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Research Article

Clampless non descent vaginal hysterectomy: “A novel art”

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ABSTRACT

Background: Objective of this study was to assess feasibility and safety of clampless non descent vaginal hysterectomy of uterus up to 16 weeks size and identifying factors that determine success of surgery.

Methods: Study was conducted in 50 women with non-prolapsed uteri, with clear cut indication of hysterectomy for a benign cause, without suspected adnexal pathology. Operating time, estimated blood loss, surgical techniques, difficulties encountered during operation, operative and post-operative complications and conversion to laparotomy when needed were recorded.

Results: Vaginal hysterectomy was successful in 47 cases. Bisection was required in 60% cases, myomectomy in 24% cases and morcellation in 16% cases. Amount of blood loss and operating time was proportional to size of uterus.

Conclusions: Clampless non descent vaginal hysterectomy is a safe and effective procedure and for success not only size of the uterus but its all dimensions and location of fibroid should be taken into consideration.

Keywords: Myomectomy, Bisection, Morcellation, Debulking

INTRODUCTION

Today is the era of minimally invasive endoscopic surgery. People are doing more and more Laparoscopic Assisted Vaginal Hysterectomy (LAVH) or Total Laparoscopic Hysterectomy (TLH) for different indications. In the last decades “Non Descent Vaginal Hysterectomy” (NDVH) has made a distinct place among LAVH, TLH and Abdominal Hysterectomy (AH). NDVH has proved many advantages over LH/LAVH/AH. But this is also fact that NDVH has also certain limitations, difficulties (encountered by surgeon) during surgery and few disadvantages also. Clampless NDVH, is an art, which is one step ahead in making the procedure easy and decreasing the limitations and disadvantages of NDVH. Evidences now clearly

demonstrate the advantages of Vaginal Hysterectomy (VH) over Abdominal Hysterectomy (AH)/LAVH/TLH.¹ Therefore it is the demand of today that every gynaecologist should learn this art. Therefore if VH is achievable, it is the superior operation to both AH and LAVH.² The long list of contraindications of vaginal hysterectomy have now shrunk to few.

Objective

This study was conducted with the objective of assessing feasibility and safety of clampless non-descent vaginal hysterectomy of uterus up to 16 weeks size and identifying factors that determine the success of surgery.

METHODS

This study was conducted in fifty patients with non-prolapsed uterus with clear cut indication of hysterectomy for a benign cause (other than prolapse of uterus) between January 2014 to 2015 March. We had followed the following criteria for selection of patients.

(i) Clear cut indication for hysterectomy for a benign cause, (ii) Mobility of uterus should not be restricted, (iii) Any adnexal pathology excluded by preoperative USG of pelvic organ (Transabdominal/ EVS, as per the case) (iv) Uterus >16 weeks size excluded from the study, (v) Cases of genital malignancy, inaccessible cervix and uterovaginal prolapse excluded from the study, (vi) Proper assessment of vaginal space before selection of case (Vaginal inaccessibility defined as intertuberous diameter of less than 9 cm along with a sup-pubic angle of less than 90° and a vagina of less than two finger calibre). Demographic factors like age, parity, socio-economic status were recorded. Every case were once again reassessed under anaesthesia. This included size, mobility, descent of uterus, depth of vaginal fornix, mobility of cervix, mobility of vaginal mucosa and vaginal accessibility.

During surgery we had also included the lateral vaginal wall in the first clamp. The first clamp included uterosaoral ligament, Mackenrodt’s ligament as well as lateral vaginal wall. This helped in vault support. The uppermost stump at cornua was attached to the vault, which helped in suspending the vault to lateral pelvic wall. One school of thought is that this cornual stump should not be fixed to vault because it may cause chronic backache. But in our previous series of study of forty cases of NDVH,³ which we followed till three years following hysterectomy we could not get such complain.

RESULTS

In our study the patients were between the age group 32-52 years, maximum being between 38-45 years (62%). There were three nulliparous patients, rest were multiparous, a favourable factor for vaginal hysterectomy. Out of 50 cases in the study, 5 cases had previous LSCS. One of them had bladder injury, while opening the uterovesical pouch. In rest four of cases of previous LSCS “lateral window approach” was taken, as usually dense adhesion was encountered in mid line. Bladder injury was repaired from vaginal route. In our study, Dysfunctional Uterine Bleeding (DUB) was most common indication for hysterectomy followed by fibroid uterus. All cases were performed, with routine instruments required for vaginal hysterectomy. No special instrument was used. Out of 50 cases, 44 were done in spinal anaesthesia, 2 under epidural anaesthesia and 4 under general anaesthesia. Decision of type of anaesthesia was taken by anaesthetist. The operating time, estimated blood loss, were directly proportional to the size of uterus (Table 5). Forty four percent of women

had weight below 58 kg. Forty percent had weight between 58-65 kg. Fourteen percent had body weight between 65-75 kg. Two percent had weight above 75kg. All successful cases were discharged before 96 hrs. Three cases (in which laparotomy were required) were discharged on 7th day. Eighty percent of women were ambulatory between 12-24 hrs. Bilateral Oophorectomy was done in 6 cases, unilateral Oophorectomy in 4 cases and both Ovaries were preserved in rest of cases. For Oophorectomy, first ovarian ligament was sutured and cut. In one case ileum was adhered to left cornua, uterus was 14 weeks size and ileal loop was injured. This was repaired by laparotomy, resection and anastomosis. Post-operative period was uneventful in this case. Also in two cases where conversion to abdominal hysterectomy was done it was found easier to repair the vault from below because of good exposure. No significant problems were encountered in first 24 hours (complaints were mild to moderate pain and nausea, vomiting). Problems within 7 days were mild pain (35 cases), fever (4 cases), problem in urination (4 cases), reddish discharge (in 14 cases), spinal headache (2 cases). Problem after 1 month was mild pain in 16 cases and vault granuloma in one case.

Table 1: Indications of clampless NDVH.

Indications of hysterectomy	No. (N=50)	%
DUB	20	40
Fibroid	15	30
Adenomyosis	10	20
Others	5	10
Total	50	100

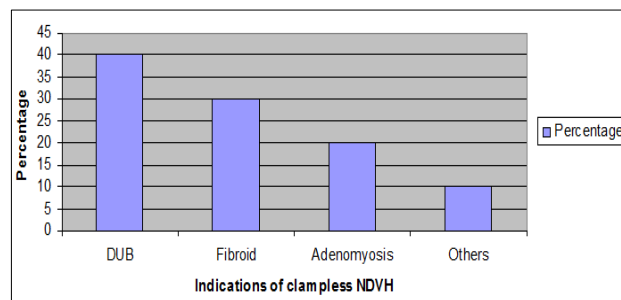


Figure 1: Indications of clampless NDVH.

Table 2: Size of uterus.

Size of uterus	No. (N=50)	%
6 weeks	20	40
8 weeks	10	20
10 weeks	3	6
12 weeks	14	28
14 weeks	1	2
16 weeks	2	4
Total	50	100

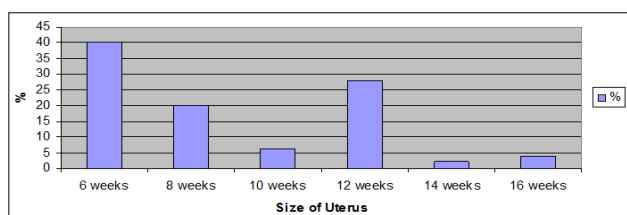


Figure 2: Size of uterus.

Table 3: Surgical procedure performed.

Surgical procedure performed	No. (N=50)	%
Bisection only	30	60
Bisection myomectomy	12	24
Bisection debulking (Morcellation)	8	16
Total	50	100

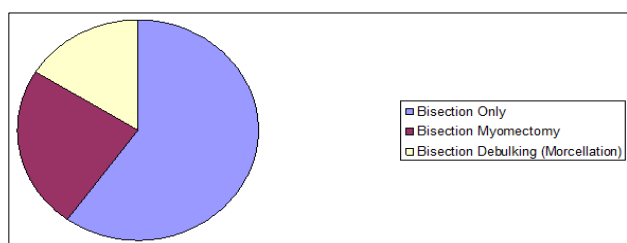


Figure 3: Surgical procedure performed.

Table 4: Intraoperative problems.

Intraoperative problem	No. (N=50)	%
Uneventful	35	70
Difficulty in opening anterior pouch	2	4
Difficulty in opening posterior pouch	3	6
Primary bleeding	6	12
Bladder injury	1	2
Intestinal injury	1	2
Conversion to abdominal hysterectomy	2	4
Total	50	100

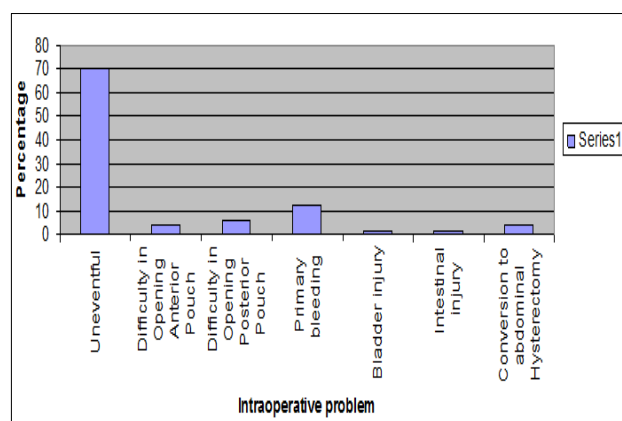


Figure 4: Intraoperative problems.

Table 5: Size of uterus and its effect on outcome.

Size of uterus in weeks	No. of patients (N=50)	Blood transfusion in units	Conversion to laparotomy	Blood loss in ml (Mean ± SD)	Operating time in min (Mean ± SD)
6 weeks	20	Nil	Nil	75.03 ± 22.84	44.96 ± 15.30
8 weeks	10	Nil	Nil	76.82 ± 20.04	46.32 ± 15.40
10 weeks	3	Nil	Nil	79.96 ± 30.02	50.72 ± 16.32
12 weeks	14	5	2	160 ± 30	60.00 ± 20.20
14 weeks	1	1	1	410	61.84 ± 14.20
16 weeks	2	2	Nil	460 ± 20.26	72.92 ± 16.82

DISCUSSION

Today people are doing more and more laparoscopic surgery - total laparoscopic hysterectomy and Laparoscopic Assisted Vaginal Hysterectomy (LAVH). Total laparoscopic hysterectomy/LAVH has many advantages over conventional abdominal hysterectomy like:

- Cosmetically accepted, only scar of 3/4 ports.
- Lesser post-operative morbidity.
- Early discharge.
- No chance of incisional hernia.

But it is not cost effective, it requires costly set up, costly disposable instruments trained and expert team plus because of heavy operation charges, it is not within the reach of majority of patients in our Indian scenario. So here stands the place of NDVH/clampless NDVH. Advantages of NDVH over conventional abdominal hysterectomy and laparoscopic hysterectomy (Total/LAVH) are:

- No scar, not even scar of ports.
- Less operative time.
- Less intraoperative bleeding.
- Less post-operative morbidity.

- Early discharge (so hospital bed turnover will be more).
- No extra set up cost, only conventional instruments are required.
- No trained assistant.
- No questions of incisional hernia.

But NDVH has also its limitations. In case of enlarged uterus, especially when its transverse volume is more, there is problem of exposure and many difficulties are encountered while applying the clamp because there is no space/very less space available lateral to uterus. So here is the place of clampless NDVH. Here we secure the stump with polyglycolic acid No. 1 suture, without applying the clamp, and then cut it.

When a decision has been made to perform a hysterectomy for benign indications, a surgeon has many options like Abdominal Hysterectomy (AH), Vaginal Hysterectomy (VH), total laparoscopic hysterectomy or Laparoscopically Assisted Vaginal Hysterectomy (LAVH). The available evidences show that VH has less morbidity and reduced hospital stay than AH, and that LAVH is for more expensive with no added benefits in morbidity than VH. This clearly implies that VH should be the first option (whether descent present or not), nevertheless, all large scale surveys have shown that 70-80% of hysterectomies are performed abdominally.⁴ Now-a-days uterine size, absence of uterovaginal prolapse, previous surgery and need for oophorectomy are no more contraindications for vaginal hysterectomy.

The main supports of the uterus are uterosacral and cardinal ligament. These can be very easily approached and divided to produce descent from below. We found this step very useful in obese women, with excessive fat in lower abdomen. While doing AH in such obese patients, we face a lot of difficulty while putting clamp at an angle and while suturing vault, due to working in depth and frequent encroachment of gut in operative field. In our study 2% patients were above 75 kg weight. So in obese women vaginal hysterectomy can be easily and successfully performed.⁵ There is no evidence that nulliparity is a risk factor for increased morbidity at VH.⁶ The principle of the fear of performing VH in nulliparous women is a lack of uterine descent, which is not a contraindication to VH. In our study two (5%) patients were nulliparous with uneventful surgery and post-operative period.

In case of myoma, while doing clampless NDVH, most of the myoma were enucleated while doing bisection of uterus (30 cases) and many are morcellated (8 cases) also. But the problem was encountered at fundal myoma, which could not be approached from below for "Volume reduction surgery" Also when myoma extends to broad ligament, it poses problem to go beyond the extension of myoma and take suture laterally. Also previous history of PID or perforation of uterus cases, posed problem in opening the anterior and posterior pouches.

Now big and bulky uteri can be dealt with by techniques like bisection, myomectomy and morcellation. Davies et al.⁷ and Mazdisnian et al.⁸ described these techniques. We could remove uteri upto 16 weeks uterine size, vaginally by clampless NDVH. Similar findings are reported by Unger JB,⁹ who operated upon uteri-weighing 200-700 gm, without any complication as compared to abdominal hysterectomies. Complications in our study also are only few and that too minor. Kumar and Antony¹⁰ successfully carried out vaginal hysterectomy in 76% of fibroid uteri. They considered VH safe up to 12 weeks size. Das and Sheth¹¹ used ultrasonographic calculations of uterine volume for assessing the feasibility of vaginal hysterectomy. They needed debulking for a volume of more than three hundred centimeter cube.

On analysing parameters contributing to success of the surgery or its failure it was seen that not only size of the uterus but all dimensions must be taken in to consideration. A uterus with a fibroid of 10 weeks size may have a transverse and antero posterior diameter of a 12-14 weeks pregnant uterus. So the transverse and anteroposterior diameter of a non-pregnant uterus may not correspond to that of a pregnant uterus. One more important point is location of fibroid. Fundal location of fibroid makes the shape of the uterus globular and may prevent its descent. If location of fibroid is lateral, it will present difficulty in suturing uterine arteries. The angle between the lateral cervical surface and ascending uterine wall from the cervix is important. The lesser the angle the more difficult it is in obtaining access and applying suture. The cases which were unsuccessful through the vaginal route, completed with great ease abdominally because main supporting ligaments had already been cut and sutured vaginally to produce mobilization. Also there is no increased blood loss or major post-operative complications in these conversions from vaginal to abdominal route. Since patients suffer little added morbidity with failure of vaginal route, it should be tried in all patients who have no contraindications. This finding was similar to that of Mazdisnian.

CONCLUSION

Learning curve for any gynecologists should be like - at first acquire expertise in conventional vaginal hysterectomies, then move to do more and more NDVH and finally to clampless NDVH. Failure cases of clampless NDVH can be managed easily by LAVH/Conventional abdominal hysterectomy.

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