ORIGINAL RESEARCH PAPER

Gynaecology

KEY WORDS:

SCORING SYSTEM AND FEASIBILITY OF SUCCESSFUL NON-DESCENT VAGINAL HYSTERECTOMY

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ABSTRACT

AIM :
The aim of the study was to review the limitations, major complications and conversion rates associated with NDVH and based on them to develop a scoring system for pre surgical assessment of women undergoing hysterectomy for benign gynecological conditions.

MATERIALS & METHODS :
This is a prospective study conducted in Thiruvarur medical college from August 2017 to August 2018 a conscious effort was made to perform as many NDVH with or without salpingo-oophorectomy , in benign gynecological conditions.

CONCLUSION :
Vaginal approach is best approach for gynecological surgeon than abdominal approach as VH done through a natural orifice.

INTRODUCTION

Hysterectomy is a most common surgery performed for gynecological disorder next to caesarean section. Hysterectomy rates vary from 1.2 – 4.8/1000 women.

The methods of hysterectomy are
- VH - Vaginal Hysterectomy
- AH – Abdominal Hysterectomy
- LAVH – Laproscopic Assisted Vaginal Hysterectomy vaginal route being the natural one, continues to be next preferred route for removal of uterus.

Vaginal Hysterectomy is associated with
- Less Fewer morbidities
- Lesser hospital stay
- Better patient satisfaction

Therefore this method is not restricted to uterovaginal prolapse but can be done for other indications
- Large uterine size
- Nulliparity
- Previous pelvic surgery
- LSCS
- Endometriosis and
- Ovarian Mass

With the introduction of LAVH in 1990, studies says that LAVH and superior in comparison to Abdominal Hysterectomy / Vaginal Hysterectomy, but with similar complications to Abdominal Hysterectomy & Vaginal Hysterectomy.

However LAVH has certain disadvantages
- Higher cost
- Expensive instruments
- Longer learning curve
- Morbidities depending on surgeon experience

But post operative recovery is similar to AH.

Vaginal removal of uterus in the absence of uterine descent commonly named as NDVH is popular for most benign conditions as uterus can be safely removed intact per vaginum.

Because of limited available space, removal of large uterus has always posed a great challenge to vaginal surgeons.

AIMS & OBJECTIVES

- The aim of the study was to review the limitations, major complications and conversion rates associated with NDVH and based on them to develop a scoring system for pre surgical assessment of women undergoing hysterectomy for benign gynecological conditions.
- The scoring system would enable to grade women as having low, intermediate or high risk for complications and conversion rates if subjected to vaginal hysterectomy and thereby predict the feasibility to perform a successful NDVH.

MATERIALS & METHODS

Methods:

The scoring system for assessment of successful NDVH based on Kovacs guidelines to determine the route of hysterectomy.

Materials and Methods:

This is a prospective study conducted in Thiruvarur medical college from August 2017 to August 2018 a conscious effort was made to perform as many NDVH with or without salpingo-oophorectomy , in benign gynecological conditions. Normally considered contraindications to VAGINAL HYSTERECTOMY like

- Large uterine sizes,
- Nulliparity,
- mild to moderate endometriosis,
- Previous pelvic surgery or caesarean section and
- Simple adnexal mass less than 6 centimetres were included in the study group.

Exclusion criteria:

- Uterine size greater than 18 weeks
- Complex adnexal masses
- Severe endometriosis
- Immobile uterus
- Suspected or diagnosed malignancies
- Women opting for abdominal route

A detailed risk analysis for each of these cases was done. Based on this and kovacs guidelines on determining the routes of hysterectomy, parameters were selected for a scoring system to predict the chances of a successful vaginal route of hysterectomy. The scoring system was applied for pre-operative assessment from August 2017 to predict the feasibility of successful NDVH.

The following parameters were considered for formulating the scoring system.

1. Accesssibility of the uterus transvaginal
2. Pathology not confined to the uterus
3. Pelvic adhesions

Parameters : Score of 1 to 6 for minimum to maximum risk for conversion

Mobility of Uterus	Mobile – 1			Restricted - 6
Narrow	more than 2 finger - 1			Less than 2 finger - 6

Uterine size	Less than 12 weeks – 1	12-16w-2	16-18w-3	Broad uterus - 6
Endometriosis	No-1	Mild – 2		Moderate – 6
Removal of adnexa /mass	No-1	Yes -2	less than 6cm – 3	More than 6 cm – 6
Post LSCS	None – 1	1 PCS – 2		2 PCS – 2
Puckering of POD	Absent -1			Present – 6
Min score – 7	Safe score 7-11	Mod risk on conversion - 12-16	High risk more than 16	

REVIEW OF LITERATURE

Based on evidence Vaginal Hysterectomy is preferable route in terms of safety and overall outcome when compared to LAVH & AH (American) Committee No. 2009. ACOG College of Obstetrics & Gynaecology, out of 3 routes, vaginal route is safety, least invasive, economical and cosmetic.

Cochrane review of 34 RCT's (Randomised controlled trials) including 4495 patient (2009). Every hysterectomy should be planned primarily by vaginal route unless contraindicated. Limited available space in vagina, removal of large uterus posed great challenge to vaginal surgeons.

1) DEBULKING

It means reducing the size and volume of uterus to facilitate its delivery. For great surgeons, uterine morcellation or debulking by various methods offer a simple and efficient way to complete the vaginal procedure without undue difficulty. Debulking procedure is used when there is;

- Uterine enlargement (>14 weeks)
- Adnexal fixation.
- Obliteration of pouch of douglas.
- Limited vaginal exposure.

Uterine Volume Assessment

When Uterus is 8-10 weeks size - it is more than 150-200 cm3 in volume, it is found that volume is desirable than size.

Size is measured as gestational fundal height and can lead to unexpected difficulty during vaginal hysterectomy. So, volume is best measure of uterine size than fundal height.

Uterus less than 10 weeks size or volume less than 200 cm3 rarely needs debulking.

When uterus more than 12-14 weeks size or 250-350cm3 volume – requires debulking.

The Institute for health and clinical excellance guidelines says that only indication for AH is size >18 weeks size.

Pre Operative Assessment

- Detailed clinical history
- Physical Examination
- Abdomino Pelvic Examination
- Uterine Size
- Mobility in all directions
- Laxity or rigidness of tissues
- Uterine scar
- Length of vaginal cervix
- Absence of adnexal pathology is very essential
- Investigation
- CBC, RFT, LFT / Basic Investigations
- Serology
- Blood Grouping & Typing
- Pap Smear
- Ultrasound

- Ultrasound is economical tool for these cases. Preferably transvaginal ultrasound is very important in cases requiring debulking.

Ultrasound gives information of

- Uterus length, width and volume
- Endometrial assessment especially in postmenopausal women
- Size, location and number of fibroid especially for large fibroids
- Differentiates fibroid from adenomyosis
- Look for adnexal pathology
- Differentiate ovarian mass and broad ligament myoma.

MRI referred for difficult cases only

Prerequisites for NDVH & Uterine debulking if required

- No contraindications for vaginal route except for size
- Detailed preoperative counseling with informed content.
- Consent for switch over to laproscopic assistance or laparotomy if required.
- Favourable clinical and ultrasound finding
- Absence of endometrial pathology (malignancy)
- Both uterine arteries ligated before debulking.

DEBULKING PROCEDURES

- Uterine Bisection
- Lash procedure (Intra myometral coring)
- Wedge resection
- Myomectomy
- Core enucleation (Doyen's method)

International Journal of Reproductive contraception obstetrics and gynecology – 2015; 4(1) ; 61-65.

A total of 105 cases were selected for NDVH. All 105 patient successfully underwent, NDVH. Commonest age group was (41-45 years) i.e., 48.6%. All patients were parous. Uterine size was <8 weeks in 72 cases, > 8 weeks in 33 cases.

Common indication was AUB (45.7%). Mean duration of surgery was 90 min's. Mean Blood loss – 205ml. Most common complication was post operative pain in 21.9% cases.

Febrile morbidity was 9.5% Blood transfusion was required in 4 cases. Average duration of hospital stay was 4 days.

BJOG – An international journal of obstetrics and gynecology

3 methods for hysterectomy
A randomized prospective study of short term outcome.

A traditional VAGINAL HYSTERECTOMY proved to be feasible and faster operative technique compared with VAGINAL HYSTERECTOMY with laproscopic assistance.

AH – is required on average of long hospital stay of 1 day to 1 additional weck of convalescence. Compared with AH, vaginal hysterectomy should be primary method for uterine removal.

VAGINAL HYSTERECTOMY at JOS University teaching hospital, JOS, Nigeria.

Journal of West African college of surgeons 2011; 1(3) ; 26-36.

Hysterctomy can be performed through vaginal as an open procedure or preceded by laproscopy. Superiority of vaginal route is highlighted. When women who underwent vaginal hysterectomy experience significantly fewer complications when compared to others who had AH.

American Journal of Obstetrics Gynaecology 1998 Dec (179(6)) 1473-8.

Vaginal Hysterectomy in women with history of previous caesarean delivery. This study aimed to compare surgical outcome with vaginal hysterectomy between women who had more than or equal to 1 caesarean section and these who had not LSCS.

In this study concluded that women with previous LSCS is not at risk of increased peri-operative complication when undergoing Vaginal Hysterectomy.

BJOG 2003 Dec; 110(12) 115-9. Purohit technique of VAGINAL HYSTERECTOMY, a new approach (99.53%
VAGINAL HYSTERECTOMY was successfully completed in 213 cases with 1 failure (0.46%). So many LAVH to AH are avoided by this technique. Purohit technique of VAGINAL HYSTERECTOMY using right angled forceps, electrocautery and 10mm telescope with light source.

Othosen, BJOG 2000 Nov; 107 (11) 1380-5
3 methods of hysterectomy – a randomized prospective study of short term outcome.

- RCT
- 130 patients scheduled for hysterectomy for various indications
- Traditional VAGINAL HYSTERECTOMY group proved to be feasible and faster operating time compared to VAGINAL HYSTERECTOMY with laproscopic assistance.
- AH was some what faster but time spent in theatre was shorter
- AH required a longer hospital stay

Otah K.S. Khalilm
European Journal of obstetrics and gynaecology, April 2006. Changing the routes of hysterectomy

- The results of policy attempting vaginal approach in all cases of DUB.

- To assess the efficacy of policy of performing VAGINAL HYSTERECTOMY for all many as DUB with out prolapse bet 1997-203.

- The vaginal approach is possible for average gynec working with no additional complications and with recovery rate for patients.

Guidelines to determine the route of hysterectomy KOVAC SR, Obs Gynec 1995 Jan; 85(1); 18-23.
618 increased assigned for hysterectomy on the basis of uterine size, risk factors to mobility of uterus.

Data regarding success of procedure, complications, length of hospital stay and conference and hospital charges were complied.

ACOG committee opinion No-444
Choosing the route for hysterectomy for benign diseases. Hysterectomy was performed vaginally, abdominally or laproscopically or robotic assistance. When choosing the route and method of hysterectomy, te physician should take consideration that procedure should be performed effectively and safety to meet needs of patient. Evidence says VAGINAL HYSTERECTOMY has fewer complications with better outcome than abdominal and laproscopic, When it is not feasible to perform VAGINAL HYSTERECTOMY, surgeon must choose laproscopic / robotic / AH.

RESULT AND STATISTICS
The scoring system was applied for pre surgical assessment of women undergoing hysterectomy for benign conditions from Aug2017 – Aug 2018 100 cases was studied -> scoring system was applied.

Intra op complication had never happened in any of the cases and No conversion to AH.

Mobility of uterus
Vaginal breadth at apex.
If vagina admits >2 finger- score -1
If vagina admits <2 finger- score -6.
In our study- All 100 cases shows that vaginal breadth at apex > 2 fingers-score-1.

- **Uterine size**

Uterine size is another important parameter in the scoring system.
When Uterine size
<12 Weeks - Score - 1
<12-16Weeks - Score - 2
<16-18Weeks - Score - 3
Broad uterus - Score - 6

In our study, out of 100 cases,
<12Weeks - Score – 1 -77 cases,
<12-16Weeks - Score – 2 -23 cases.

- core enucleation.

All cases are successful without any intraoperative complication and conversion rate to AH.

- **Endometriosis**

Score of 1 – for Absent Endometriosis
Score of 2 – for mild Endometriosis
Score of 6 – moderate Endometriosis

In our study is 100 cases , there was no Endometriosis and score was 1.

- Removal of adnexal mass

In scoring system, If no Removal of adnexa – score of 1
Removal of adnexa attempted – score of 2
If size of adnexal mass <6cm – score of 3
If size of adnexal mass >6cm – score of 6.

In our study in 100 cases , Removal of adnexa not done and score of 1 is given.

- **Post LSCS**

If No LSCS done – score of 1
1 LSCS done – score of 2
2 LSCS done – score of 6

In our study, in 100 cases, AUB With previous 2LSCS coal 3 cases – score of 6.

Previous 1LSCS was 1cases – score of 2.

Even with previous 2 LSCS , when NDVH is attempted , there is success of procedure as the total score was within the safe score 7-11.

Post LSCS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	91	91.0	91.0	91.0
	2	7	7.0	7.0	98.0
	6	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

- **Puckering of POD**

If no Puckering , score of 1
If Puckering is present , score of 6.

In our study of 100 cases – No puckering of POD Encountered as score of 1.

Puckering of POD
Thus minimum score was - 7
Safe score - 7-11
Moderate Risk of conversion - 12-16
High Risk - >16

In our study 100 cases
98 cases within safe score -> 7-11
2 cases in upper limit of moderate risk of conversion ->12.
No cases is high risk >16.

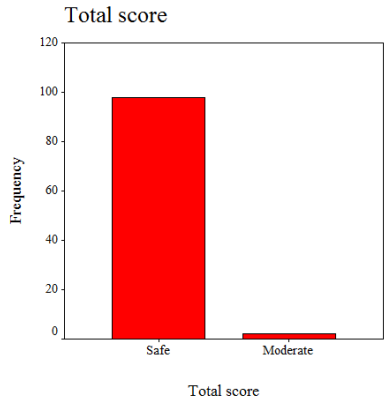
Total score

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	7	69	69.0	69.0	69.0
	8	29	29.0	29.0	98.0
	12	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

Total score

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Safe	98	98.0	98.0	98.0
	Moderate	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

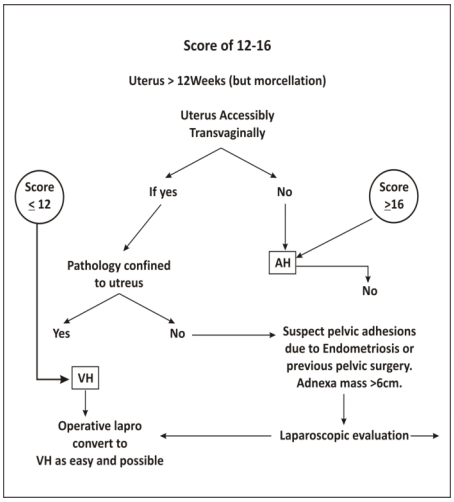


	Observed N	Expected N	Residual
Safe	98	50.0	48.0
Moderate	2	50.0	-48.0
Total	100		

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Mobility of uterus	100	1	1	1.00	.000
Vaginal breadth at apex	100	1	1	1.00	.000
Uterine size	100	1	2	1.02	.141
Endometriosis	100	1	1	1.00	.000
Removal of adnexa	100	1	1	1.00	.000
Post LSCS	100	1	6	1.17	.739
Puckering of POD	100	1	1	1.00	.000
Total score	100	7	12	7.39	.803
Valid N (listwise)	100				

Fig-1 Algorithm for deciding the optimal route and method of hysterectomy score of 12-16



DISCUSSION

As Cochrane review concluded that VH is far superior than AH/LAVH.When NDVH not possible, LAVH has advantage over AH. Complications and conversion rate in our study was none when compared to other studies, as were they need for conversion.

By using simple scoring system Kovacs guidelines pre surgically and this helped as to classify women undergoing hysterectomy for benign conditions into;

Low < 11
Intermediate
High Risk > 17

Low risk group can undergo safely NDVH, High risk group should undergo only AH.

CONCLUSION

Vaginal approach is best approach for gynecological surgeon than abdominal approach as VH done through a natural orifice. Where as AH done through surgically created approach. By Kovac guidelines, a simple scoring system helped better assessment of women pre-surgically before undergoing hysterectomy for benign conditions and for deciding better feasibility to perform NDVH. Complication and conversion rates has been decreased by to this scoring system.

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