

A case of Transvaginal NOTES (vNOTES) hysterectomy. Multidisciplinary minimal invasive approach for all aspects

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ABSTRACT

Objective: Minimally invasive procedures for gynaecologic diseases are used widely and provide advances in surgical equipment. All surgical procedures aim for better significant benefits for patients. As multiple-port laparoscopic surgeries are minimally invasive procedures, but multiple skin incisions and port-site pain cause anxiety for some patients. Umbilical single-port surgeries developed with advanced technological equipment like flexible optics and reticulated graspers. Single-port surgeries decreased skin incision and multiple port-site pain concerns.

Case: In this study, a 74-years-old, postmenopausal female had P2G2 descensus uteri, subtotal uterine prolapse. Complaints were about vaginal mass disturbing life quality associated with bladder incontinence. vNOTES Hysterectomy performed. Case: vNOTES Hysterectomy was performed and spinal anaesthesia was used as a regional anaesthesia (RA) for the procedure. vNOTES allow for safe surgery for ovarian and adnexal structures and visual exploration in the abdominal cavity.

Conclusion: vNOTES Hysterectomy allows safe surgery, especially for elderly and uterine prolapse cases.

Keywords: vNOTES Hysterectomy, Uterine Prolapse, Regional Anaesthesia

INTRODUCTION

Minimally invasive procedures in gynaecologic diseases are used widely and provide advances in surgical equipment. All surgical procedures aim for better significant benefits for patients. As multiple-port laparoscopic surgeries are minimally invasive procedures but multiple skin incisions and port-site pain cause anxiety for some patients. Umbilical single-port surgeries developed with advanced technological equipment like flexible optics and reticulated graspers. Single -port surgeries decreased skin incision and multiple port-site pain concerns.

flexible transgastric peritoneoscopy firstly described by Kalloo et al in 2004 in a porcine model (1). After different experiments have demonstrated the feasibility and safety of peritoneal access via transgastric, transanal, transurethral, and transvaginal routes, NOTES entered clinical practice attentively (2).

The transvaginal NOTES (vNOTES) approach is a combination of classic vaginal surgery and laparoendoscopic single-site surgery. Transvaginal routes by NOTE surgery allows safe entry, simple closure, and are less complicated. Recently vNOTES in various gynaecologic surgeries were applied successfully.

CASE

A 74-years-old, postmenopausal female had P2G2 descensus uteri, subtotal uterine prolapse. She complained about vaginal mass disturbing life quality associated with bladder incontinence. Pelvic Organ Prolapse Quantification system (POP-Q) was used after emptied bladder, the measurements are taken when the Valsalva maneuver is performed while the patient is in the dorsal lithotomy position Grade 3 – halfway past hymen prolapsus detected. Using abdominal ultrasonography endometrial echo line is atrophic and bilateral small ovaries determined. Carotid endarterectomy for stenosis and chronic obstructive pulmonary disease were in the patient's medical history. Antihypertensive agents and inhaled corticosteroids beclomethasone have been used. According to The American Society of Anaesthesiologists (ASA) the case is classified as ASA3. Spinal anaesthesia was used as a regional anaesthesia (RA).

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vNOTES hysterectomy

The patient was prepared in the dorsal lithotomy position. Surgical field was sterilized and draped.

A Foley catheter was inserted for urinary drainage. Vaginal retractors placed and cervix grasped with tenaculum. For hydro dissection, 20 cc saline solution was injected. The circular incision of the vaginal mucosa around the cervix was performed by a scalpel. Colpotomies were performed anterior and posterior. Bilateral sacrouterine ligaments were grasped and cut as in the standard procedure of vaginal hysterectomy. Gelpoint V-Path (Applied Medical, Rancho Santa Margarita, CA) was inserted through the anterior and posterior colpotomy spaces and reached the pelvic cavity.

After the vaginal procedure, laparoscopic approach with 10 mm Hg CO₂ insufflated for providing pneumoperitoneum. And rigid zero-degree telescope was inserted for optical imaging (Karl Storz visualization system; Karl Storz Tuulingen, Germany). Disposable laparoscopic grasping forceps and laparoscopic bipolar 5 mm sealing electrosurgical device, Voyant (VT) (Applied Medical, Rancho Santa Margarita, CA, USA) were used during the procedure. The uterine vessels, ovarian ligaments, adnexal structures, and Fallopian tubes were removed bilaterally caudally to cranially. After the resection of the uterus, ovaries, and tubes, all structures removed through the vaginal opening. And vaginal vault was sutured continuously with a Vicryl 1-0 suture (Ethicon, Piscataway, NJ, USA).

The patient's pain was minimal, mobilized 6 hours after surgery. The patient was discharged two days after surgery.

DISCUSSION

Laparoscopic hysterectomy (LH) and vaginal hysterectomy (VH) are minimally-invasive hysterectomy procedures. Both are associated with less pain, less visible scar formation, and less postoperative adhesion formations. Post-operative infection risk is low, and recovery is fast compared with hysterectomy through a laparotomy (3).

The disadvantages of vaginal hysterectomy when compared with laparoscopic hysterectomy are: salpingo-oophorectomy during the vaginal hysterectomy may be difficult because of the higher and deeper position of the adnexa, so this technique requires an experienced surgeon's skill (4).

During the laparoscopic procedure, surgeons can explore the whole abdominal cavity before and after hysterectomy procedures but at vaginal hysterectomy abdominal cavity visualisation is till the vaginal cuff closure. vNOTES allows for safe surgery for ovarian and adnexal structures and visual exploration in the abdominal cavity. Also, vNOTES approach avoids port site complications like scars, and wound infection and incisional herniation (5, 6), and reduces postoperative hospital stay.

The anaesthetic technique: Usually general anaesthesia is preferable for abdominal laparoscopic procedures. The safety of the use of spinal anaesthesia for abdominal laparoscopic procedures was reported in several studies (7, 8).

Spinal anaesthesia for laparoscopic surgery gives rise to shorter recovery time, spontaneously breathing and comfortable post-operative analgesia.

CONCLUSION

Combining regional anaesthesia and vNOTES surgery can provide a multidisciplinary, minimally invasive approach.

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