



vNOTES Hysterectomy: Can It Be Considered the Optimal Approach for Obese Patients?

Giovanni Buzzaccarini, Marco Noventa, Maurizio Nicola D'Alterio, Milan Terzic, Marco Scioscia, Sebastian Daniel Schäfer, Bianca Bianco & Antonio Simone Laganà

To cite this article: Giovanni Buzzaccarini, Marco Noventa, Maurizio Nicola D'Alterio, Milan Terzic, Marco Scioscia, Sebastian Daniel Schäfer, Bianca Bianco & Antonio Simone Laganà (2021): vNOTES Hysterectomy: Can It Be Considered the Optimal Approach for Obese Patients?, Journal of Investigative Surgery, DOI: [10.1080/08941939.2021.1939467](https://doi.org/10.1080/08941939.2021.1939467)

To link to this article: <https://doi.org/10.1080/08941939.2021.1939467>



Published online: 22 Jun 2021.



Submit your article to this journal [↗](#)



Article views: 287



View related articles [↗](#)



View Crossmark data [↗](#)











Citing articles: 1 View citing articles [↗](#)

COMMENTARY



vNOTES Hysterectomy: Can It Be Considered the Optimal Approach for Obese Patients?

Giovanni Buzzaccarini^a , Marco Noventa^a , Maurizio Nicola D'Alterio^b , Milan Terzic^{c,d,e} , Marco Scioscia^f , Sebastian Daniel Schäfer^g , Bianca Bianco^h  and Antonio Simone Laganà 

^aDepartment of Women and Children's Health, University of Padua, Padua, Italy; ^bDepartment of Surgical Sciences, Division of Gynecology and Obstetrics, University of Cagliari, Cagliari, Italy; ^cClinical Academic Department of Women's Health, National Research Center of Mother and Child Health, University Medical Center, Nur-Sultan, Kazakhstan; ^dDepartment of Medicine, Nazarbayev University School of Medicine, Nur-Sultan, Kazakhstan; ^eDepartment of Obstetrics, Gynecology and Reproductive Sciences, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA; ^fUnit of Gynecology Surgery, Mater Dei Hospital, Bari, Italy; ^gDepartment of Obstetrics and Gynecology, University of Münster, Münster, Germany; ^hDepartment of Collective Health, Discipline of Sexual and Reproductive Health and Population Genetics, Faculdade de Medicina do ABC, Santo André, Brazil; ⁱDepartment of Obstetrics and Gynecology, "Filippo Del Ponte" Hospital, University of Insubria, Varese, Italy

Vaginally assisted Natural Orifice Transluminal Endoscopic Surgery (vNOTES) is a recent and newly introduced technique which has a wide application in gynecologic surgery and other medical specialties [1]. This technique involves an endoscopic access creation in the vagina, through which abdominal and pelvic structures can be reached with appropriate devices. Moreover, it gained popularity since it is associated with short operative time, reduced post-operative pain, lack of visible scars, and a better cosmetic result, using natural orifices to access the abdominal cavity. In this regard, vNOTES was considered eligible for hysterectomy and was firstly described in 2012. During the last decade, several pieces of evidence suggested the efficacy and feasibility of this novel approach. Nevertheless, few meta-analyses and randomized controlled trials (RCTs) have been performed to evaluate vNOTES outcomes. Recently, Housmans et al. [2] published a meta-analysis including one RCT and five retrospective studies comparing vNOTES hysterectomy to conventional laparoscopic hysterectomy, both laparoscopically assisted vaginal hysterectomy (LAVH) and total laparoscopic hysterectomy (TLH). Notably, vNOTES showed significantly lower values for surgery duration and estimated blood loss; in addition, the data analysis did not show significant difference for intra- and post-operative complication rate, pain scores at 24 hours post-surgery and change in hemoglobin (Hb) on postoperative day 1. Patients included in the studies were adult and presented only benign gynecological disease. However, a subgroup analysis was not performed, and a systematic review and meta-analysis regarding specific populations still lacks in literature.

Considering the need for reducing post-operative pain, complications and cosmetic impairments, validation of novel surgical techniques which can improve the post-operative outcomes with an equivalent efficiency should be compared to other techniques, and appears mandatory even for specific subpopulations. On that basis, subgroup population analysis

may help identify the targets who can get the best outcomes for vNOTES hysterectomy.

According to recent data [3, 4], obesity rate is increasing and obese women are at risk of developing abnormal uterine bleeding, endometrial cancer, and infertility due to its correlation with hormonal imbalance, and for these reasons are more likely to undergo hysterectomy; moreover, obesity strongly correlates with higher risk of vascular damage during surgery, venous thromboembolism, and post-operative wound infection. For these reasons, the advancement of minimally invasive techniques plays a key role in reducing morbidity associated with hysterectomy. A recent multicentric comparative prospective study [5] was performed, with the enrolment of 45 obese patients with both benign and malignant gynecological conditions eligible for minimally invasive surgery (MIS): 15 underwent Percutaneous Surgical System (PSS) hysterectomy and 30 laparoscopic hysterectomy. According to the data analysis, authors did not find significant difference in terms of surgery duration, blood loss and visual analogue scale (VAS) pain score; moreover, no laparotomy conversions were performed; finally, cosmetic outcomes were higher in the PSS group but only in the short-term period (30 days). Aiming to reduce surgery duration, complications, and cosmetic impairment even more, vNOTES may be considered also a potential surgical approach. More recently, Mat et al. [6] reported six cases of obese patients (mean BMI 51.4 kg/m²) with early-stage endometrial cancer who underwent vNOTES hysterectomy. The authors found no need for conversion to conventional laparoscopy or even laparotomy, highlighting in any case the need of adequate expertise to perform this technique for malignant conditions.

In this evolving scenario, we read with great interest the recent cross-sectional study by Kaya et al. [7], who compared surgical outcomes following laparoscopic hysterectomy and vNOTES hysterectomy in obese patients. In particular, we appreciated the good methodology and adequate number of enrolled women, allocated in a 1:1 matching comparison, which allowed the authors to confirm shorter surgical time

and reduced hospitalization for vNOTES hysterectomy compared with “classic” laparoscopic hysterectomy, based on a robust data analysis. Once again, the authors acknowledge that this technique requires adequate surgical skills and proficiency. These data are congruent with previous studies, but introduce for the first time a comparison between vNOTES hysterectomy and TLH in obese women, confirming its role and proposing new insights about its real efficacy.

Generally, a trend in MIS is clearly detectable in gynecologic surgical approach worldwide [8, 9]. Accumulating evidence shows a positive evolution to surgical techniques with the aim of reducing post-operative complications and, moreover, cosmetic outcomes. In this regard, NOTES approaches may overcome some patient-related limits of the classical laparoscopic and laparotomy techniques. The next step may include well-designed RCTs to confirm the efficacy and feasibility of vNOTES hysterectomy for obese patients and include other surgical indications, such as malignant conditions. According to available experience published so far, surgeons may need to undergo a specific training for this technique [10]. Nevertheless, to date the progress of endoscopic techniques can tend to a limit of overall efficiency in general population, where the continuous growth in terms of skills and new approaches will hardly ameliorate the outcomes reached so far. In our opinion, the combination of appropriate surgical proficiency with selective indication could be considered the right pathway to follow in order to achieve the best outcomes, aiming for a tailored approach to overcome patient-related conditions, such as obesity.

Disclosure statement

The authors have no proprietary, financial, professional or other personal interest of any nature in any product, service or company. The authors alone are responsible for the content and writing of the paper.

Authors' contribution

All the authors conform the Journal and the International Committee of Medical Journal Editors (ICMJE) criteria for authorship, contributed to the intellectual content of the study and gave approval for the final version of the article.

ORCID

Giovanni Buzzaccarini  <http://orcid.org/0000-0002-9466-0178>
 Marco Noventa  <http://orcid.org/0000-0002-7809-6001>
 Maurizio Nicola D'Alterio  <http://orcid.org/0000-0001-9874-1488>
 Milan Terzic  <http://orcid.org/0000-0003-3914-5154>
 Marco Scioscia  <http://orcid.org/0000-0002-5757-2793>
 Sebastian Daniel Schäfer  <http://orcid.org/0000-0002-8010-1463>
 Bianca Bianco  <http://orcid.org/0000-0002-7190-9604>
 Antonio Simone Laganà  <http://orcid.org/0000-0003-1543-2802>

References

1. Butticiè S, Sener TE, Lucan VC, et al. Hybrid transvaginal NOTES nephrectomy: postoperative sexual outcomes. a three-center matched study. *Urology*. 2017;99:131–135. doi:10.1016/j.urology.2016.09.023.
2. Housmans S, Noori N, Kapurubandara S, et al. Systematic review and meta-analysis on hysterectomy by vaginal natural orifice transluminal endoscopic surgery (vNOTES) compared to laparoscopic hysterectomy for benign indications. *JCM*. 2020;9(12):3959. doi:10.3390/jcm9123959.
3. Sturlese E, Triolo O, Grasso R, et al. Thromboembolism prophylaxis in laparoscopic surgery for gynecologic benign diseases. results of a single center experience in 922 procedures. *Ann Ital Chir*. 2017;88:342–347.
4. Kahan S, Winston G. Addressing obesity in clinical gynecology practice. *Clin Obstet Gynecol*. 2018;61(1):10–26. doi:10.1097/GRF.0000000000000334.
5. Perrone E, Fanfani F, Rossitto C, et al. Laparoscopic vs percutaneous hysterectomy in obese patients: a prospective evaluation. *Facts Views Vis Obgyn*. 2020;11(4):307–313.
6. Mat E, Kale A, Gundogdu EC, Basol G, Yildiz G, Usta T. Transvaginal natural orifice endoscopic surgery for extremely obese patients with early-stage endometrial cancer. *J Obstet Gynaecol Res*. 2021;47(1):262–269. doi:10.1111/jog.14509.
7. Kaya C, Yildiz Ş, Alay İ, Aslan Ö, Aydın İE, Yaşar L. The comparison of surgical outcomes following laparoscopic hysterectomy and vNOTES hysterectomy in obese patients. *J Invest Surg*. 2021. doi:10.1080/08941939.2021.1927262.
8. Laganà AS, Garzon S, D'Alterio MN, et al. Mini-laparoscopy or single-site robotic surgery in gynecology? Let's think out of the box. *J Invest Surg*. 2020. doi:10.1080/08941939.2020.1857480.
9. Bellia A, Vitale SG, Laganà AS, et al. Feasibility and surgical outcomes of conventional and robot-assisted laparoscopy for early-stage ovarian cancer: a retrospective, multicenter analysis. *Arch Gynecol Obstet*. 2016;294(3):615–622. doi:10.1007/s00404-016-4087-9.
10. Wang CJ, Go J, Huang HY, et al. Learning curve analysis of transvaginal natural orifice transluminal endoscopic hysterectomy. *BMC Surg*. 2019;19(1):88. doi:10.1186/s12893-019-0554-0.