presented as frequency tables.

RESULTS

In the present series the incidence of total abdominal hysterectomy was highest (49%) among the age group of 41-50 years followed by 45% in age group of 31-40 years. Average age of the study subjects was 45.3 years. Majority of the women (73%) had 1-4 children. Among a number of presenting complaints, the most common ones were menorrhagia (56%), dyspareunia (37%), pain in lower abdomen (26%), irregular vaginal bleeding (21%) and abdominal lump (20%) (Table I).

Table I. General clinical features of the subjects (N = 100)

Variables	Number	Percentage
Age group (years)		
31-40	45	45
41-50	49	49
> 50	6	6
Average age	45.3 years	-
Parity		
Nulliparous	4	4
1-4	73	73
≥5	23	23
Symptoms *		
Menorrhagia	56	56
Dysmenorrhoea	37	37
Lower abdominal pain	26	26
Irregular bleeding	21	21
Abdominal lump	20	20
Backache	19	19
Dyspareunia	12	12
Vaginal discharge	8	8
Postcoital bleeding	5	5
Postmenopausal bleeding	2	2

* Multiple responses

Indications for total abdominal hysterectomy based on clinical diagnosis are shown in Table II. Majority of the

hysterectomies were done for fibroid uterus (48%) and abnormal uterine bleeding due to ovulatory dysfunction (AUB-O) (16%).

Table II. Indications of hysterectomy based on clinical diagnosis (n = 100)

Indications	Number	Percentage
Fibroid uterus	48	48
Abnormal uterine bleeding due to ovulatory dysfunction (AUB-O)	16	16
Pelvic inflammatory disease (PID)	9	9
Chronic cervicitis	7	7
Endometriosis	6	6
Ovarian tumour	5	5
Cervical polyp	4	4
Adenomyosis	3	3
Postmenopausal bleeding	2	2

Comparison between clinical diagnoses, peroperative findings and histopathological findings, difference between histological and clinical diagnosis and final diagnoses after histopathological confirmation are shown below in Table III. Out of 100 cases, peroperative findings of 87 cases (87%) seemed to be similar to the clinical diagnosis and after histopathological examination 84 cases (84%) were consistent with their clinical diagnosis.

Table III. Comparison between clinical diagnosis, per-operative findings and histopathological confirmation (N= 100)

Indications	Clinical diagnosis	Per-operative findings	Histopathological confirmation
Fibroid uterus	48	40	38
Abnormal uterine bleeding due to ovulatory dysfunction (AUB-O)	16	15	14 [as no organic lesion was found in resected uterus]
Pelvic inflammatory disease (PID)	9	8	8
Endometriosis	6	5	5
Ovarian tumour	5	5	5
Chronic cervicitis	7	5	5
Cervical polyp	4	4	4
Adenomyosis	3	3	3
Post menopausal bleeding	2	0	0*

*[Endometrial hyperplasia on histopathology]

Fibroid uterus was the commonest diagnosis by clinical presentation, examination and investigations (Table IV).

Among the 16 cases clinically diagnosed as abnormal uterine bleeding due to ovulatory dysfunction (AUB-O), 14 (93.75) cases were confirmed to be the same, one case was fibroid uterus and another one was adenomyosis (Table V). Eight (88.88%) clinically

diagnosed cases of pelvic inflammatory disease (PID) out of 9 PID cases were confirmed histopathologically. The one case which differed from clinical diagnosis, exhibited endometriotic deposition in the pelvis which was confirmed by histopathology as endometriosis (Table VI). And among the 6 cases of endometriosis, 5 (83.33%) cases were confirmed as endometriosis (Table VII).

Table IV. Final diagnosis of clinically diagnosed fibroid uterus patients (N = 48)

Diagnosis	Number of patients	Percentage
Fibroid uterus	38	79.16
Abnormal uterine bleeding due to ovulatory dysfunction (AUB-O)	4	8.33
Pelvic inflammatory disease (PID)	3	6.25
Adenomyosis	3	6.25

Table V. Final diagnosis of clinically diagnosed abnormal uterine bleeding due to ovulatory dysfunction (AUB-O) patients (N = 16)

Diagnosis	Number	Percentage
Peroperative findings showed no organic lesion	15	93.75
Histopathological confirmation of absence of any organic pathology	14	87.50
Histopathological confirmation as leiomyoma	1	6.25
Histopathological confirmation as adenomyosis	1	6.25

Table VI. Final diagnosis of clinically diagnosed pelvic inflammatory disease patients (N = 9)

Diagnosis	Number	Percentage
Histopathological confirmation of PID	8	88.88
Histopathological confirmation as endometriosis	1	11.12

Table VII. Final diagnosis of clinically diagnosed endometriosis patients (N = 6)

Diagnosis	Number	Percentage
Peroperative findings suggestive of endometriosis	5	83.33
Histopathological confirmation of endometriosis	5	83.33
Histopathological confirmation as PID	1	16.67

Table VIII. Comparison of clinical diagnosis and final diagnosis after histopathological examination (N = 100)

Indications	Clinical diagnosis	Final diagnosis
Fibroid uterus	48	39
Abnormal uterine bleeding due to ovulatory dysfunction (AUB-O)	16	18
Pelvic inflammatory disease (PID)	9	12
Endometriosis	6	6
Ovarian tumour	5	5
Chronic cervicitis	7	6
Cervical polyp	4	4
Adenomyosis	3	7
Cervical intraepithelial neoplasia (CIN)	0	2
Postmenopausal bleeding	2	0
Endometrial hyperplasia	0	2

Histopathology confirmed leiomyoma in 39% cases versus clinical diagnosis of 48%, thus 9% cases were clinically overestimated. However, most of the conditions were clinically underestimated; 16% cases seemed to be AUB-O but 18% of the specimens revealed no organic lesion on histopathology, PID was the final diagnosis in 3% cases in contrast to 9% clinically and adenomyosis was clinically diagnosed in 3% but histopathology confirmed 7% cases. One case of adenomyosis was associated with fibroid uterus. Five cases of chronic cervicitis were confirmed with histopathology to be the same. One of these was associated with leiomyoma uterus and another was associated with adenomyosis. The other 2 specimens revealed cervical intraepithelial neoplasia (CIN). Two cases of postmenopausal bleeding were treated with TAH. None of them showed any evidence of malignancy during operation or on histopathology. Both revealed endometrial hyperplasia on histo-pathological examination. Clinical and final diagnoses were the same in all the cases of endometriosis, ovarian tumour and cervical polyp.

All the cases of clinically diagnosed ovarian tumour patients were finally diagnosed as the same with different histological types (Table IX).

Table IX. Histological types of ovarian tumour (n=5)

Histopathological finding	Number of patients	Percentage
Serous cyst adenoma	3	60
Mucinous cyst adenoma	1	20
Dermoid cyst	1	20

DISCUSSION

In this study, maximum patients (49%) were of age group 41-50 years. This was followed by less than 40 years age group (26%). Almost all other studies reported similar results with varying frequencies.¹⁷⁻²⁰ Average age of the study subjects was 45.3 years. Several other studies reported almost same average age whereas Medhi et al.²⁰ found it to be much lower (40.26 years).^{3,8,21,22} Majority of the women (73%) had 1-4 children and the finding is also supported by previous studies.^{17,19,23} Common presenting complaints were menorrhagia (56%), dyspareunia (37%), pain in lower abdomen (26%), irregular vaginal bleeding (21%) and abdominal lump (20%). Jaleel et al.⁸ and Medhi et al.²⁰ had similar observation in their studied subjects. In some other studies irregular vaginal bleeding was the most common presenting complaint.^{19,24}

Fibroid uterus was the most common indication in our cases followed by AUB-O and PID. In most of the previous studies fibroid uterus was the commonest indication of hysterectomy.^{6,8,20,21,25} Several studies have reported uterine fibroid as the most frequent lesion with the frequencies ranging from 25-48%,²⁶⁻²⁸ though most of the studies conducted in Western population revealed adenomyosis to be the next common finding after fibroid uterus.^{20,21,26,29,30} However Gupta et al.¹⁷ and Maresh et al.²⁴ reported AUB-O being the commonest indication followed by fibroid uterus. Fibroid uterus was the clinical indication in 48% cases in this study and histopathology confirmed this diagnosis in 39% hysterectomies indicating a slight

clinical overestimation whereas Bashir et al.³¹ observed clinical underestimation in their series. Histopathological confirmation was 79.16% for fibroids diagnosed clinically which is much lower than that found by Jaleel et al.⁸ and Gupta et al.¹⁷

Abnormal uterine bleeding due to ovulatory dysfunction (AUB-O) was the clinical indication in 16% cases but histopathological examination revealed no organic lesion in 18% cases. Frequencies of AUB-O in different studies are shown to vary from 14-31%.^{8,30-32} A recent study carried out at Ayub Medical College, Abbotabad showed AUB-O as the indication for hysterectomy in 38% women.²⁷ In this study among the clinically diagnosed cases of AUB-O, 87.50% were confirmed on histopathology to have no organic lesion. Rest of our AUB-O cases were actually found to show some pathology like fibroid and adenomyosis. Similar result is reported by Shergill et al.³², where adenomyosis, fibroid, polyps and endometritis were found on histopathology of clinically diagnosed AUB-O cases.

Next common cause of hysterectomy was PID in 9% of the cases and finally 12% cases were diagnosed to have the same. Another clinically underdiagnosed case was adenomyosis (clinically 3% vs. finally 7%). Women with adenomyosis and pelvic inflammatory disease often have nonspecific physical findings. Therefore, the confirmation rates are lower as shown in some prior studies.⁸

Endometriosis, ovarian tumour, chronic cervicitis and cervical polyp were more or less similar in frequency. All the cases of endometriosis, ovarian tumour and cervical polyp were 100% consistent in clinical and final diagnosis and is similar to previous studies.¹⁷ Five cases of chronic cervicitis were confirmed with histopathology to be the same and 2 other specimens revealed cervical intraepithelial neoplasia (CIN).

Western studies have documented a 20% prevalence of adenomyosis though in our study it was 7%.³⁴ Clinically 3% cases were suspected to have adenomyosis in our series. Similar observations were made in some other studies also where adenomyosis was the most common finding missed preoperatively.^{19,34,35}

In the present study an attempt has been made to evaluate to what extent the clinical diagnoses are consistent with the per-operative findings and the final diagnoses by histopathological examination of the

specimens. We have found that majority (84%) of preoperative diagnoses of our cases were confirmed on histopathology. Bano et al.¹⁹ reported a disparity between clinical and histopathological diagnosis ranging from 6-16%.

Conclusion

In a substantial numbers of studies, it has been postulated that there exists a disparity between preoperative diagnoses in the candidates for hysterectomy. As there are many a number of conservative and less invasive procedures are available in modern day gynaecological practice which can supplement the need for a major surgery like hysterectomy, it is of utmost importance for the clinicians to be more critical and precise in making this decision in order to avoid unnecessary surgeries.

Authors' contribution: SS designed the study, prepared, reviewed, and drafted the manuscript. SS did literature search SF and AN helped in data collection and reviewed manuscript. RSG reviewed the manuscript and helped in literature review. All authors read and approved final manuscript to be submitted.

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