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Original Article

Outpatient vaginal hysterectomy: Comparison of conventional suture ligature versus electrosurgical bipolar vessel sealing

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ABSTRACT

Objective. – The aim of our study was to evaluate the feasibility of vaginal hysterectomy in an ambulatory care system and the best way to perform it between conventional and bipolar vessel sealing system ligatures.
Patients and methods. – This was a prospective study of 32 patients with vaginal hysterectomy at Lille University Hospital between December 2013 and May 2015. Two surgical techniques were compared: conventional suture ligature (CSL) and electrosurgical bipolar vessel sealing (BVS). Patients stayed in classical hospitalization but were managed how if they were in an ambulatory unit to evaluate their capacity to come back home the same evening of the surgery. The evaluation of same-day discharge was based on Post Anesthetic Discharge Scoring System (PADSS) score $\geq$ 9/10 and Visual Analogic Scale (VAS) score $\leq$ 4/10. Other data collected were: operative time, uterus weight, peroperative bleeding, PADSS score at the 8th postoperative hour, VAS score at the 4th, 6th, 8th, 12th and 24th postoperative hours, the presence of postoperative nausea/vomiting and rehospitalization.
Results. – In the BVS group, 93.8% of patients validated the combined score (PADSS + VAS) on the evening of the intervention against 50% of patients in the CSL group ($P < 0.05$). Hundred percent of BVS group patients were discharged on the day after surgery against 87.5% in the CSL group. The VAS was significantly lower in the BVS group at the 8th (1.4), 12th (1.2) and 24th (1.3) postoperative hours. Operative time was significantly shorter in the BVS group. We found more events such as nausea/vomiting in the CSL group.
Conclusion. – Vaginal hysterectomy is feasible in an ambulatory care system most of times. By reducing postoperative pain, electrosurgical bipolar vessel sealing would promote outpatient hospitalization.

Mots clés :
Hysterectomie
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Thermocoagulation
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RÉSUMÉ

Objectifs. – Le but de cette étude était d'évaluer la faisabilité des hystérectomies par voie vaginale en chirurgie ambulatoire. Le deuxième objectif était de comparer deux techniques différentes : la thermofusion ou les sutures conventionnelles au fil (CSL), et leur impact sur une sortie le soir même de l'intervention.
Patientes et méthodes. – Il s'agit d'une étude prospective réalisée entre décembre 2013 et mai 2015 chez 32 patientes opérées d'une hystérectomie vaginale au centre hospitalier régional universitaire de Lille. Deux techniques chirurgicales différentes ont été comparées : les sutures conventionnelles au fil et le système de thermofusion. Les patientes étaient hébergées en hospitalisation classique mais prises en charge comme si elles devaient sortir le soir même afin d'évaluer cette possibilité. Cette évaluation reposait sur un score PADSS $\geq$ 9/10 et une douleur évaluée par échelle visuelle analogique (EVA) $\leq$ 4/10. Les autres données recueillies étaient : le temps opératoire, le poids de l'utérus, le saignement

Abbreviations: VH, Vaginal hysterectomy; CSL, Conventional suture ligature; BVS, Bipolar vessel sealing.

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peropératoire, le score PADSS à la huitième heure postopératoire, l'EVA à la 4e, 6e, 8e, 12e et 24e heures postopératoires, la présence de nausées et/ou vomissements postopératoires et les réhospitalisations. *Résultats.* – Dans le groupe thermofusion, 93,8 % des patientes ont validé le score combiné (PADSS + EVA) le soir de l'intervention contre 50 % dans le groupe CSL ($p < 0,05$). Cent pour cent des patientes dans le groupe thermofusion sont sorties le lendemain de l'intervention contre 87,5 % dans le groupe CSL. L'EVA était significativement plus basse dans le groupe thermofusion aux 8e (1,4), 12e (1,2) et 24e (1,3) heures postopératoires. Le temps opératoire était significativement plus court dans le groupe thermofusion. Il y avait plus de patientes avec nausées et/ou vomissements dans le groupe CSL. *Conclusions.* – Les hystérectomies vaginales sont réalisables en hospitalisation ambulatoire. En réduisant la douleur postopératoire, la thermofusion pourrait réduire la durée d'hospitalisation.

Introduction

Hysterectomy is the more performed gynecological procedure. In France, 70,000 hysterectomies are performed per year [1]. There are several surgical approaches: laparotomy, vaginal route, laparoscopy, laparoscopic-assisted vaginal hysterectomy and robotic route. Laparotomy (39.6%) and vaginal route (38.5%) are the most frequent [1].

Vaginal hysterectomies (VH) have been performed for a long time and they are minimally invasive procedures. In recent years, laparoscopic hysterectomy has been developing, with minimally invasive approach but extended learning curve and more urinary tract injuries [2]. Vaginal route should be preferred to laparotomic and laparoscopic ones [2].

An estimated 40 to 50% of gynecological surgical procedures are performed on an outpatient basis in France [3,4]. This type of management tends to develop and is part of a healthcare policy. The aim is to reduce length of stay, hospital costs and improve care quality and satisfaction of our patients.

In this context, we need to develop outpatient surgery for vaginal hysterectomy (VH) in order to reach the 80% outpatient interventions set by the French National Health Authority. Stovall et al. were the first to report the feasibility of VH in an outpatient setting in 1988 [5]. Several publications followed the one of Stovall et al. [6–12]. Nevertheless, this surgical procedure is always mostly performed in classical hospitalization in 2016. In order to develop routine outpatient hysterectomy procedure, it seems important to demonstrate the feasibility of this type of hospitalization. With this aim, we evaluated 32 patients with VH procedure to evaluate if this type of surgery was feasible in an outpatient hospitalization and if a bipolar vessel sealing system (BVS) was helpful.

Materials and methods

This was a prospective study evaluating the discharge parameters validated in outpatient surgery, in patients undergoing VH in the gynecological surgery department of Lille's University Hospital. The study was conducted from November 2013 to May 2015.

We established a management protocol compatible with same-day discharge without changing the usual hospital stay of patients. The patients were in classical hospitalization but had the same management as if they were in an outpatient unit. The patients were kept in hospitalization rather going out when possible because we wanted to have a previous evaluation of the feasibility of outpatient care for VH before changing our practice. We did not ask a committee approval because we did not change our current practice. We only evaluated the pain and Post Anesthetic Discharge Scoring System (PADSS) score after VH in two different groups of patients (BVS or CSL group).

The inclusion criteria were patient eligible for vaginal hysterectomy for benign disease (uterine fibroid, adenomyosis), with the American Society of Anesthesiology (ASA) score I, II, or III-stable.

The exclusion criteria were an indication or a risk of laparoscopic route (malignant disease, need for further associated intervention [excluding vaginal oophorectomy], median laparotomy history, chronic pelvic pain, pelvic inflammatory disease and deep infiltrating endometriosis) or if there was no indication to a "same day discharge" hospitalization even if the patient stayed the first night in hospitalization. The surgeons of our unit had the choice to include or not include their patients.

Anesthesia and postoperative analgesia protocols were standardized after consensus, discussion and validation by the anesthetic team of our department (Fig. 1). We wanted to have the same anesthesia and analgesia to compare, without bias, the pain and nausea and vomiting between the two groups. The procedures were performed in the early morning. The operator was a senior surgeon (4 different practitioners) or a junior surgeon (fellow or resident).

At the beginning of the surgery, paracervical injection of lidocaine with epinephrine (20 mL) was performed to reduce bleeding and to prepare the dissection planes. In case of aesthetic contraindications, only saline was injected. The surgeon had free choice between bipolar vessel sealing (BVS) and conventional suture ligature (CSL). All surgeons used BVS or CSL depending on their experience and the number of each procedure already performed. There was no reason to prefer one to another technique. To achieve same-day discharge conditions, the urinary catheter was removed in the operating room and no vaginal packing was inserted. When BVS was used, it was the same technique that the one used with CSL. If an adnexectomy was performed in the BVS group, the utero-ovarian ligament, the tube and the round ligament were coagulated with BVS. There was no suture on the adnexal components but only to close the vagina. Two BVS systems were used (Biclamp® and LigaSure®).

Postoperative care corresponded to outpatient standards: exclusive oral drug treatments, prevention of postoperative nausea and vomiting (PONV) (ondansetron 4 mg *per os* every 8 hours).

To mimic outpatient hospitalization, the patient was supposed to drink 60 minutes after leaving the recovery room (about two hours after the end of surgery) and to eat lightly in the next hour (or three hours after the end of surgery).

Our objective was to assess the feasibility of outpatient procedure with combined Visual Analogic Scale (VAS) and PADSS scores at the 8th postoperative hour (H8). The combined score was validated if the VAS score was $\leq 4/10$ and if the PADSS score was $\geq 9/10$ (Appendix A). Were also collected VAS scoring at the 4th, 6th, 12th and 24th postoperative hours and PADSS score at the 24th postoperative hour.