JOURNAL OF GYNECOLOGIC SURGERY
Volume XX, Number 0, 2013
© Mary Ann Liebert, Inc.
DOI: 10.1089/gyn.2012.0082

Original Article

Vaginal Hysterectomy by Electrosurgery for Benign Indications Associated with Previous Cesarean Section

Ram Krishna Purohit, MD, Jay Gopal Sharma, MS, Sarabjeet Singh, DGO, and Dipak Kumar Giri, MD

Abstract

Background: Vaginal hysterectomies have been associated with difficulties in patients who have had cesarean sections prior to such hysterectomies. However, the Purohit technique may obviate the problems and make it easier to perform these operations. ***Objectives:*** This research tested an approach designed to facilitate vaginal hysterectomy in patients with previous cesarean sections in the absence of fixed adhesions of uterine corpi to previous anterior abdominal scarring. ***Design/Method:*** An observational study was conducted in a private general hospital between February 2010 and June 2012. All candidates for hysterectomy for benign indications who had had previous cesarean sections were examined for the presence of clinical and sonographic signs of fixed adhesions of uterine corpi to anterior abdominal-wall incisions caused by prior cesarean sections. Candidates who had such adhesions were not given vaginal hysterectomies. ***Results:*** Sixty-four (64) consecutive candidates were selected for vaginal hysterectomies. Of these patients, 26 (40.62%) had 1 cesarean section, 33 (51.56 %) had 2 cesarean sections, and 5 (7.81%) had 3 cesarean sections. Four (4) patients had had prior pelvic operations. The uteri were smaller than 12 weeks' gestation-size in 62 (96.87%) cases. In 26 (40.62 %) cases, there were no obstruction to accessing the anterior *cul-de-sacs* and vaginal hysterectomies were performed using the Purohit technique. In 38 (59.37 %) cases, dense uterovesical adhesions obstructed access to the anterior *cul-de-sacs* and a posterioanterior approach was used to perform vaginal hysterectomy in these patients. Vaginal hysterectomy was completed in all 64 cases. Vaginal salpingo-oophorectomy was performed in 3 (4.68%) cases. The mean operative time was 78.59 ± 33.15 (35–190) minutes. The mean weight of specimen uteri was 161.01 ± 108.87 (50–550) g. No patients needed conversions or blood transfusions. No patients had bladder, ureteric, or thermal injuries. Finally, there were no other major postoperative complications. ***Conclusions:*** In the absence of fixed adhesions of the uterine corpus to previous anterior abdominal scarring, vaginal hysterectomy for benign indications associated with previous cesarean section may be accomplished safely. The posterioanterior approach during vaginal hysterectomy may avoid unintended bladder injury in the presence of dense uterovesical adhesions caused by previous cesarean sections. (J GYNECOL SURG XX/1)

Introduction

VAGINAL HYSTERECTOMY FOR BENIGN INDICATIONS is gaining interest. Because of the increased rate of cesarean sections, the number of women requesting hysterectomies associated with cesarean sections is also increasing. Previous cesarean section has been considered to be a relative contraindication to vaginal hysterectomy. Previous cesarean section associated with dense uterovesical adhesions has been recognized as a significant risk factor for unintended cystostomy during hysterectomy by all routes.[1–4] Previous cesarean section increases the perioperative risk for hysterectomy by vaginal route.[5]

Inadequate accessibility and visibility caused by insufficient space for thick clamps and suture ligation posed difficulties during attempted vaginal hysterectomy in patients with previous cesarean sections. Use of bipolar forceps for hemostasis and right-angle forceps to delineate anatomy, as well as use of fiberoptic cables, as done in the Purohit technique for vaginal hysterectomy,[6] may improve visibility, accessibility, and ease of vaginal hysterectomy in such cases. Many more vaginal hysterectomies associated with cesarean section may be attempted easily.

Conventional careful dissection of the bladder from the uterus in patients with dense uterovesical adhesions caused prior cesarean sections has still been responsible for causing a fear of unintentional bladder injuries during vaginal hysterectomies[1,5,7] and in the vaginal phase of laparoscopic-assisted vaginal hysterectomies.[8] Unintentional bladder injury increases morbidity.[9]

Department of Obstetrics and Gynaecology, Purohit General Hospital, Shakti Nagar, Bargarh, Odisha, India.

Instead of making a direct attempt to perform careful dissection in the uterovesical space, the current authors formulated an indirect posterioanterior approach during vaginal hysterectomy; this approach (the Purohit technique) is described later in this article. The objective of this approach was to mobilize all of the dense uterovesical adhesions intact, from their higher level down to the level where direct tactile palpation by the surgeon was possible. The next step was to thin out the thick uterovesical adhesions, layer by layer, under direct vision, to differentiate and dissect the bladder away from the uterus. The overall purpose of this refinement was also to facilitate the approach and minimize chances of unintentional bladder injuries during vaginal hysterectomies in patients who have had prior cesarean sections and who had dense uterovesical adhesions.

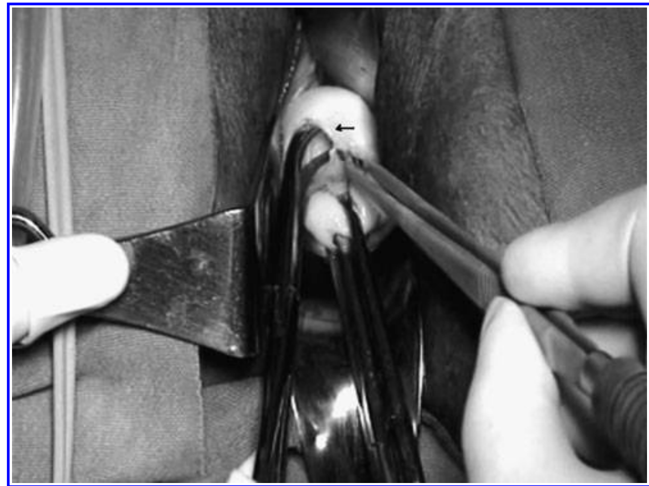

FIG. 1. The supravaginal septum (arrow) is stretched between the prongs of a right-angle forceps. Bipolar coagulation forceps are close to the cervix.

Materials and Methods

An observational study was conducted in a private general hospital between February 2010 and June 2012.

Inclusion criteria and consent

All candidates for hysterectomy for benign indications who had had previous cesarean sections were examined for clinical and sonographic signs[10–12] of fixed adhesions of uterine corpi to anterior abdominal-wall incisions made for the prior cesarean sections. Candidates who had such adhesions[10–12] were excluded from undergoing vaginal hysterectomy. There were no other exclusion criteria for the other candidates.

Written informed consent was obtained from each patient. An institutional ethics committee reviewed and approved the study. Selected candidates were allowed to undergo vaginal hysterectomies.

Outcomes sought

The primary outcomes of interest were the success of vaginal hysterectomies and the number of unintended cystostomies resulting from separation of the bladders from the uteri.

Secondary outcomes were the need for conversion to laparotomy and other intraoperative and postoperative complications.

Procedures

Each patient was positioned for dorsal lithotomy, flexing the thigh toward the abdomen. Vaginal hysterectomy was started, using the Purohit technique.[6,13] Figure 1 shows the vaginal walls separated from the cervix by applying a monopolar current (40 Watts). The lower part of the cardinal ligament of $\sim$1 cm on the right side of the cervix was separated from the cervix, after bipolar coagulation (applying a 50-Watt current) to create a split. Through the split, the tip of a closed-right angle forceps was inserted anteromedially between the anterior wall of the cervix and the vaginal wall (lateral application of the right-angle forceps). Prongs of the right-angle forceps were opened to stretch and spread the supravaginal septum (Fig. 1). The septum was coagulated close to the cervix and divided by scissors allow entry into the vesicocervical space.

Separation of the remaining portion of vesicocervical–cardinal ligament from the cervix extraperitoneally was performed after bipolar coagulation exposed the bulge of the uterine artery. The uterine artery was coagulated by a bipolar current and divided extraperitoneally between the prongs of the right-angle forceps.[6,13] The above procedures were repeated on the opposite side to secure the uterine artery and to enhance uterine descent.

Then the posterior *cul-de-sac* was opened. The uterosacral ligament and the posterior leaf of the broad ligament, up to the level of the stump of the uterine artery on either side of the uterus, were gradually stretched between the prongs of the right-angle forceps, coagulated, and separated by scissors to enhance the descent of the uterovesical space toward the surgeon. Adhesions in the uterovesical space were dissected—layer by layer, using the tip of the right-angle forceps—from their lateral aspects to enable visualization of the uterovesical fold of the peritoneum. Then the anterior *cul-de-sac* peritoneum was entered and the vaginal hysterectomy was continued, again, using the Purohit technique.[6,13]

When dense vesicouterine adhesions obstructed the accessibility of the anterior *cul-de-sac*, blurred the anatomical planes, and raised concerns about the potential for bladder injury during careful dissection with scissors,[7] the attempt to access the anterior *cul-de-sac* using anterior vesicouterine dissection was stopped. Then, a posterioanterior approach was started, to bring the whole uterovesical adhesion down to the level where direct tactile palpation of its contents by the surgeon was possible for differentiating the anatomy.

The cervix was split at the midline. Bisection incision was stopped just below the level of the thick vesicouterine adhesions. The incision of the posterior uterine wall was progressed cranially. Wedge morcellation beneath the serosa was performed to reduce the width of the posterior wall of the uterus. Long single-tooth tenaculums (26 cm) were useful for moving upward on the incised margin. Decompression of the posterior uterine wall and fundus mobilized the broad ligament and ovarian ligaments medially. The residual portion of the posterior leaf of the broad ligament on either side was separated from the uterus to enhance descent of the uterus.

Forward and outward traction of the upper incised margin of the posterior uterine wall at this stage exposed the deeply

placed white ovarian ligament. The ovarian ligament was hooked by the bend of the right-angle forceps from its posterior aspect, spread between its prongs, coagulated close to the uterus (Fig. 2), and divided by a pair of scissors. The above procedure was repeated on the opposite side to detach both ovarian ligaments from the uterus. Deaver's retractors (2.5 cm in width) and a pelvic illuminator (Kalelker Surgicals, Mumbai, India) with a fiberoptic light source were used occasionally to improve visibility[6] at this step of the procedure.

Wedge morcellation beneath the serosa was repeated to reduce the bulk of the corpus above the level of the ovarian ligaments. Forward and outward traction of the upper incision margin of the remaining portion of the posterior wall, using Allis forceps, exposed the uterine end of the pink tube and round ligament. The tube and round ligament were hooked by the bend of the right-angle forceps from their posterior aspects and were separated from the uterus, using the same technique mentioned above for the ovarian ligament. The opposite-side tube and round ligament were similarly separated from the uterus.

Separation of upper pedicles bilaterally dropped the anterior uterine wall with uterovesical adhesions, bladder pillars, and the anterior leaf of the broad ligament further down toward the surgeon. Omental adhesions, if any present at this stage, were separated from the fundus of the uterus. Then the surgically freed fundus was excised to reduce the length of the anterior uterine wall.

At this stage, the vesicouterine fold of the peritoneum was visible through the posterior peritoneal opening. The anterior *cul-de-sac* was palpable, by sweeping an anteriorly bent index finger that was inserted through the posterior peritoneal opening.

Forward and outward traction of the incised cranial margin of the anterior wall by the surgeon at this stage, made it possible to see the thick bands of scarring of the broad ligament above the level of the lower-segment cesarean section scar. Until this stage, these bands of scar tissue had contracted and pulled the uterovesical space up.

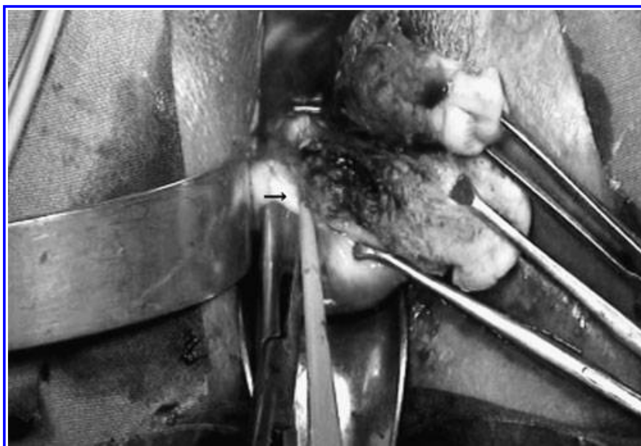

FIG. 2. Right ovarian ligament (arrow) stretched between the prongs of a right-angle forceps. Bipolar coagulation forceps (22-cm long with a tip width of 2 mm) are close to the uterus. Allis forceps are shown, at the lowest part of this photograph, retracting the upper incised margin of the posterior uterine wall to expose the ovarian ligament.

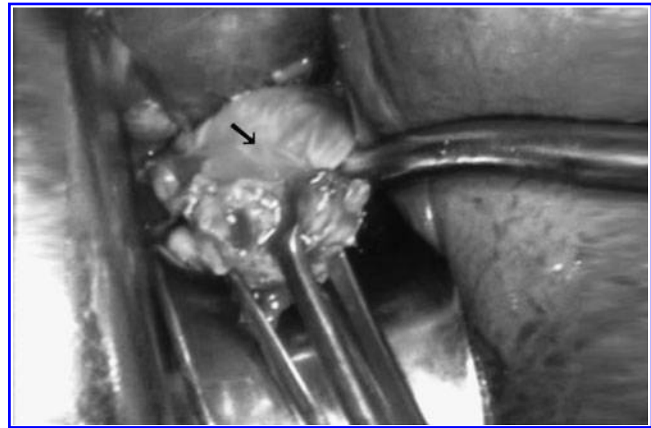

FIG. 3. Fixed cohesive uterovesical adhesions (arrow). Allis forceps are shown retracting the residual portion of the uterine wall.

These tough anterolateral adhesions were approached, layer by layer, by the tips of the right-angle forceps that were inserted from the adhesions' lateral aspect. They were separated bilaterally from the uterus by the same technique mentioned above for the broad ligament to enhance descent of the remaining central portion of the vesicouterine adhesions.

The vesicouterine adhesions were palpated directly between anteroposteriorly placed index fingers of both hands. The thick fibrous vesicouterine fold of the peritoneum was differentiated from the firm uterine wall and the fleshy bladder wall. The vesicouterine peritoneum was incised.

The residual portion of these vesicouterine adhesions was palpated and thinned out, layer by layer, by the tip of the right angle forceps to isolate (if any were present) fixed cohesive uterovesical adhesions (Fig. 3). No attempt was made to dissect the fixed cohesive uterovesical adhesions. At this point, the cervix was excised just below the fixed uterovesical adhesions, and a slice of the superficial layer of the uterus was spared with with the posterior wall of the bladder to avoid an unintended cystostomy. In the absence of such inseparable cohesive uterovesical adhesions, layer-by-layer dissection separated the bladder easily from the uterus to complete the hysterectomy. No sponges or holders or finger dissections were used at any stage for mobilization of adhesions.

Bladder integrity was confirmed by filling the bladder with 200 mL of saline stained with methylene blue, and the presence of any leaking was checked. Salpingo-oophorectomy was done in indicated cases. Finally, the vault was closed.

Results

During the study period, 78 women with previous cesarean section requested hysterectomies for benign indications. The mean age of these women was 40.78 ± 4.59 years. In 14 (17.94%) women, fixed adhesions of uterine corpi to anterior abdominal-wall scars[10–12] was diagnosed preoperatively; thus, these candidates were excluded from undergoing vaginal hysterectomy. The rest, 64 women (82.05%) of the total 78 women with previous cesarean section(s), underwent vaginal hysterectomies.

Table 1. Clinical Characteristics of Patients

Clinical characteristics	N = *64*	%
Cases with 1 cesarean section	26	40.62
Cases with 2 cesarean sections	33	51.56
Cases with 3 cesarean sections	5	7.81
Cases with 4 or more cesarean sections	0	0
Cases with previous pelvic laparotomy	4	6.25
Cervix reached without difficulty	63	98.43
Cervix reached with difficulty	1	1.56
Uterus size above 12 weeks and below 18 weeks of gestation	2	3.12
Cases with adnexal pathology	1	1.56

Clinical characteristics of patients (Table 1)

In 51.56% of the cases, there were histories of 2 cesarean sections, 40.62% of the cases had a history of 1 cesarean section, and only 7.81% of the cases had histories of 3 cesarean sections. No patient had a history of 4 cesarean sections. Only 4 cases had histories of previous pelvic operations. In 63 (98.43%) of 64 cases, the cervix was felt without difficulty[11,12] during bimanual vaginal examination at the office and operation theater. In 1 case, the cervix was high up because of the presence of long-band omental adhesions between the anterior abdominal wall and a uterus of 16 weeks' gestation size.

The uterus was smaller than 12 weeks' size of gestation in 62 (96.87 %) of 64 cases. Of 2 (3.12%) cases with a large uterus >12 weeks' of gestation, 1 patient had a uterus of 16 weeks' gestation size, and the other patient had a uterus of 18 weeks' gestation size. Thus, vaginal hysterectomy was initiated in every case. The maximum weight of any patient was 108 kg.

Parauterine Adhesions (Table 2)

In 26 (40.62%) of 64 patients, there was no obstruction to accessing *anterior cul-de-sac*, and vaginal hysterectomy was accomplished by using the Purohit technique.[6,13] In 38 (59.37%) of 64 patients, there was obstruction to accessing the anterior *cul-de-sac* because of the presence of dense uterovesical adhesions, and a posteroanterior route of approach was used to accomplish vaginal hysterectomy. Dense uterovesical adhesions were found in 10/26 (38.46%) patients after 1 cesarean section, in 23/33 (69.69%) patients after 2 cesarean sections, and in all 5/5 (100%) patients after 3 cesarean sections.

The posterior *cul-de-sac* was not obliterated in 62 (96.87 %) cases associated with previous cesarean section(s). In 2 (3.12%) patients, the posterior *cul-de-sac* was obliterated secondary to severe endometriosis in 1 patient and secondary to chronic pelvic inflammation in the other patient. None of the patients had incidental intraoperative detection of ventrofixation of the uterine corpus to the previous anterior abdominal-wall scar. Vaginal hysterectomy was accomplished in all 64 cases. There were no failures and there were no conversions to address uncontrolled bleeding during these vaginal hysterectomies.

Table 2. Parauterine Adhesions Found During Hysterectomy

Parauterine adhesions	N = *64*	%
Dense uterovesical adhesions	38	59.37
With one CS	10	15.62
With 2 CS	23	35.93
With 3 CS	5	7.81
Long bands of adhesion between uterine corpus and anterior abdominal wall	6	9.37
Incidental intraoperative detection of ventral fixation of the uterus to the previous abdominal incision	0	0
Thick broad ligament scarring with dense uterovesical adhesions	38	59.37
Obliterated posterior *cul-de sac*	2	3.12
Obliterated anterior *cul-de-sac*	0	0

CS, cesearean section(s).

Perioperative Outcomes (Table 3)

None of patients were excluded after the start of the procedure. Fixed cohesive uterovesical adhesions were isolated during uterovesical dissection in only 4 (6.25%) cases. In each of these patients, a slice of serosa of the uterus was spared with the posterior wall of the bladder to avoid an unintended cystostomy.

Vaginal oophorectomy was done as indicated 3 (4.68%) cases. The mean operative time was 78.59 ± 33.15 (35–190) minutes. The mean weight of specimen uteri was 161.01 ± 108.87 (50–550) g. Blood transfusion was not needed in any case. Temporary unilateral leg paraesthesia was noted in 1 case, and this condition was relieved spontaneously after 3 postoperative days. No patients had bladder, ureteric or thermal injuries to the pelvic organs. No vesicovaginal fistulas were seen. No other major postoperative complications were seen.

Discussion

Gynecologic surgeons are using the safe vaginal route of hysterectomy increasingly,[14,15] and this route may be preferred.[16] Previous cesarean section has still been a significant risk factor for unintended intraoperative cystostomy by all routes including vaginal hysterectomy.[1,4,5]

Table 3. Perioperative Outcomes

Outcomes	N = *64*	%
Exclusion after start of procedure	0	0
Cohesive uterovesical adhesion isolated during uterovesical dissection	4	6.25
Unintended bladder injury	0	0
Vaginal hysterectomy completed	64	100
Conversion	0	0
Salpingo-oophorectomy performed	3	4.68
Uteri weight up to 300 g	57	89.06
Uteri weight between 300 and 550 g	7	10.93
Fever	0	0
Blood transfusion	0	0
Leg paraesthesia (unilateral)	1	1.56
Thermal injury to pelvic organs	0	0
Any other complications	0	0

The purpose of the present study was to demonstrate a safe approach to ease vaginal hysterectomy in cases of patients with previous cesarean sections in the absence of fixed adhesions of the uterine corpi to previous anterior abdominal scarring and to avoid unintended bladder injuries during vaginal hysterectomy in cases with dense uterovesical adhesions caused by previous cesarean sections.

It was difficult to reach the cervix vaginally in cases associated with fundal adhesion of the uterus to the anterior abdominal wall,[10–12] thus patients with this problem excluded from undergoing vaginal hysterectomy. Fixed uterus adhesion to the anterior abdominal wall for prior cesarean section was determined by the clinical and sonographic signs described by Sheth et al.[11,12] and El-Shawarby et al.[10] Failed completion of vaginal hysterectomy may occur owing to the presence of thick adhesions between the uterine fundus and the anterior abdominal wall.[17]

In the absence of fundal adhesions of the uterus to anterior abdominal wall, hysterectomy was initiated and accomplished vaginally in all cases including 5 cases with 3 previous cesarean sections (Table 2). Other adhesions (Table 2) to the uterus caused by prior cesarean sections did not obstruct the completion of vaginal hysterectomy in this case series. None of these patients were excluded after the start of procedure because of incidental detection of ventrofixation of the uterine corpus to a previous anterior abdominal-wall scar.

The difficulty caused by inadequate lateral space during vaginal hysterectomy by a conventional method in cases with previous cesarean section(s) had been alleviated by the described procedure, using bipolar forceps[6] for hemostasis of pedicles instead of sutures. Similar to the current authors' findings, electrosurgery has been reported to be safe in vaginal hysterectomy by many studies,[6,13,18–21] when this technique is applied carefully. Accessibility to pedicles was increased by using a right-angle forceps[6] in this procedure. Visibility had been improved occasionally using a pelvic illuminator with a fiberoptic light source[6] during the procedure. Extraperitoneal[6] ligation of uterine arteries—instead of conventional intraperitoneal ligation—during vaginal hysterectomy decreased need of blood transfusion. Similar to observations by other studies,[11,22] the majority of the current series of patients requesting hysterectomy associated with previous cesarean sections had a uterus size of < 12 weeks' gestation or 300 g (Table 3). Thus, large volume was not an obstacle to the progress of vaginal hysterectomy in the majority of these cases. Conventional attempts[5,7] of vesicouterine dissection in the presence of dense uterovesical adhesions caused by previous cesarean sections, had still carried a risk of bladder injuries in vaginal hysterectomies. Bringing dense uterovesical adhesions down by the described posterioanterior approach so that these adhesions could be palpated in a direct tactile fashion facilitated differentiation of the bladder from the uterus and made uterovesical dissection easier. Isolation of cohesive uterovesical adhesions in this approach prevented unintended bladder injuries in the present case series.

Conclusions

Vaginal hysterectomy for benign indications associated with previous cesarean sections may be accomplished safely in the absence of fixed adhesions of the uterine corpi to previous anterior abdominal scarring. The posterioanterior approach during vaginal hysterectomy may avoid unintended bladder injury in the presence of dense uterovesical adhesions caused by previous cesarean sections.

Disclosure Statement

All authors have no commercial associations that might give rise to a conflict of interest in connection with the publication of this article.

References

1. Rooney CM, Crawford AT, Vassallo BJ. Is previous cesarean section a risk for incidental cystotomy at the time of hysterectomy? A case-controlled study. Am J Obstet Gynecol 2005;193:2041.
2. Lafay Pillet MC, Leonard F, Chopin N. Incidence and risk factors of bladder injuries during laparoscopic hysterectomy indicated for benign uterine pathologies: A 14.5 year experience in a continuous series of 1501 procedures. Hum Reprod 2009;24:842.
3. Wang L, Merkur H, Hardas G, Soo S, Lujic S. Laparoscopic hysterectomy in the presence of previous caesarean section: A review of one hundred forty-one cases in the Sydney West Advanced Pelvic Surgery Unit. J Minim Invasive Gynecol 2010;17:186.
4. Mathevet P, Valencia P, Cousin C, Mellier G, Dargent D. Operative injuries during vaginal hysterectomy. Eur J Obstet Gynecol Reprod Biol 2001;97:71.
5. Boukerrou M, Lambaudie E, Collinet P. A history of cesareans is a risk factor in vaginal hysterectomies. Acta Obstet Gynecol Scand 2003;82:1135.
6. Purohit RK. Purohit technique of vaginal hysterectomy: A new approach. BJOG 2003;110:1115.
7. Sheth SS, Malpani AN. Vaginal hysterectomy following previous cesarean section. Int J Gynaecol Obstet 1995;50:165.
8. Siow A, Nikam YA, Ng C. Urological complications of laparoscopic hysterectomy: A four year review at KK Women's and Children's Hospital, Singapore. Singapore Med J 2007;48:217.
9. Chang WC, Hsu WC, Sheu BC. Minimizing bladder injury in laparoscopically assisted vaginal hysterectomy among women with previous cesarean sections. Surg Endosc 2008;22:171.
10. El-Shawarby SA, Salim R, Lavery S. Uterine adherence to anterior abdominal wall after caesarean section. BJOG 2011;118:1133.
11. Sheth S, Shah NM, Varaiya D. A sonographic and clinical sign to detect specific adhesions following cesarean section. J Gynecol Surg 2008;24:27.
12. Sheth SS, Goyal MV, Shah N. Uterocervical displacement following adhesions after cesarean section. J Gynecol Surg 1997;13:143.
13. Purohit RK. Purohit technique of vaginal hysterectomy: A new approach performed in 214 patients. Gynaecol Endosc 2002;11;423.
14. Drahonovsky J, Haakova L, Otcenasek M. A prospective randomized comparison of vaginal hysterectomy, laparoscopically assisted vaginal hysterectomy, and total laparoscopic hysterectomy in women with benign uterine disease. Eur J Obstet Gynecol Reprod Biol 2010;148:172.
15. David-Montefiore E, Rouzier R, Chapron C. Surgical routes and complications of hysterectomy for benign disorders:

A prospective observational study in French university hospitals. Hum Reprod 2007;22:260.
16. Roy KK, Goyal M, Singla S, Sharma JB. A prospective randomised study of total laparoscopic hysterectomy, laparoscopically assisted vaginal hysterectomy and non-descent vaginal hysterectomy for the treatment of benign diseases of the uterus. Arch Gynecol Obstet 2011;284:907.
17. Paparella P, Sizzi O, Rossetti A. Vaginal hysterectomy in generally considered contraindications to vaginal surgery.Arch Gynecol Obstet 2004;270:104.
18. Mistrangelo E, Febo G, Ferrero B. Safety and efficacy of vaginal hysterectomy in the large uterus with the LigaSure bipolar diathermy system. Am J Obstet Gynecol 2008; 199:475.
19. Chia KV, Tendon S, Moukarram H. Vaginal hysterectomy is made easier with ERBE biclamp forceps. J Obstet Gynaecol 2007;27;723.
20. Samulak D, Wilczak M, Michalska MM. Vaginal hysterectomy with bipolar coagulation forceps (BiClamp) as an alternative to the conventional technique. Arch Gynecol Obstet 2011; 284:145.
21. Zubke W, Hornung R, Wässerer S et al. Bipolar coagulation with the BiClamp forceps versus conventional suture ligation: A multicenter randomized controlled trial in 175 vaginal hysterectomy patients. Arch Gynecol Obstet 2009;280:753.
22. Hsu W C, Chang WC, Huang SC. Laparoscopic-assisted vaginal hysterectomy for patients with extensive pelvic adhesions: A strategy to minimise conversion to laparotomy. Aust N Z J Obstet Gynaecol 2007;47:230.

Address correspondence to:
Ram Krishna Purohit, MD
Department of Obstetrics and Gynaecology
Purohit General Hospital
Shakti Nagar, Bargarh, pin-768028, Odisha
India

E-mail: ramkrishnapurohit@hotmail.com